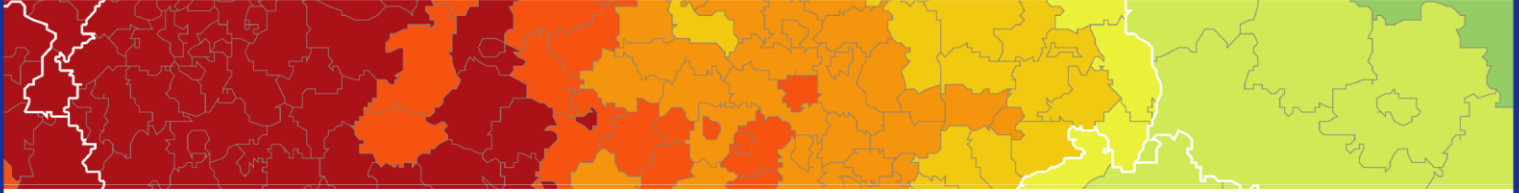


Inspire policy making by territorial evidence



# The Geography of New Employment Dynamics in Europe

Applied Research

**Final Report**  
**09.03.2018**

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#### **Authors**

Simone Buseti, Serena Druifuca, Erica Melloni, Monica Patrizio, Manuela Samek Lodovici (project leader), Cristina Vasilescu, IRS- Istituto per la Ricerca Sociale (IT)  
Lucia Barbone, Stefan Speckesser, Kari Hadjivassiliou, Rosa Marvell, Chiara Manzoni, Martha Green, Institute for Employment Studies (UK)  
Andreas Bruck, Leibniz IRS / TU Berlin (DE)  
Johannes Gajewski, Felicitas Hillmann, Leibniz IRS (DE)  
Ewa Ślęzak, Cracow University of Economics (PL)

#### **Advisory Group**

Project Support Team: Adam Dennett (UCL, London, UK); Bruno Dente (Politecnico Milano, IT); Claudio Lucifora (Università Cattolica, Milano, IT), Felicitas Hillmann (Leibniz IRS, DE)

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Karen Patient, Institute for Employment Studies (UK)

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## Abbreviations

|           |   |
|-----------|---|
| AT        | Austria   |
| BE        | Belgium   |
| BG        | Bulgaria  |
| CY        | Cyprus  |
| CZ        | Czech Republic                                      |
| DE        | Germany   |
| DK        | Denmark   |
| EE        | Estonia   |
| ES        | Spain   |
| FI        | Finland   |
| FR        | France  |
| GR        | Greece  |
| HR        | Croatia   |
| HU        | Hungary   |
| IE        | Ireland   |
| IT        | Italy   |
| LT        | Lithuania   |
| LU        | Luxembourg  |
| LV        | Latvia  |
| MT        | Malta   |
| NL        | Netherlands   |
| NO        | Norway  |
| PL        | Poland  |
| RO        | Romania   |
| SE        | Sweden  |
| SI        | Slovenia  |
| SK        | Slovakia  |
| U.S.      | United States                                       |
| UK        | United Kingdom                                      |
| COM       | Communication                                       |
| CP        | Cohesion Policy                                     |
| CRPM      | Conference of Peripheral Maritime Regions           |
| EAFRD     | European Agricultural Fund for Rural Development    |
| EC        | European Commission                                 |
| EFSI      | European Fund for Strategic Investments             |
| EGTC      | European Grouping on Territorial Cooperation        |
| ERDF      | European Regional Development Fund                  |
| ESA       | European Space Agency                               |
| ESF       | European Social Fund                                |
| ESFRI     | European Strategy Forum on Research Infrastructures |
| ESI Funds | European Structural and Investment Funds            |
| ESPON     | European Spatial Planning Observation Network       |
| EU        | European Union                                      |
| EU-13     | European Union 13 countries group                   |
| EU-15     | European Union 15 countries group                   |
| EU-27     | European Union 27 countries group                   |
| EU-28     | European Union 28 countries group                   |
| EUR       | Euros   |
| FDI       | Foreign Direct Investment                           |
| GDP       | Gross Domestic Product                              |
| GERD      | Gross domestic expenditure on R&D                   |
| GIS       | Geographical Information System                     |
| GSSI      | Gran Sasso Science Institute                        |
| HE        | Higher Education                                    |

|        |  |
|--------|--|
| HRST   | Human Resources in Science and Technology                        |
| ICT    | Information and Communication Technologies                       |
| ISCED  | International Standard Classification of Education               |
| KE     | Knowledge Economy  |
| KIT    | Knowledge, Innovation, Territory                                 |
| KNR    | Knowledge networking regions                                     |
| MS     | Member State   |
| NEET   | Not (engaged) in Education, Employment or Training               |
| NGN    | Next Generation Network  |
| NMS    | New Member States  |
| NRP    | National Reform Programme  |
| NUTS   | Nomenclature of Territorial Units for Statistics                 |
| OECD   | Organisation for Economic Co-operation and Development           |
| OMS    | Old Member States  |
| Ph.D   | Doctor of Philosophy   |
| PPS    | Purchasing Power Standards                                       |
| RCI    | Regional Competitiveness Index                                   |
| REA    | Research Executive Agency  |
| RTD    | Research and Technology Development                              |
| R&D    | Research and Development   |
| R&I    | Research and Innovation  |
| R&D&I  | Research and Development and Innovation                          |
| SMEs   | Small and Medium-sized Enterprises                               |
| SR     | Scientific Regions   |
| SSS    | Smart Specialisation Strategies'                                 |
| STEM   | Science, Technology, Engineering and Mathematics                 |
| SWOT   | Analysis of Strengths, Weaknesses, Opportunities, and Threats    |
| SWD    | Staff Working Document   |
| TAR    | Technologically-Advanced Regions                                 |
| TXL    | (id code for) Berlin-Tegel Airport                               |
| UNESCO | United Nations Educational, Scientific and Cultural Organization |
| VET    | Vocational education and training                                |
| WWII   | Second World War   |
| YEI    | Youth Employment Initiative                                      |



# 1 Aims of the study and methodology

The knowledge economy is among the main drivers of economic and employment growth in recent years, shaping the spatial patterns of employment dynamics and labour mobility.

The aim of this study is to provide quantitative and qualitative evidence on the current employment dynamics within European countries/regions, highlighting key trends and main drivers (territorial conditions and policy factors) of location preferences, with focus on the links between the KE, new patterns of high skilled (youth) migration flows (within and between countries/regions), and the evolution of socio-spatial disparities. We consider this relationship to be a crucial underpinning of Cohesion Policy post 2020 within the EU.

The study aims at answering research questions along three lines:

**PATTERNS** – Which territorial patterns related to new employment dynamics and migration trends exist in Europe? How are these patterns likely to evolve, based on current developments, recent trends and linked policy orientations? What impact will these have on future developments in different of European regions? What is the impact of territorial patterns such as diverse urban settings and flows of mobility of the highly skilled workers?

**CAUSES & EFFECTS** – What are causes and effects behind identified (new) migration patterns – especially among young (high-skilled) Europeans? What is the relation between new employment dynamics and the KE? What are important factors for the establishment and persistence of KE; e.g. what is the role of institutional settings (governance and planning, local educational system, etc.), for example in terms of path-dependencies? How important is socio-cultural vibrancy and diversity for KE being able to attract professionals from abroad? How does the KE – and identified migration patterns related to them – impact regional development and territorial cohesion within Europe? Do they entrench regional disparities; and if so, how?

**POLICY LESSONS & RECOMMENDATIONS** – How is the current European policy focus on KE sectors impacting migration and the geographical distribution of employment dynamics? What are the opportunities for regions to capitalize on place-based potentials and the skill-base of migrants? What are key policy lessons to be learned and possible strategies for CP to be recommended? What future strategies could help attain a more balanced and sustainable growth across Europe's regions?

In order to answer these research questions thoroughly, a number of issues were considered:

**First:** While analysing recent trends in the geographies of employment, the difficulty of precisely defining and measuring the KE – as well as understanding their role and evolution at different territorial levels and scales – presents a challenge. This study therefore had to not only understand the KE as such, but also its links with specific migration dynamics.

**Second:** A thorough analysis of the links between the KE, new patterns of (youth) migration and socio-spatial disparities had to first identify robust parameters to be considered and used in the analysis. Hence, aside from data related to the KE, this study took into account

institutional settings and path dependencies, soft factors (e.g. population diversity, quality of educational, social, and health services, cultural activities), and other aspects to identify and describe migration patterns and employment dynamics across Europe.

**Third:** When discussing the outcomes of this study – and looking for policy-recommendations and strategies to reduce regional disparities, as well as foster territorial cohesion – it became clear that CP needs to balance interests crucial to the (further) development of the KE on one side, and the growing territorial and social disparities – aggravated by the financial crisis of the late 2000s – threatening to further entrench existing disparities.

Given the complexity and diversity of the research activities, the adopted methodological approach combined quantitative and qualitative research methodologies. A statistical analysis of inter-regional and international migration and trends in skills-distribution and industrial structure provided a sound quantitative element of the research, while qualitative research on scenario analysis, policy approaches and case studies helped to capture emerging policy innovation from local, national and EU-levels to inform further policy change, in particular on CP. Multi-disciplinary approaches were adopted; combining sociological and policy analysis approaches, with statistical and econometric modelling and data analysis (common in economic research), and spatial analysis and GIS modelling (for the analysis of the spatial patterns new employment trends).

This final Report summarises the main findings of the study in seven chapters. The annexes to each chapter provide a more in depth analysis, a detailed description of the methodology, and additional data and figures.

The structure of the report follows the key research questions described above. Chapters 2 and 3 illustrate the territorial patterns of new employment dynamics and their relation with the spatial patterns of the KE. While chapter 2 provides an introductory background on the definitions adopted in the study and the main spatial patterns of the Knowledge economy and employment dynamics emerging from the literature review, Chapter 3 illustrates recent trends emerging from the quantitative analysis of available regional data, as well as the results of a multivariate analysis of the changing relation between the KE and labour mobility and a classification of European regional clusters according to their economic conditions and KE potential.

Based on this evidence, as well as a wide literature review and interviews with country experts involved, Chapter 4 provides a qualitative scenario analysis of the expected future developments of KE employment dynamics and migration flows within and between European countries/regions over the next 10 to 15 years. The chapter also illustrates the possible effects of Brexit on future scenarios.

Chapters 5 and 6 then focus on policy developments illustrating how national and regional policy approaches are supporting the KE and addressing the new employment dynamics. Chapter 5 is based on the review of the 2016 National Reforms Programmes and the ESIF's

2014-2020 Partnership Agreements and Operational Programmes and focuses on measures adopted to support the KE and attract high skilled workers. A more in depth assessment of the regional strategies adopted in selected six regional case studies in order to capitalise on their place based potentials and skill base is then presented in Chapter 6.

The conclusive chapter 7 provides summarises the key policy lessons for Cohesion Policy, as well as the policy implications emerging from the study.



## 2 Background: Definition and Geography of the Knowledge Economy and labour mobility

Innovation and investment in human capital are the main drivers of socio-economic and employment growth prospects for European countries/regions on a medium to long term. Technological progress is changing fast, affecting the skills needs of the labour market, particularly in the KE sectors.

### 2.1 A working definition of the Knowledge Economy

While the term knowledge economy (KE) is widely used in the literature, there is no established and definitive concept of 'knowledge economy' or 'knowledge workers' (Brinkley, 2006), and multiple dimensions are used to measure a latent/notional concept. A broad definition of the KE is, e.g., offered by Skrodzka (2016) as: *'an economy where knowledge is created, acquired, transmitted and used effectively by businesses, organisations, individuals and communities'*. This concept is very similar to the definition adopted by the OECD (OECD, 1996): as economies *'based on the production, distribution and the use of knowledge information'* (Powell and Snellman, 2004).

The geography of innovation is more complex than a simple core-periphery model; since the capacity to turn knowledge and innovation into regional growth is different between regions.

A recent ESPON study (ESPON, 2013b; Capello and Lanzi, 2013) exploring the links between knowledge, innovation and territory (KIT), adopted a multidimensional definition of KE regions, combining three paradigms:

- **sector-based:** presence of science-based and/or high technology sectors,
- **function-based:** presence of large and well-known scientific institutions and pervasive diffusion of R&D,
- **networking:** the capacity to valorise and disseminate innovations through cooperation and market interactions.

#### A working definition of KE

The KE can be defined as an economy *'able to produce new knowledge from technologically advanced sectors and/or functions present in a territorial area and/or where knowledge is obtained through links (formal or informal) with other economies'* (ESPON 2013b). Following Brinkley and Lee (2007), we use three main criteria to categorise the KE and individuate KE indicators:

- a) **knowledge-intensive sectors:**  
e.g. high-tech manufacturing and services; financial and business services, health, education, and creative and cultural services.
- b) **presence of high level scientific institutions and high educational and educational level of the population** and work force in a specific area;
- c) **investments in innovation** at firm, individual, and sector-level.

This approach underlines a dynamic conceptualisation of the KE as the *'ability to produce new knowledge from technologically advanced sectors, and/or functions present in a territorial area, and/or to obtain knowledge through developing links with others'* (ESPON, 2013b; Capello and Lanzi, 2013). Hence, a KE region is identified as a region *'specialised either in high-tech sectors, or in scientific functions or capable to obtain knowledge from other economies through*

*cooperation and networking*'. Regions may be classified as Technologically-Advanced Regions (TAR), Scientific Regions (SR), and Knowledge networking regions (KNR) (see Annex to Chapter 2- Part 2 for a description of the typology and for a map of the region distributions).

## **2.2 The spatial agglomeration patterns of KE and increasing regional imbalances**

The KE is not evenly distributed across all territories and this could increase territorial imbalances if appropriate policies are not implemented. The spatial distribution of economic activities is linked to the presence of positive externalities which determine competitive advantages, the so-called "agglomeration economies". Firms and people benefit from locating in regions/areas endowed with natural resources and easy accessibility. Additionally, firms may benefit from being located alongside many other firms if the scale of the economic environment adds to productivity, i.e. if agglomeration generates external economies. Likewise, the initial sectoral specialisation is relatively important in countries where regional disparities are high, and employment growth differentials at the regional level may mirror differences in initial sectoral specialisation (Najman et al, 2013). Significantly, the economic and financial crisis of the late 2000s accelerated agglomeration in EU-12, but had no effect in new Member States (Styczyńska and Zaman, 2013a).

Innovative economic activities are typically located in technologically more advanced regions where sufficient agglomerations of knowledge activities are present. In particular, knowledge economy sectors tend to locate in urban areas, offering high levels of social capital, networks, technology, agglomeration of knowledge and good physical accessibility.

These features of the spatial distribution of knowledge and innovation clearly show the increased economic polarisation experienced by EU regions, with a large share of activities concentrated in metropolitan areas. Urban areas are seen as the primary engines of growth offering the essential milieus for innovation and dense collaboration linkages, high levels of social and human capital and good physical accessibility. *'The presence of large cities in a region represents a potential for regional innovation capacity: cities are in fact expected to generate dynamic agglomeration economies and knowledge spillovers'* (ESPON, 2013b; Capello and Lanzi, 2013). In addition, there is a dimensional effect: the fact that some activities require a minimum scale to be fully exploited (economies of scale), often renders them only feasible in urban and metropolitan areas. Over the last decades, cities in Europe have increasingly focused on tertiarisation; a process which favours those concentrated on education and administration, compared to those with a high share of industrial production (Van Winden, 2010). That way they feed into an ongoing debate about digitalisation and tertialisation as a mega-trend within regional development.

This, in turn, contributed to an increased territorial agglomeration, especially in regions where such metropolitan areas exist, and in growing territorial disparities both between and within European countries. Although agglomeration has been fairly stable over the last decade in both the EU-15 and the EU-13 at all NUTS-2 levels, significant differences exist in terms of

agglomeration distribution between the two groups of countries: the index of agglomeration is higher in the EU-15 than in the EU-13, with no evidence of convergence between the two groups. The highest agglomeration is observed in the smallest regions, mainly capital cities, which show a concentration tendency as well as a core-periphery pattern. Interestingly, the two phenomena appear to be more important in Eastern Europe States where the spatial hierarchy with large metropolitan areas (LMAs) at the top is more pronounced than in the EU-15 (Styczyńska and Zaman, 2013b).

Another distinctive feature of the KE is its capacity to create (and necessitate) high-skilled high-wage jobs (and workers), and to produce spill-over effects i.e. the creation of jobs in related sectors, fostering a demand for workers 'upskilling' (Machin and Van Reenan, 1996). Thus, areas where high-tech companies are located often also experience growth in other industries. As shown by Moretti (2010) there is a multiplier effect on local employment; not only due to the creation of high quality jobs in the high tech sectors, but also in traditional sectors employing lower skilled workers (like personal services, transportation etc.). In his book 'The New Geography of Jobs', Moretti, using estimates for the United States, shows that each high-tech job in a metropolitan area produces an average of five additional local jobs in traditional sectors (Moretti, 2010). He highlights this as a biased development. Rural and peripheral regions are disadvantaged in this dynamic change towards a knowledge-based economy. Certainly, they often lack not only physical infrastructure to support the dissemination of knowledge, but also a highly qualified labour force and cluster structures for innovation (Bengoia and Kaufmann, 2014, Dahlström and James, 2012). Hence, one of the main consequences in relation to the development of the KE is the mobility of highly skilled migrants, in particular young people, towards regions and urban centres that offer a match with their own skill levels; ultimately leading to further polarisation between regions with potentials for the KE, and those without. Investments in the creation of clusters and networks might favour the establishment or the expansion of KE-based industries in these regions. This, as a consequence, could support the convergence between these regions and urban regions (Blank, 2006).

### **2.3 Employment dynamics, new migration patterns and regional disparities**

The free movement of workers is a fundamental principle of the European Union<sup>1</sup>, and migration has become a key factor for population change in Europe<sup>2</sup>. Migration processes are influenced by many factors, related to e.g. the economic situation, institutions, culture, etc. Areas from which migrants leave (due to so called push factors) are often compared to the situation in the arrival regions (offering so called pull factors). Yet, aside of such (regionally diverse) factors, it is of utmost importance how economic risks and opportunities abroad are perceived by

---

<sup>1</sup> As stated in Article 45 of the Treaty on European Union and the Treaty on the Functioning of the European Union

<http://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:12012E/TXT&from=EN>

<sup>2</sup> As defined by Eurostat, see <http://ec.europa.eu/eurostat/web/population-demography-migration-projections/migration-and-citizenship-data>

residents of other countries/regions. Normative frameworks and narrations come into play in the complex process of migration, gender dimensions become manifest and institutional resources determine the trajectories of migrations (Hillmann, 2016, p. 12)

Before 2004, mobility within the EU was limited, and the labour markets of individual countries still were organised nationally and separated from each other: data for 2002 shows that only 1.5 per cent of EU workers had moved to a different member state (Dobson, 2009). Also, the effects of accelerated globalisation were not yet prominent and migratory flows were seen as part of changing flows of capital, leading to a restructuring in receiving economies, with an expansion of the supply of jobs that can be filled by immigrants (Sassen, 1988). A change in this trend occurred after 2004, and many authors have linked this change to the enlargement of the EU: the EU-8 countries<sup>3</sup> joined the EU in 2004, and Romania and Bulgaria joined in 2007. While most EU-15 countries restricted the access to their labour markets, UK and Sweden did open them to selected groups of workers. Similarly to what happened when southern countries were included in the EU in the 1980s, the countries with higher wage levels feared that they would receive a strong inflow of workers.

Available data shows that the recent increase in intra-EU labour mobility is due to particularly strong flows out of some eastern European countries and, to a lesser extent, southern European countries that were heavily affected by the economic and financial crisis of 2008-09 and the European debt crisis. This led to difficult labour market conditions for young workers, in particular highly skilled workers, with rates of youth unemployment climbing to over 50 per cent in some regions. These developments raised concerns about the implications for the sending countries in terms of growth potential, demographic balance, public finances, and brain drain. Indeed, citizens living in another MS now represent more than 10 per cent of the working-age population of Romania, Portugal, Lithuania, Latvia and Croatia (Canetta et al., 2014).

According to Kahanec et al (2009), during the recent crisis high-skilled immigrants were more likely to return at home than low-skilled immigrants who were unlikely to re-enter the labour market back home. In 2013 return migration made up 25% of immigration flows at EU level, although with considerable country variations (Fries-Tersch and Mabilia, 2015). Specifically, in several Eastern European countries<sup>4</sup>, return migration accounted for over 50% of immigration, whereas in Romania it was as high as 90% (Fries-Tersch and Mabilia, 2015). Interestingly, between 2008 and 2013 return migration of EU-10<sup>5</sup> citizens progressively increased, reflecting a relative decline in East-West migration (Fries-Tersch and Mabilia, 2015).

However, the differing migration history of a country, the political system and the structure of the labour market, as well as welfare systems in European countries mean that a cross-national

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<sup>3</sup> Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia.

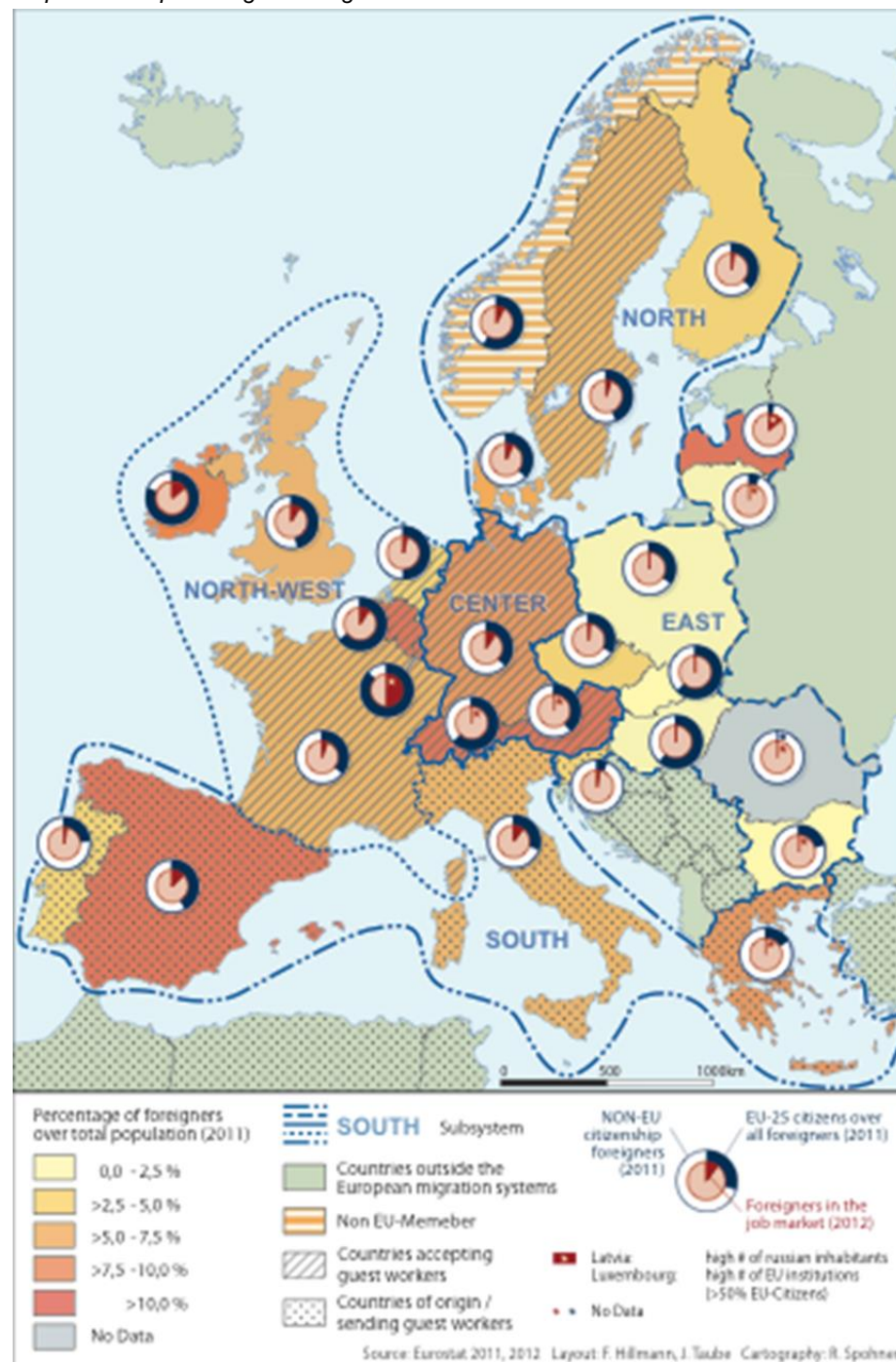
<sup>4</sup> LV, PL, EE, PT, LT and RO (Fries-Tersch and Mabilia, 2015).

<sup>5</sup> The EU10 countries comprise Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia.



comparison of raw data can be misleading. Indeed, Europe's diverse migration patterns can be characterized into several different migration regimes, as illustrated in Map 2.1.

Map 2.1: European migration regimes



Source: Hillmann (2016), p. 233

While the north-western migration regime is characterised by societies that have colonial relations with countries in the global south and had to face the challenges of a multi-ethnic society early, Central European countries (Germany, Switzerland, Austria) established a guest-worker system that focused on the rotation and the possible non-admission of a permanent foreign population. Southern European countries were historically emigration countries until the

1980s, and they then switched to being immigration countries as their economic conditions improved, although and their labour markets are often organised more informally than other European markets. Today, due to their geographical position, they also face strong inflows from migrants crossing the Mediterranean Sea. The former Soviet-dominated countries in the eastern part of Europe have today become countries of transitory migration, such as Poland, Hungary, and the Czech Republic. In countries, such as Latvia and Lithuania, the role of the Russian minorities is still important and reflected in the statistics with the designation of 'foreigners'. The Scandinavian migration regime is characterised by a high presence of refugees, and lower in-migration levels related to work, and a sound welfare system.

The liberalisation of migration has been shown to increase the share of migrants who are highly skilled (Huber and Bock-Schappelwein, 2014). The distinction between the different migration regimes helps understanding this further. In particular, the post-Soviet countries, such as Poland, have experienced the establishment of western educational systems during the years of transformation, which in return has produced a vast number of eligible highly skilled European workers today.

There is also an increase in the movement of international and foreign students who are mainly attracted by the academic reputation of the education system, or by subsequent immigration opportunities (OECD, 2014a). Since 1988 EU programmes such as ERASMUS have stimulated the exchange of students among the European universities, and the introduction of the Interrail Ticket in the 1980s made it possible for young people to travel easily across the continent for the first time in the history of Europe. The absolute number of international and foreign students has been increasing during the last decade, as reported by the OECD. In particular, in the EU OECD countries, the ratio of foreign students coming into countries is significantly less than the number of same country's citizens studying abroad, with a ratio of around 2:7. Worldwide, European universities are attractive not only because they maintain high standards of education, but also because in some countries education is (or was) free of tuition fees. In particular, in spite of its high costs, the UK has been the most attractive country for foreign students, and this has become an important source of co-financing for local universities<sup>6</sup>.

The countries that have had the highest rate of active emigration of highly qualified people within the past ten years are Romania (9 per cent), Lithuania (7.2 per cent), Slovakia (6.5 per

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<sup>6</sup> As shown in the London case study in the Annex to Chapter 6, London attracts international students – 30% of its students are international – who come to study in one of its 38 universities. Although London is an expensive city in global terms, studying in London is considered to be good value for money and a good investment. Moreover, compared to other major competitor cities for international students such as New York and Melbourne, the costs of studying in London are quite comparable. Crucially, since one can do a Master's Degree in a year in the UK (instead of longer somewhere else), this compressed time for post-graduate study is also seen as a way of saving study costs. As a result, the costs of studying in London are both a pull and push factor. The fact that London has one of the largest and most diverse clusters of universities and HE colleges in the world means that students can choose from an extremely wide range of both academic and vocational courses, enhancing London's appeal to international students. To these one can add the widespread use of the English language as a second language which means that international students are more likely to have the necessary language skills.

cent), Latvia (6.2 per cent) and Poland (6.2 per cent) (Canetta et al, 2014). With the exception of Slovakia, these are also the countries with the highest overall rate of recent economically active EU movers (Canetta et al, 2014). Among receiving regions, the London region (and the City of London, which is a key centre of international banking and financial services) has attracted a large number of high skilled young Europeans (although some may have initially end up working in less high skilled jobs in their transitional phase into permanent employment).

Even if the phenomenon is becoming increasingly important over time, estimating migration flows is a particularly complicated exercise, especially when considering the regional and subregional level. Indeed, administrative data usually collects information on people registered upon arrival, while leavers are not recorded as such (Blanchflower and Lawton, 2008). Also, apart from few studies<sup>7</sup>, in many cases the disaggregation of flows at the NUTS2 is limited, and there is a lack of data at the NUTS-3 level, limiting the analysis of intra-European, interregional migration. Finally, another issue is that data on internal migration may not be available for all countries/regions and for all years of interest. All of these constraints limit the empirical assessment and research that can currently be conducted on labour mobility and its determinants.

Meanwhile, understanding the motives behind high skilled migration flows (e.g. push factors related to economic and employment conditions in the country of origin, and pull factors, e.g. host country's attraction factors) as well as the effects of migration on growth and employment – for both sending and receiving regions – is crucial to understand new employment dynamics in Europe.<sup>8</sup> Thus, this section reviews the literature on migration determinants, migrants' characteristics, and the consequences for both sending and receiving countries/regions.

Even if migration is a highly regulated process that relies on personal and institutional networks and their extent over national boundaries, studies on the topic have identified some factors as main drivers of the decision to migrate. Together with the description of migrants' characteristics, and the consequences of migration on both sending and receiving regions, these factors are summarised in what follows<sup>9</sup>.

The literature defines characteristics that cause workers to leave as push factors: those that incentivise them to relocate to a specific area as pull factors: The most important **push factors** often identified in the literature are the labour market conditions of the area in focus, such as low wage profiles, high unemployment rates, and low economic development compared to other regions (Thaut, 2009). Differences in job opportunities and employment conditions drive

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<sup>7</sup> See Denet and Wilson (2013) demonstrating a method for estimating inter-NUTS2 regional flows.

<sup>8</sup> See: Harris J R and Todaro M P (1970), 'Migration, unemployment and development: A two-sector analysis', *American Economic Review*, Vol. 60, No. 1, pp. 126–142; Borjas G J (1999), *Heaven's door: Immigration policy and the American economy*, Princeton University Press; Massey D S (1993) 'Theories of international migration: A review and appraisal', *Population and Development Review*, Vol. 19, No. 3, pp. 431–466; Goldin I, Cameron G and Balarajan M (2011), *Exceptional people: How migration shaped our world and will define our future*, Princeton, NJ, Princeton University Press.

<sup>9</sup> For a detailed review see the Annex to Chapter 2- Part2.

people from areas with fewer opportunities to areas with greater opportunities. On the other hand, **pull factors** are also related to economic reasons and conditions, but also to personal networks (Dobson, 2009), the cultural and institutional environment (Verwiebe, 2014), the existence of recruitment agencies (Dobson, 2009), the average life satisfaction, programmes for the access to institutions facilities, and spatial factors (De Simone and Manchin, 2012) that are of utmost importance in the perception of opportunities elsewhere and the socio-normative framework (Hillmann 2016).

In terms of migrants' characteristics, **young people tend to be more mobile than older generations** (Verwiebe, 2014), and are also more likely to move closer to urban centres (Dennett and Willson, 2013). Furthermore, workers in the knowledge sectors tend to show higher mobility rates than other workers (Englmaier et al., 2014) – when leaving out the informal sector with the many workers in the care profession.

Migration flows have important **consequences on both areas of departure and arrival**. On one side, skilled migrant inflows in receiving regions have been shown to increase the growth rate (Kim et al., 2010), and to bring substantial net contribution to the some economies, such as the UK (Dustmann and Frattini, 2014). Migration has e.g. been identified as the main source of demographic growth in the majority of urban regions in the EU (Styczyńska and Zaman, 2013b). However, receiving regions can also experience damaging consequences due to e.g. housing shortages, constraint on the welfare system (Dobson, 2009), and a possible downward impact on wages; even if results are not yet conclusive on the extent to which this is significant or not (Lemos, 2014). On the other side, sending regions tend to be relatively damaged by migrants' outflows, which have been linked to labour market shortages, demographic pressures, and the 'brain drain' phenomenon (Dayton-Johnson et al, 2009). In particular, the outflow of young highly skilled workers is likely to cause long-term implications for economic potential and competitiveness. However, regions can also gain from emigration in terms of remittances (Kim et al., 2010), a reduction in downward pressure on wages, increasing opportunities for non-emigrants (Thaut, 2009), and a potential increase of the human capital and skills-stock (Dobson, 2009). This situation leads to more pronounced imbalances.

### 3 Recent trends in spatial patterns of KE and labour mobility in Europe

As indicated in the previous chapter, the KE as such can cover many areas, including production of goods and services, education, information infrastructure and systems of innovation. Therefore, research into KE requires the identification of appropriate empirical measures for latent dimensions to obtain empirical evidence. In this section, we describe the KE and its links to the territorial patterns of migration and employment following the working definition of KE illustrated in the previous chapter and selecting a number of indicators grouped in the following categories:

- KE and Innovation
- Labour Market and Education
- Migration and Demography
- Geography and Territorial Conditions
- Contextual Indicators

The selected indicators were used for a multivariate analysis to identify the KE on one side, relate it to migration patterns on the other, and finally, discuss the impact of the KE on migration.

This analysis is based on data for 420 NUTS-2 regions, including extra-Regio<sup>10</sup> territories and undefined territories<sup>11</sup>, or 359 NUTS-2 when these are excluded<sup>12</sup>.

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<sup>10</sup> Territory of Member States located in areas of the globe that are remote from Europe (outermost regions). They are Guadeloupe, French Guiana, Réunion, Martinique, Mayotte and Saint-Martin (France), the Azores and Madeira (Portugal), and the Canary Islands (Spain).

<sup>11</sup> These are territories that have a special status in the EU due to historical, cultural, or geographical reasons. Annex to Chapter 3 provides a detailed description of the available indicators, in which we follow other empirical descriptions, e.g. those presented in D'Andrea (2010), to look into relevant indicators of the KE such as: employment in critical sectors and occupations (e.g. professional and associate-professional technician levels); tertiary education rates; STEM/ICT skills and sectoral size; number and size of scientific and higher education institutions; R&D spending (public and private sector) and relation to overall economic activity; application of patents.

<sup>12</sup> Data limitations were encountered at three levels: geographically, in terms of aggregation, and related to time period coverage. For example, data on government spending in education is available only at NUTS0 and NUTS1 levels and the available amount of information is not consistent over time. Meanwhile, data on students enrolled in tertiary education is available at NUTS3 level and only from 2011. The same issue can be found for data regarding working occupations in Europe and ESPON partner countries. Information on the number of managers, professionals, technicians and low skilled workers in 2011 is only available for some NUTS1 regions. Additionally, data on migrants' countries/regions of origin is not available. Furthermore, some gaps in the data are also present at NUTS2 level for the variables included in the analysis. In particular, the infrastructure indicator (road) presents missing values for the majority of the regions comprising the UK. We checked if this can affect the validity of our results by conducting our full analysis excluding the UK, and concluded that there is no significant impact on the validity of the analysis presented here.

However, relying on a time period for which a good set of variables was available, existing information was used to identify key factors defining migration choices and recent trends in migration could be explored. Also, the dataset was improved by managing to overcome missing values issues via imputation. Nevertheless, and although the response to data limitation was adequate, the results obtained in this analysis should be read with caution because the estimated impact of the KE on net migration rate may be upward biased.

### 3.1 Spatial patterns of the KE and recent trends

Given the multi-dimensional definition of the KE discussed in Chapter 2, and based on available data, the following indicators were used to pin down the KE: i) Population with tertiary education; ii) R&D expenditure and personnel working in R&D sectors; iii) Human resources in science and technology.

**These indicators show a clear and increasing spatial concentration pattern in Northern and Western regions, while Southern, Eastern and peripheral regions are lagging behind.**

There is a divergence in trends between education and employment: while tertiary education rates are getting closer to each other across European countries, as lagging regions are catching up with those at the top although still presenting lower rates; employment rates are growing further apart. Additionally the data for expenditure on research and development (R&D) indicates an imbalance between KE and lagging regions, although a lack of time series information means that the report cannot comment on any trends.

#### 3.1.1 Population with tertiary education and Human resources in science and technology

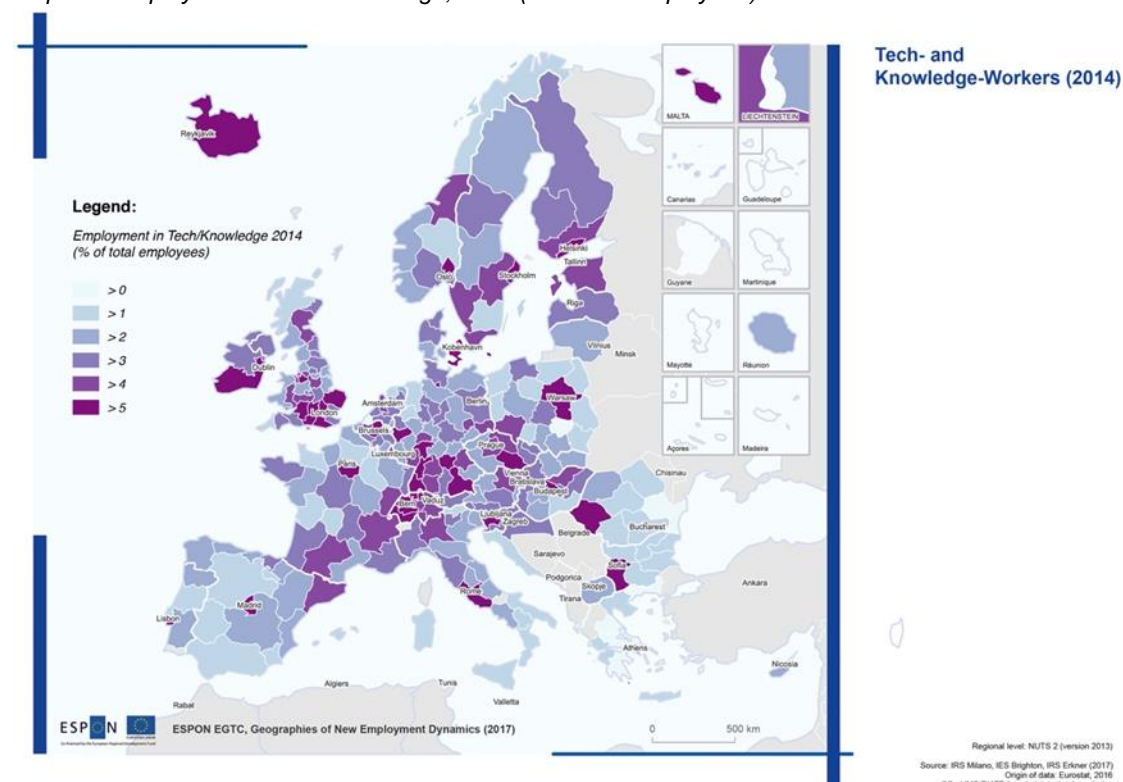
**The tertiary education rate has substantially increased from 2004 in all regions, with the average rate going from 20% in 2004 to 28% in 2014. However large disparities across regions persist.** The share of population with tertiary education ranged in 2014 from a minimum of 7.6% (Şanlıurfa Subregion, Turkey) to a maximum of 69.8% (Inner London – West, UK). The highest rates of tertiary education are recorded in Northern, Western European, and ESPON partners' regions, while Southern and periphery regions appear to be lagging behind.

Human resources in science and technology are measured through a range of indicators, in particular 'employment in tech/knowledge'; 'employment growth in scientific and professional occupations'; and 'persons with HE in science and technology'. The territorial patterns of these indicators are similar to those of the population with tertiary education. As shown in Map 3.1 the Employment in technology and knowledge<sup>13</sup> indicator was on average 3.34% in 2014, while the employment growth in scientific and professional occupations was 3.44%. Northern European and ESPON partner regions again show the highest average percentages of individuals employed in technology and knowledge sectors.

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<sup>13</sup> This indicator includes employment in high-technology sectors (high-technology manufacturing and knowledge-intensive high-technology services) as defined by Eurostat (see Annex to Chapter 3 – Part 1)

Map 3.1: Employment in tech/knowledge, 2014 (% of total employees)



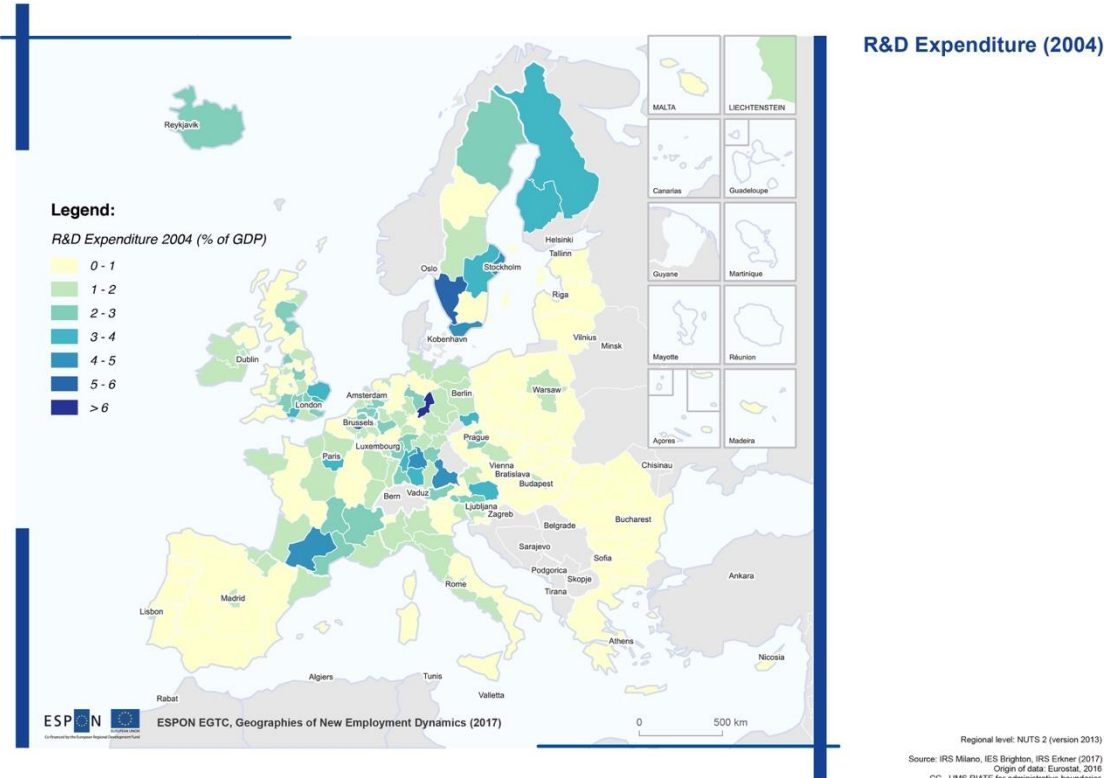
### 3.1.2 R&D expenditure and personnel working in R&D sectors

Map 3.2 and Map 3.3 show the regional distribution of the R&D expenditure as a percentage of GDP in 2014 and in 2004. **Between 2004 and 2014 almost all regions registered an increase in the indicator, although large regional differences still persist.** The average R&D expenditure (as a percentage of GDP) in 2014 was 1.6%, ranging from a minimum of 0.03% (Centru, Romania) to a maximum of 11.48% (Walloon Brabant, Belgium). Regions of Northern and Western Europe as well as ESPON partner regions have higher percentages of R&D expenditure than others. Over the period 1999-2014, R&D expenditure increased especially in the regions of Northern and Western Europe.

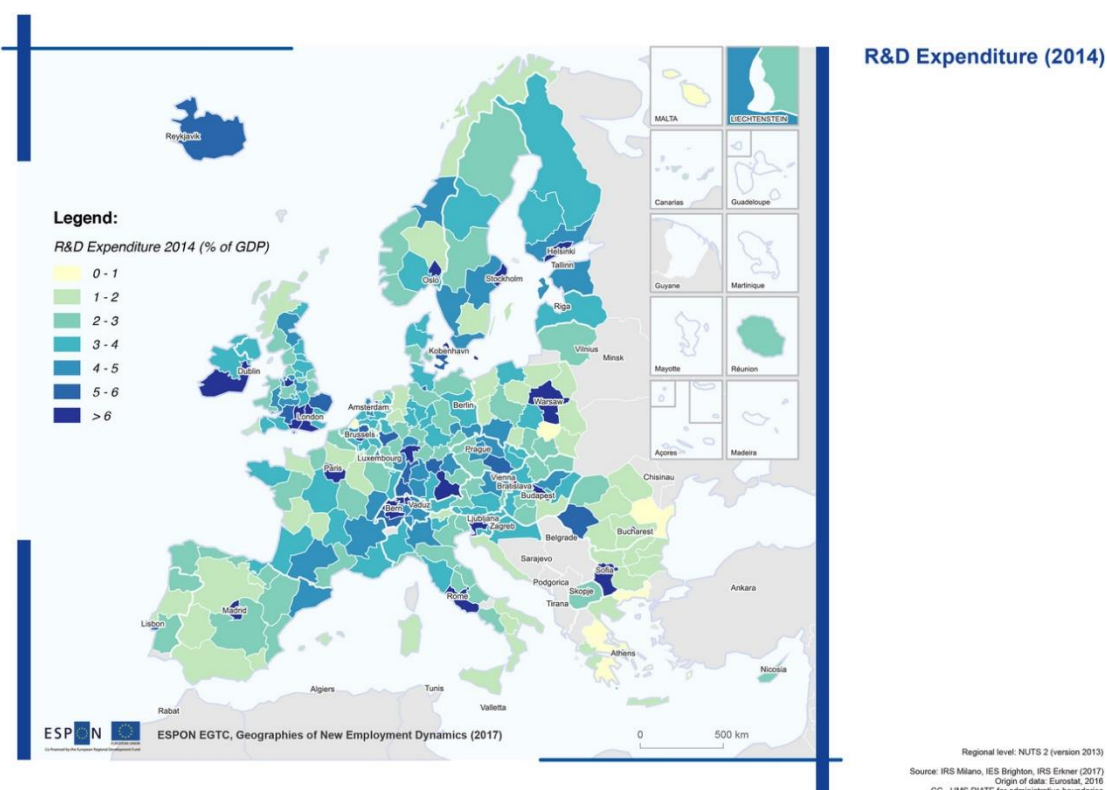
The average percentage of the workforce employed in R&D sectors was 1.24% in 2004 and 1.62% in 2014, ranging from a minimum of 0.07% (Ceuta, Spain) to a maximum of 5.29% (Prague, Czech Republic). In 2014, ESPON Partners regions, Western and Northern European regions presented the highest share of the workforce employed in R&D.



Map 3.2: R&D Expenditure (as % of GDP) 2004



Map 3.3: R&D Expenditure (as % of GDP) 2014





### 3.2 Spatial patterns of intra-European migration and recent trends

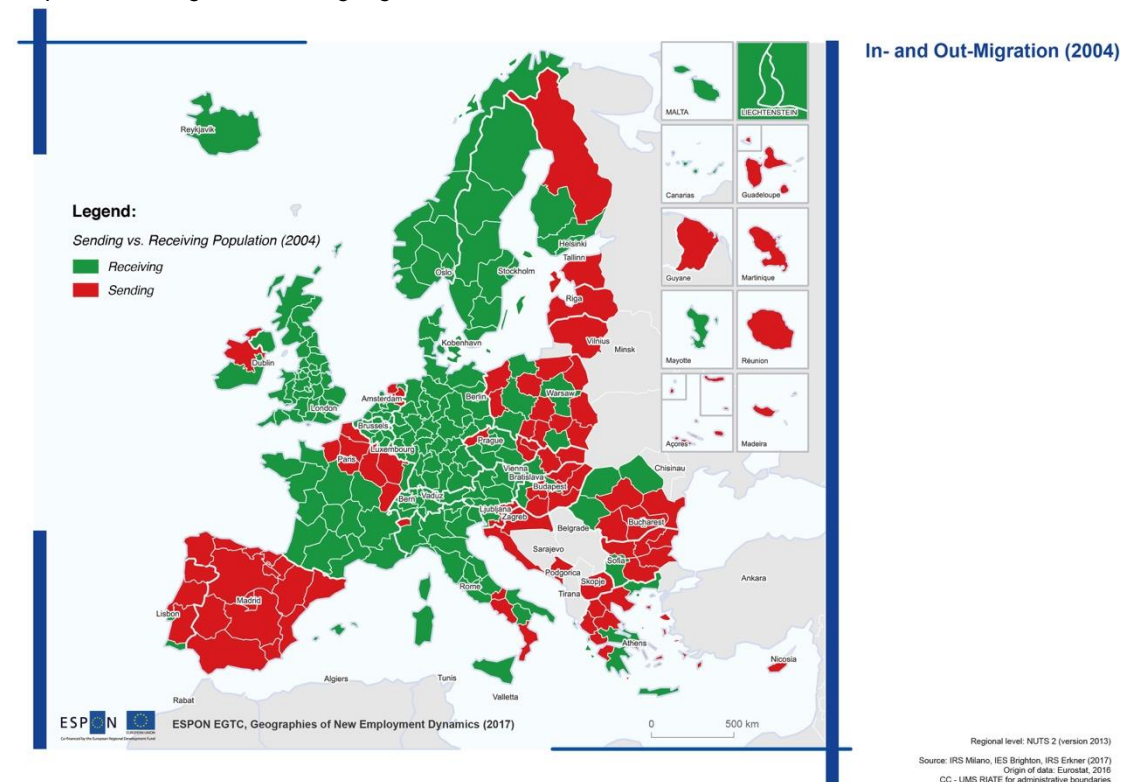
Measuring migration is difficult, and data gaps are evident across Europe.

Over the period 1999-2014, average net migration in Europe was overall positive, with more immigrants entering than emigrants leaving.

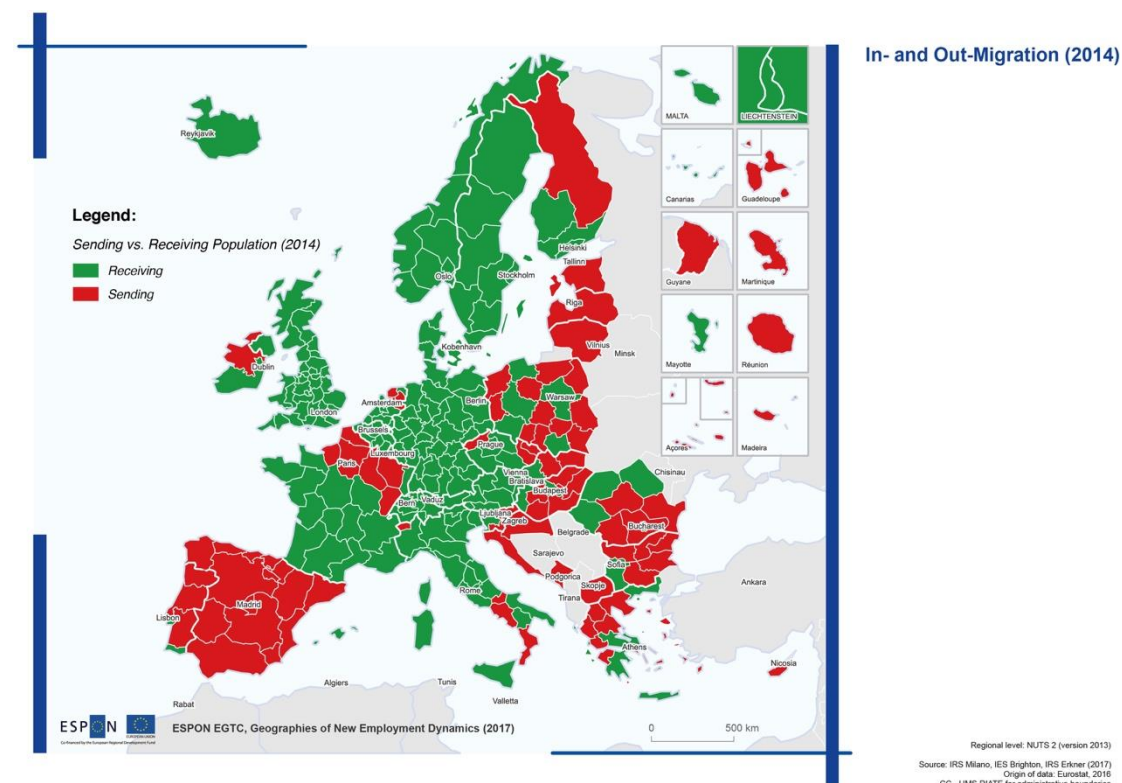
**However, the overall net migration rate shows large differences across regions and countries as well as a dynamic behaviour, fluctuating across the years.**

The net migration rate per 1,000 inhabitants varies across different groups of regions with, for example, Eastern EU, Turkey, and FYROM/Montenegro regions reporting a substantially negative net migration rate, while Northern, Western, and ESPON Partners regions report a substantially positive rate. Southern European regions have experienced a decline in the rate over the period (see Maps 3.4 and 3.5).

Map 3.4: Sending and receiving regions 2004



Map 3.5: Sending and receiving regions 2014



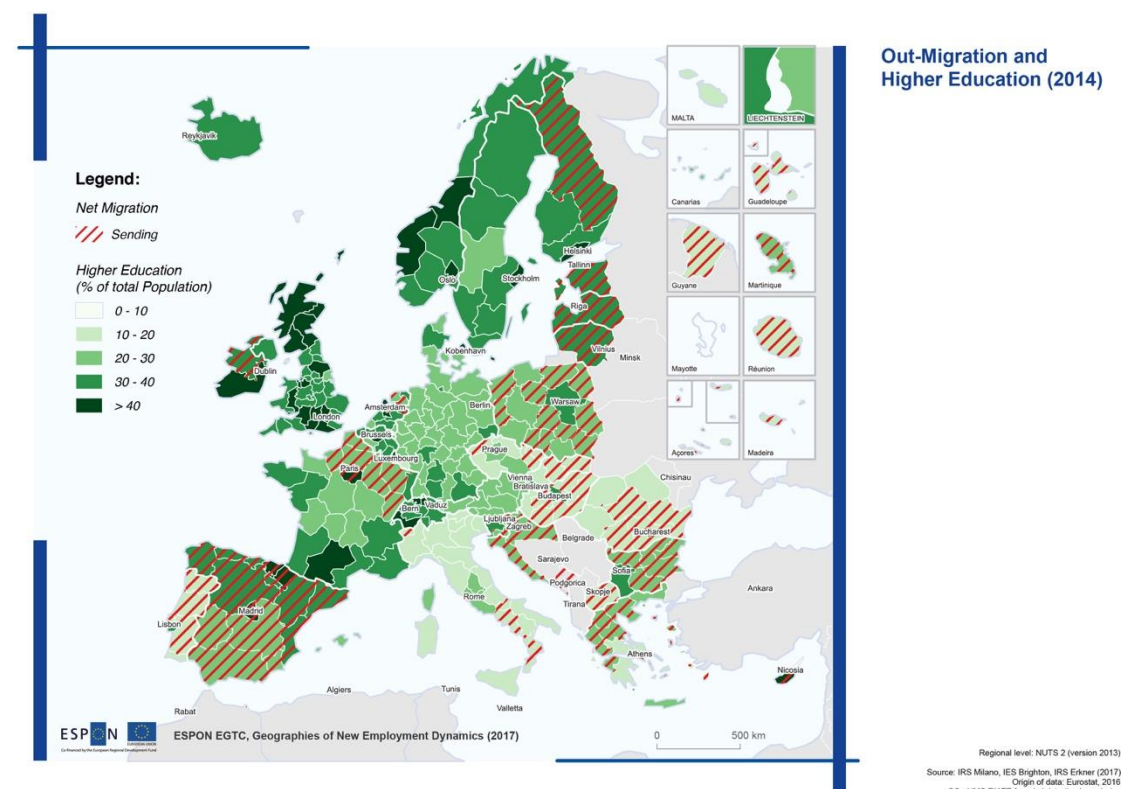
Taking 2004 and 2014 as reference years – in an effort to analyse effects of the economic and financial crisis of 2008-09 and European debt crisis with a pre-crisis and post-crisis comparison– changes become evident. In 2004, the average net migration rate in the entire area was 3.3 per 1,000 inhabitants, ranging from a minimum of -9.8 (Vidin Province, Bulgaria) to a maximum of 25.4 (Comunidad Valenciana, Spain), while in 2014 it was 2.12, with a minimum of -26.9 (Ağrı Subregion, Turkey) and a maximum of 19.9 (Luxembourg). While, generally speaking, regions with a negative net migration rate can be defined as 'sending' regions, and regions with a positive net migration rate as 'receiving' regions, this classification is dynamic in nature, since regions can change their status over time.

Maps 3.4 and 3.5 above show 'sending' and 'receiving' regions in 2004 as compared to 2014. Some regions, for example, in Spain, Ireland, and Finland had positive migration rates in 2004, and negative migration rates in 2014 reflecting the fact that, in general, sending regions tend to be concentrated at the periphery of Europe. Nevertheless, this classification on NUTS 2 level is not only prone to annual changes, but also is of limited use due to intra-regional disparities and lack of detail regarding migration balances. Moreover, migration flows and detailed information regarding, for example, trajectories or residency times cannot be obtained from this data.

### 3.3 The changing links between KE and Migration: A Multivariate Analysis

Map 3.6 puts together an indicator of the presence of the KE (e.g. the percentage of people in each region with higher education), and regions losing population (sending regions), showing that **regions presenting a high share of highly educated population, are not losing their population.**

Map 3.6: People with Higher Education (as % active population) and regions with negative net migration (2014)



In order to gain a more detailed understanding of the link between migration and the KE when controlling for other regional characteristics, a multivariate analysis was used<sup>14</sup>.

As described in detail in Annex to Chapter 3, variables included in the model resulted from a literature review and include unemployment rates as a push factor and GDP per capita as a pull factor for migrants. Literature also suggested considering whether areas were rural or urban, and capital city effects. The physical infrastructure<sup>15</sup> of a region is another important driver for migration and we included as proxy the length of roads available in the region in the estimated model.

<sup>14</sup> For details on the econometric analysis see Annex to Chapter 3 – Section 2.2.

<sup>15</sup> As highlighted in European Commission (2014e), Infrastructure in the EU: Developments and Impact on Growth, Occasional Papers series 203.  
Available at [http://ec.europa.eu/economy\\_finance/publications/occasional\\_paper/2014/pdf/ocp203\\_en.pdf](http://ec.europa.eu/economy_finance/publications/occasional_paper/2014/pdf/ocp203_en.pdf)

**Our estimates show that GDP per capita and the unemployment rate are the most important factors associated with migration.** An increase of 1 percentage point in the unemployment rate is associated with a net immigration rate 0.07 percentage points lower, while a similar change in GDP per capita is associated with a net immigration rate 0.046 percentage points higher. Taken on its own, there is no statistically significant association between the variable indicating whether a region can be described as a KE and the net migration rate when other fundamental factors are taken into account. However, in a more flexible model which allows the relationships between variables to differ in the periods before and after the peak of the economic and financial crisis of 2008-09 and European debt crisis, we found that the KE indicator changed its link with the immigration rate. While in the period before the crisis the KE indicator showed a negative and weakly statistically significant association with the net immigration rate, after the crisis, there was a statistically significant and positive relationship between migration and the KE indicator measured by the regional percentage share of individuals with higher education employed in science and technology.

**Overall, the results obtained suggest that the KE is associated with immigration and is increasingly associated with regional imbalances.** However, changes in the relationship between the KE and migration have occurred since the crisis, with reductions in the role of some pull factors, such as GDP per capita, and increases in the role of some push factors, such as the unemployment rate. For example, the importance of the GDP per capita as a pull factor for migrants significantly decreased in the aftermath of the crisis: a 1 percentage point increase in GDP per capita was associated with a increase in the net migration rate of circa 0.03 percentage points. Unemployment (as a push factor) has become instead more pronounced: a one percentage point increase in the unemployment rate was associated with a net migration rate 0.078 percentage points lower. A further triangulation of estimating models with alternative specifications or introducing a multi-level structure confirmed these findings.

**The strength of the relationship between the KE and migration rates changed with the economic and financial crisis of 2008-09 and European debt crisis:** regions with a more developed KE experienced higher net migration rates following the crisis. With some caution, a likely mechanism to the changing role of the KE might result from the increased formal level of education of resident populations across the EU and, therefore, also the likely higher skilled migration flows. It seems that the crisis has, arguably, pushed more highly skilled migrants towards areas with higher standards of living and where the KE is more developed, and thus where the returns to human capital are greater. An alternative potential explanation (which might also be complementary) could be related to changes in national legislation towards immigration<sup>16</sup>, as documented in various research papers<sup>17</sup>.

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<sup>16</sup> Please note that the immigration figures do not allow one to disentangle EU and non-EU migrants.

<sup>17</sup> See for instance Cerna L (2016) The crisis as an opportunity for change? High skilled immigration policies across Europe. *Journal of Ethnic and Migration Studies*.42(10):1610-1630.

### 3.4 The potential for the KE in European regions: a classification

In order to derive a classification of EU regions with respect to their potential for the KE, and their economic and labour market conditions, population and migration dynamics, we performed a cluster analysis<sup>18</sup>. This multi-dimensional analysis also informed the selection of the six regional case studies analysed in Chapter 6.

In line with the analysis in the previous sections, the classification was based on a selection of regional indicators for each one of the following four main dimensions:

- Labour market;
- Migration and population dynamics,
- Knowledge Economy potential;
- Context indicators.

Table 3.1 presents the indicators considered for each dimension among those usually adopted in the literature and available at the regional level<sup>19</sup>.

Table 3.1: List of dimensions and indicators at NUTS 2 level

| Dimension                         | Indicator   | Source  |
|-----------------------------------|---|---|
| Labour Market and Education       | Young people neither in employment nor in education and training (NEET rates) – 18-24 | Eurostat-Regional Statistics (edat_lfse_22)     |
|                                   | Adult Employment rate (25-64 years)   | Eurostat-Regional Statistics (lfst_r_lfe2emppt) |
|                                   | Youth employment rate (15-24 years)   | Eurostat-Regional Statistics (lfst_r_lfe2emp)   |
|                                   | Adult Unemployment rate (24+)   | Eurostat-Regional Statistics (lfst_r_lfu3pers)  |
|                                   | Youth unemployment rate (15-24 years)   | Eurostat-Regional Statistics (lfst_r_lfu3pers)  |
| Migration and Population Dynamics | Crude rate of natural change  | Eurostat-Regional Statistics (tgs00099)         |
|                                   | Crude rate of net migration   | Eurostat-Regional Statistics (tgs00099)         |
|                                   | Old-age dependency ratio  | Eurostat-Regional Statistics (demo_r_pjanind2)  |
| KE role and potential             | Total intramural R&D Expenditure (GERD) as a % of GDP                                 | Eurostat-Regional Statistics (rd_e_gerdreg)     |
|                                   | Human resources (workers + inflow students) in science and technology (HRST)          | Eurostat-Regional Statistics (tgs00038)         |
|                                   | Patent applications (per million inhabitants)   | Eurostat-Regional Statistics (pat_ep_rtot)      |
|                                   | % of population aged 30-34 with a tertiary education                                  | Eurostat-Regional Statistics (edat_lfse_12)     |
| Context Indicator                 | Regional gross domestic product (PPS) per inhabitant <sup>20</sup>                    | Eurostat-Regional Statistics (tgs00005)         |

<sup>18</sup> Compared to a descriptive analysis, which does not allow an easy handling of different variables simultaneously, a cluster analysis is useful to “classify” multivariate entities in a few categories not defined a priori.

<sup>19</sup> The indicators were selected on the basis of a correlation and distribution analysis of the original variables considered (see Table 2.18 in Annex to Chapter 3 – Section 2).

<sup>20</sup> GDP presents a very high positive correlation (0.887) with the regional competitiveness index (RCI), 2013. We have considered GDP for its higher territorial coverage (282 vs. 272 regions).

The territorial unit for the identification of different typologies of regions was the NUTS-2 regions of EU28 MSs plus Norway<sup>21</sup>. In order to take into consideration the changes due to the economic and financial crisis of 2008-09 and the European debt crisis, the analysis compared the most recent period (on average the last three/four available years, typically the 2012-2015 average) with the 2004-2007 period.

Four different clusters<sup>22</sup> of regions resulted from the analysis. As shown in Table 3.2 for the post crisis period (2012-2015), these clusters presented the following characteristics<sup>23</sup>:

**Cluster 1 - Highly competitive and KE-based regions.** This cluster includes 35 regions, mostly Northern and Continental regions with large metropolitan areas (London, Paris-Île de France, Région de Bruxelles – Capitale, Berlin, etc.), or Scandinavian regions (Oslo and Stockholm). These regions show the highest average and growing values for KE indicators, as well as the best labour market and socio-economic conditions in the EU, and include the largest cities in Europe. The average employment rate for the 25-64 population reaches 78.5% (vs an average value of 71.7% for the EU28). The population in these regions is increasing, particularly due to the migrant component (+9.1 per thousand inhabitants vs. +3.3 per thousand of natural change), and the old age dependency ratio (measured as the percentage of the population over 65 years compared to the working age population) is the lowest among the clusters. These regions have registered improvements (or a very small decline) in all indicators compared to the pre-crisis period.

**Cluster 2 - Competitive and KE-related regions.** The cluster includes 54 regions, especially in Northern and Continental countries and some Northern Italian regions. These regions are similar to the regions in Cluster 1, characterised by a higher relevance of the KE than the EU average, as well as good labour market and context conditions. However, compared to the previous cluster, these regions have been more affected by the economic crisis, particularly in relation to youth labour market conditions, especially for young people. The employment rate of young people declined to 45.2% from 48.7% in 2004-2007; and the youth unemployment rate increased to 14.1% compared to 12.5% in 2005-2007. They show, on average, an increasing population due to immigration, although to a lower extent than regions in cluster 1, while natural change is fairly negative and the old-age dependency ratio is higher.

**Cluster 3 - Less competitive regions with potential in the KE.** With 110 regions, especially in Mediterranean countries and the UK, this cluster is the most numerous. These regions present values slightly worse than average for most indicators. However, compared to the pre-crisis years, they show an improvement in KE indicators (e.g. expenditure on R&D and high

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<sup>21</sup> Due to the lack of data it was not possible to classify the regions of Switzerland (no data on GDP and , Total intramural R&D Expenditure (GERD)), Iceland (no data on GDP) and Turkey (no data on GDP).

<sup>22</sup> We tested other solutions ranging from 3 to 9 groups and we also ran a preliminary hierarchical cluster. We decided to drop the solutions with more than 4 groups because they had resulted into clusters with only few regional units.

<sup>23</sup> In the following discussion we focus on the clusters in the 2012-2015 period. See Table 2.19 in Annex to Chapter 3 – Part 2 for the analysis of the 2004-2007 period.

skilled human resources). As for demographic conditions, these regions are characterised by a stable population, but a high and growing old-age dependency ratio. They are mostly regions of arrival, as 81 out of 110 register a positive crude rate of net migration.

**Cluster 4 - Less competitive regions with low incidence of KE.** This cluster includes 83 regions, largely eastern European regions and regions in the south of Spain, Portugal, Greece and Italy. The average GDP per capita in these regions reaches only 64% of the EU average. These regions also present, on average, the lowest values for the KE indicators (for example, the average number of patent applications is 8 per million of inhabitants vs. an EU average of 83) and the worst labour market and socio-economic conditions: the average employment rate (25-64 years old) is only 64.1% compared to 78.5% in cluster 1, while the employment of young people (15-24) is only 20.9% compared to over 40% in clusters 1 and 2, while the youth unemployment rate reaches 35.7%. They also have a declining population due to a negative crude rate of net migration and of natural demographic change. These regions have been severely affected by the economic crisis.

*Table 3.2 Cluster analysis results for the post-crisis period 2012 - 2015*

|   | <b>Cluster 1</b><br>Highly competitive<br>and KE-based<br>economies | <b>Cluster 2</b><br>Competitive and<br>KE-related<br>economy | <b>Cluster 3</b><br>Less competitive<br>with potential in<br>KE economy | <b>Cluster 4</b><br>Less competitive<br>economy with low<br>incidence of KE | <b>Average</b> |
|---|---|--|---|---|----------------|
| GDP at current market prices<br>(PPS in inhabitants) (€)                        | 41769   | 33204  | 24921   | 16122   | 26252          |
| NEET rate (18-24)   | 10.1  | 11.1   | 16.0  | 23.6  | 16.6           |
| Youth employment rate (15-24)   | 43.1  | 45.2   | 35.6  | 20.9  | 33.9           |
| Employment rate (25-64)   | 78.5  | 77.2   | 72.5  | 64.1  | 71.7           |
| Youth Unemployment rate (15-24)   | 14.8  | 14.1   | 24.6  | 35.7  | 24.9           |
| Unemployment rate (25+)   | 5.4   | 4.7  | 8.3   | 13.1  | 8.7            |
| Total intramural R&D Expenditure<br>(GERD) as a % of GDP                        | 3.1   | 2.0  | 1.4   | 0.7   | 1.6            |
| Human resources (in science and<br>technology (HRST, % of active<br>population) | 40.5  | 34.1   | 30.2  | 21.8  | 29.9           |
| Patent Applications (per million of<br>inhabitants)                             | 193   | 156  | 63  | 8   | 83             |
| % population 30-34 with tertiary<br>education                                   | 48.6  | 33.9   | 37.8  | 29.1  | 36.4           |
| Crude rate of net migration   | 9.1   | 6.5  | 2.8   | -1.1  | 3.2            |
| Crude rate of natural change  | 3.3   | -0.8   | -0.1  | -1.2  | 0.0            |
| Old-age dependency ratio  | 24.8  | 30.0   | 30.6  | 26.0  | 28.2           |
| <b>Number of regions</b>  | <b>35</b>   | <b>54</b>  | <b>110</b>  | <b>83</b>   | <b>282</b>     |

*Source: Own calculations on the Project database*

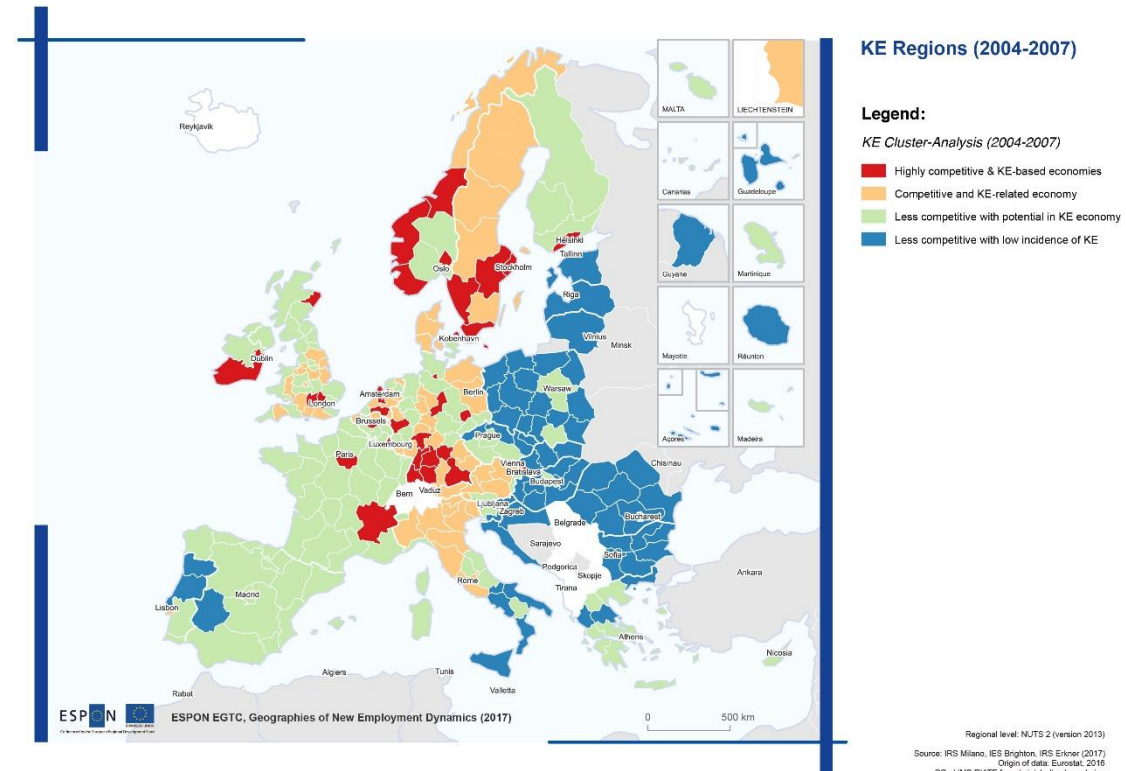
The comparison of the regional clusters in the pre-crisis (2004-2007) and the post-crisis (2012-2015) periods, illustrated in Maps 3.7 and 3.8, shows some change in the regional positions:



- 41 regions (particularly in Mediterranean countries and the United Kingdom) have worsened their position, moving either from cluster 2 to cluster 3 (18 regions), or from cluster 3 to cluster 4 (23 regions).
- Other 15 regions, mostly in Germany, instead improved their position, moving from cluster 3 to cluster 2.

The most competitive regions of cluster 1 maintained their position, except for 8 regions that moved to cluster 2<sup>24</sup>, while there is no change among the least developed regions of cluster 4, thus showing the importance of path dependency among the least competitive regions.

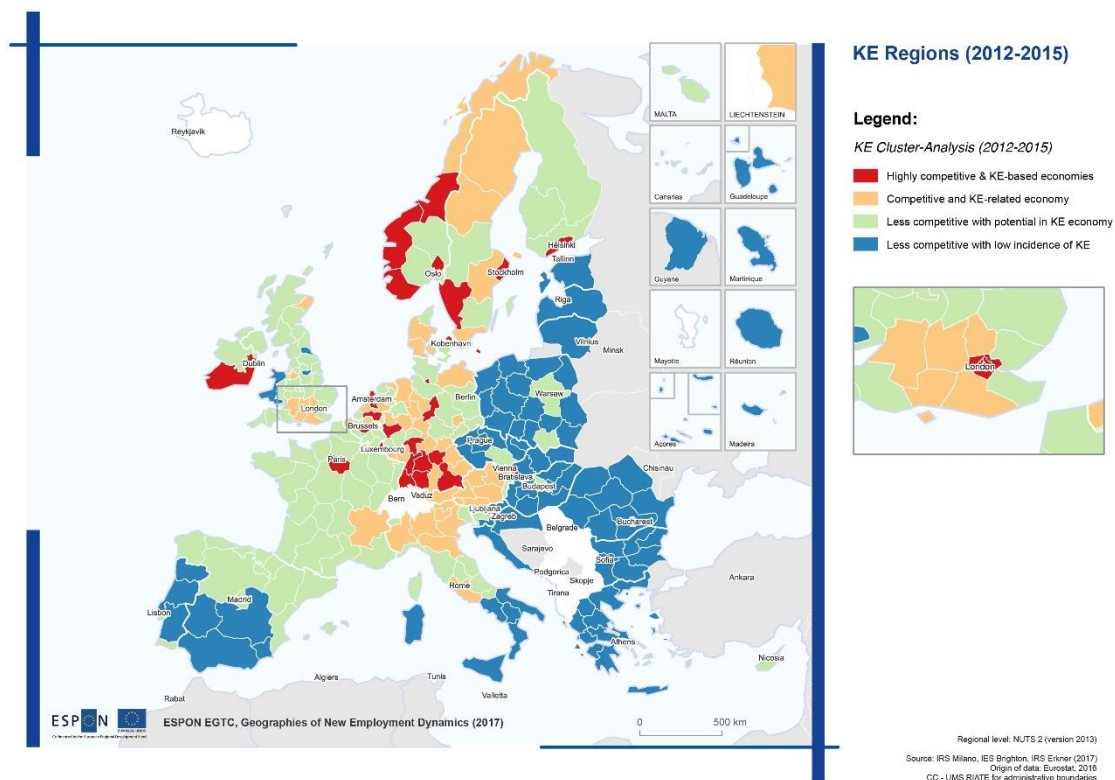
*Map 3.7: Cluster Analysis – Regional classification according to labour market conditions, KE potential, population and migration dynamics, and context indicators 2004-2007*



<sup>24</sup> NL23-Flevoland, FR71-Rhone-Alpes, SE12Ostra Mellansverige, SE22- Sydsverige, DED5-Leipzig, UKH2 -Bedfordshire and Hertfordshire, UKJ1 -Berkshire, Buckinghamshire and Oxfordshire, UKM5 - North Eastern Scotland.



Map 3.8: Cluster Analysis – Regional classification according to labour market conditions, KE potential, population and migration dynamics, and context indicators 2012-2015





## **4 Expected future developments of KE employment dynamics: a qualitative scenario analysis**

In order to derive the likely scenarios on the evolution of the KE, of employment patterns and migration flows within and between countries/regions, and socio-spatial disparities within Europe over the next 10 to 15 years, i.e. from 2017 to 2017-2032, we carried out a qualitative scenario analysis based on a wide literature review (over 110 studies), the evidence resulting from the quantitative analysis reported in Chapter 3, and interviews with eight country experts (DE, DK, EE, IT, NL, NO, PL, UK) involved in a quasi-Delphi process<sup>25</sup>.

### **4.1 The background story**

The following section details the 'background story' i.e. broad trends affecting the supply and demand of highly-skilled youth migration across Europe taken as given for the next 10-15 years. They are the backdrop for all four scenarios. It uses the evidence resulting from the quantitative analysis presented in Chapter 3, country-level expert interviews and rapid evidence assessment (REA) of academic and grey literature conducted as part of the scenario building exercise (see Annex to Chapter 4).

According to both existing evidence and expert views, by 2025 nearly half of new and replacement EU vacancies will be for highly-qualified workers. However, there will be clear differences in employment dynamics at national, regional and territorial levels. East-West economic disparities which emerged after the 2004 enlargement will persist. Differences in euro area youth (un)employment rates will continue. As a result, income differentials between sending and receiving regions will remain the primary driver of economic migration. Young people will continue to move for fulfilling work and wage gains.

Affluent regions will be net migration beneficiaries over peripheral regions, so migration will increase regional disparities. Despite some economic convergence, the East to West migration trend will continue, albeit at a slower pace, reinforcing regional imbalances.

The educational attainment will continue to rise as more young people progress to further and higher education, supported by policies emphasising upskilling and reduction in under-achievement. As a result, the gap in levels of education between EU-15 and EU-13 movers will narrow and the overall supply of highly-skilled young people will rise in relative and absolute terms. Nevertheless, some mismatch between skills and jobs is likely to persist, not least because of the relatively poor performance of the education and training systems in many EU countries.

Young female migrants will continue to move more than men, leading to low fertility rates in sending regions which, in the long-term, may damage these regions' resilience to meet labour

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<sup>25</sup>The country experts were selected on the basis of their country-specific expertise in labour market dynamics, skills development and youth mobility and migration. For a description of the methodology, the country experts involved and a detailed analysis see Annex the Chapter 4.

market needs and demographic challenges. Despite policy intervention to improve representation, there will be persistent gendered disparities in sectors and occupations which currently have imbalanced gender profiles.

The European population will shrink and age, affecting the dependency ratio. Workforce growth will be far behind the previous decade. The labour forces of some Eastern, Southern and Central European regions will significantly decline as precious demographic balances combine with high out-migration. Certain sectors will be particularly exposed (e.g. STEM, finance) and young people will increasingly work and care for older generations.

Highly-skilled young migrants will continue to move from rural to urban districts, rapidly and massively expanding metropolitan areas. Spatial hierarchies dominated by the power of large metropolitan areas are more pronounced in the EU-13 and are likely to remain so.

Urban centres will house emergent technological hubs with high demand for highly-skilled hires. The increasing prominence and innovation in ICTs, green technologies, job complexity and knowledge intensity in work will continue in the short to medium term. The so-called 'fourth' industrial revolution (i.e. automation, robotics, artificial intelligence, the Internet of Things) is likely to have major and long-lasting effects on the future structure of employment in general and work organisation (and associated tasks) in particular. Although the shift has previously been faster in EU-15 than in EU-13, this gap will continue – as it is currently – to narrow.

However, employers will find it challenging to recruit these specialisms from their local working age population. Regions where unskilled labour is relatively abundant are likely to be disproportionately affected by skill-biased technological change. Although income and productivity in the EU-13 is slowly catching up with the EU-15, a wide gap will persist in technology, knowledge-intensity, and innovation. Differences between NUTS-2 will, in part, be driven by regional disparities in adoption of new technologies.

Established family hubs, professional networks and diaspora will still attract new movers trying to select a destination because they support acclimatisation, job-seeking and socialising. Unevenness of European language proficiency will remain, biased languages are taught in school, language 'attractiveness' for adult learners and their relative perceived difficulties. As a result, Western and Central European languages will continue to proliferate at a greater rate than Eastern or Nordic languages. Lastly, the 'cultural vitality' of regions influences the choices of young highly-skilled migrants who invariably choose to move to somewhere with greater access to social activities, a vibrant nightlife and diverse cultural scene.

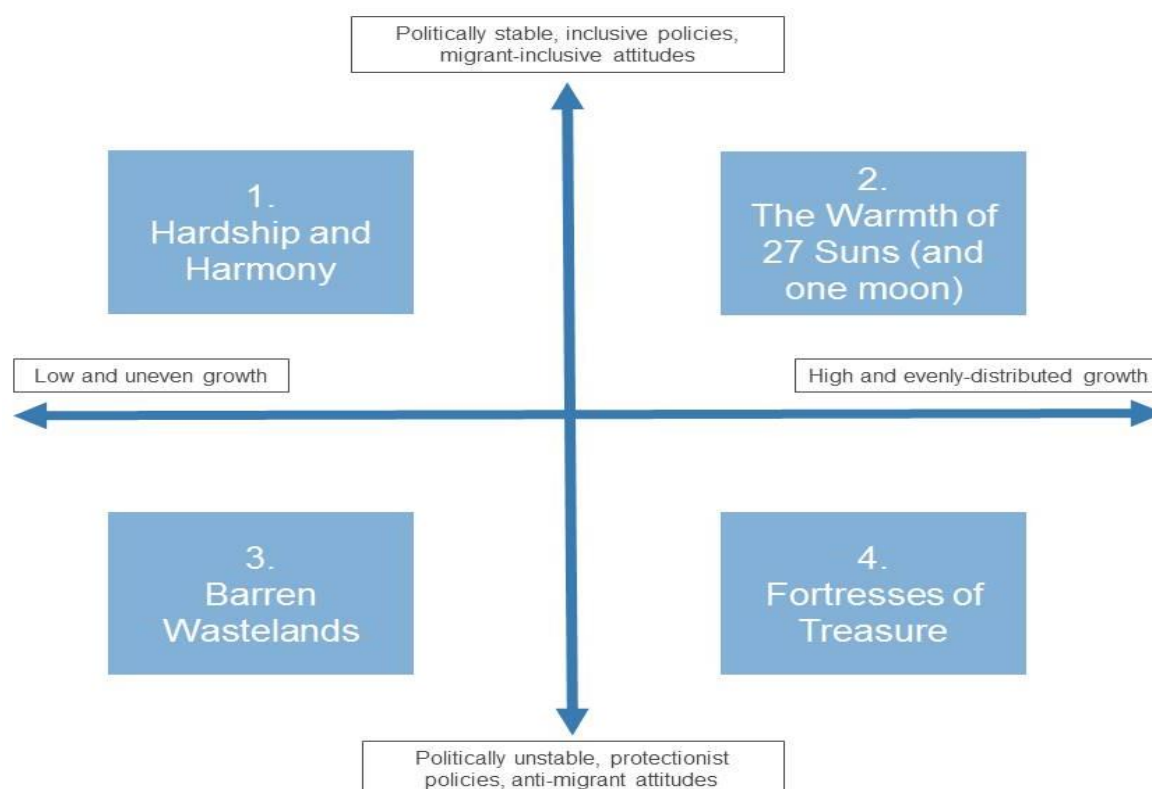
Finally, there is currently a high degree of uncertainty surround Brexit, including whether the result of the UK-EU negotiations will be a 'soft' or 'hard' form of Brexit. The implications of heavily-curtailed movement of labour is likely to have a substantial adverse impact on all regions of the UK, but it will be particularly negative for London (as a leading KE, high-tech and financial services hub) and the UK's science and innovation industries. The impact on the EU of Brexit is likely to be relatively less pronounced.

Based on this background story, the two factors identified by both the experts and the analysis as the most critical were:

- a. The continuing impact of the Global Financial Crisis on lagging regions; and
- b. Political stability and social attitudes towards migrants.

These two factors were then used to create four scenarios illustrated in figure 4.1 below.

Figure 4.1: Scenario Matrix



Source: IES elaboration - Derived from expert consultation

#### 4.2 The Barren Wastelands scenario: low and/or uneven growth, unstable political regimes and anti-migrant attitudes;

This scenario assumes that European countries/regions experience poor economic performance as a result of the continuing impact of the economic and financial crisis of 2008-09 and ensuing Eurozone crisis. GDP growth is sluggish and highly uneven, job creation stalls and investment in skills is greatly reduced. National and regional populations experience intense economic inequality and wealth polarisation. The scarce job opportunities that exist are concentrated in wealthy metropolitan centres and regions which have historically attracted human capital. Although weak economic performance is widespread, it is much more severe in poorer regions. In particular, economically 'weaker' regions exhibit high unemployment coupled with low labour force participation and labour demand. However, regional CP interventions mitigate intensifying disparities far beyond 2017 levels.

Political instability, protectionism and isolationism abounds, meaning that policies and legislation are characterised by ad-hoc, knee-jerk reactions, driven more by populist (most likely, anti-migrant) sentiment. Anti-migrant attitudes harden as migrants are blamed for strains to public services, housing shortage, labour market competition and depressed wages. Persistent unemployment, discrimination and poverty are linked to wider social unrest where minority and migrant groups are typical targets. Where possible, countries pursue protectionist policies for their domestic labour force and actively restrict immigration, leaving employers short of the required labour and skills, less competitive and, in some cases, seeking to re-locate. A lack of political leadership and growing inequalities have created a political climate detrimental to the free movement of labour within the EU, with restrictions to mobility and greater immigration and border control. Stricter limits are placed on access to welfare for EU citizens living and working in other MSs. Common rules for labour mobility and access to regulated professions across the EU-27 are harder to agree, meaning that free movement of workers and services is not fully guaranteed.

International experience and qualifications are devalued in favour of recruitment from the local labour market. However, with little investment in skills, employers in KE sectors find it hard to locate the right people domestically. Demand for highly skilled young people persists at a restricted, skills-based level. Key sectors of the economy decline as global competition for highly skilled workers, coupled with the political climate, means skilled, young people are less willing to move to places where they feel unwelcome and unable to carve out a long-term future.

#### **4.2.1 Overall likelihood of the scenario**

Most country experts (all except IT) thought the '*Barren Wastelands*' scenario was very unlikely because a deep, systematic and pervasive recession is improbable. Likelihood was lowest in relatively successful, post-recession buoyant Western and Northern regions. The scenario was deemed more relevant for Mediterranean regions (e.g. Italy) and EU peripheries (e.g. Balkan states). Experts, therefore, inferred that the likely outcome of this scenario would be the intensification of a 'two-speed' Europe: wealthy cities, regions and countries pitted against quasi-wastelands comprising regions most affected by the economic and financial crisis of 2008-09, with poorer prospects and high debt.

The political turbulence suggested by the scenario was also questioned, particularly in affluent regions with high living standards, where the public and political will for systemic change is lower. Experts also commented that the right-wing, anti-migrant rhetoric prevalent in 2016 and early 2017 had not translated into recent electoral success. Instead, it remained in pockets which experience particularly intense inequality compared to neighbouring regions (e.g. rural Netherlands, northern UK). Experts, therefore, believed that xenophobia and populism would not be reflected in national and supra-national policies that would affect the supply and demand of highly-skilled young migrants. The exception would be if other MSs decided to leave the EU and, therefore, further reduce free movement of labour.

### 4.2.2 Drivers leading to its emergence

Country experts emphasised that the '*Barren Wastelands*' scenario would need to be preceded by a strong, sustained and all-encompassing economic collapse in core countries, not just in EU peripheries and lagging regions. A complete political impasse would need to emerge, leading to a complete loss of faith in the European project.

Anti-migrant rhetoric would need to strengthen and gain wide acceptance, convincing both right- and left-wing voters that hard borders would bring about economic prosperity. This would, necessarily, include those who traditionally embrace or, at least, tolerate migration. Discourses would need to effectively capitalise on large, extant public fears (e.g. terrorism, job losses, threat to cultural identity) to achieve such a major shift in public attitudes not only towards migration, but also the EU itself.

### 4.2.3 Implications

Country experts anticipated a high degree of highly-skilled youth labour mobility and far greater job competition. Demand for high skilled work would most likely be lower under this scenario due to shifting public attitudes, but still present. Only in the most extreme cases will unemployment of highly-skilled young people increase at a significant level across the EU. Differences between countries and difficulties in finding work and being welcomed in core EU regions could drive young highly-skilled migrants towards relatively small, well-functioning economies like the Netherlands, Norway, Switzerland and Austria as well as larger economies such as Germany

Traditional migratory routes (e.g. Spain to Germany, Estonia to Finland) would most probably re-emerge in cases where receiving countries retain sufficient job opportunities. There would also likely be greater movement from lagging regions (e.g. in Italy and Estonia) to third countries such as the U.S. or Australia. Historical regional dynamics would persist, e.g. the South East of the UK performing better than other regions. Although the UK would be somewhat isolated from the EU post-Brexit, an EU-wide collapse would still damage the UK labour market and skills system. Young EU migrants with in-demand skills from better-performing regions may still be selective in their decisions, and look for destinations where they would feel welcomed and have the quality of work and life they want. For example, young highly-skilled Spanish or Italian migrants may look to France or Germany as an alternative to a post-Brexit Britain.

Restrictive policies would focus on lower-skilled migration where there is more competition with domestic workers. By dint of age, skills and flexibility, highly-skilled young migrants were expected to fare relatively well. Particularly acute anti-migrant attitudes could lead to an increase of under-employment of movers in lower skilled roles – in a way, continuing the current trend, especially among EU-13 movers. However, skills atrophy is unlikely to be as potent for the young highly-skilled, as they are less vulnerable to labour market fluctuations, are deemed essential for the KE and tend to migrate individually so do not attract the same stereotypes as clusters of lower skilled workers (e.g. Polish migrants in Norwegian refineries).

### 4.3 The Hardship and Harmony scenario: low and/or uneven growth but relative political stability and public and policy support of migration

This scenario assumes that European countries/regions experience low or no economic growth as a result of the continuing impact of the economic and financial crisis of 2008-09 and Eurozone crisis. There is weak job creation, and little or no GDP growth or investment in skills. Lagging regions especially struggle to foster economic prosperity. As a result, migratory flows are pulled towards urban centres which provide the majority of employment opportunities. However, free movement of people is enshrined as a key driver of future growth and prosperity. Political leaders promote it as a way to kick-start productivity, innovation and growth, address intra-EU skill and job mismatch and maintain public services. There is political stability in MSs, driven by strong leadership and robust economic plans to promote growth, in part, through full labour mobility.

There is neither the political ability nor public appetite to restrict migration. Public confidence in governments' ability to manage migration is high and the economic net contribution of migrants is clear, particularly in the context of the demands of the EU's ongoing demographic ageing and growing older population. Particular emphasis is also placed on the contribution of highly-skilled migrants to national economies, innovation and KE sectors such as high tech sectors (e.g. computers, electronics and aerospace) and knowledge-intensive service sectors, (e.g. education, culture, health).

Highly-skilled migrants, with sought-after expertise, are able to locate work in emergent KE sectors which face specific skills shortages. There is persistent demand in labour-intensive and/or specialised sectors such as health and social care as well as IT. However, migration patterns are uneven, mirroring existing spatial disparities and economic inequalities within (and between) MSs and regions. Spatial disparities are exacerbated, and worse-performing regions suffer from significant levels of brain drain.

#### 4.3.1 Overall likelihood of the scenario

Experts generally considered the '*Hardship and Harmony*' scenario to be a plausible outcome in a number of countries (i.e. EE, DE, DK, NL, NO). The EU is currently on a similar slow but steady growth trend, and freedom of movement is enshrined within the EU constitution. Most experts explained that there would need to be a complete and fundamental shift in ideology and governance for this principle to be diluted.

Some country experts contested certain elements of the scenario, on the basis of distinct country-specific circumstances. For example, the 'hardship' element was more plausible than the 'harmony' for Italy, where populist sentiment is growing. Some experts expected there would be regional variation, in that this scenario was more likely to occur in Northern and Western Europe than Eastern Europe.

Overall, experts agreed with the possibility of low or no economic development, given that this is a trend that can currently be observed in many parts of Europe. This was generally



understood as slow but, ultimately, economically and politically acceptable trajectory. Experts tended to believe low or no growth was probable as maintaining high levels of growth is difficult to sustain in the long run. In these cases, experts viewed slow and steady growth as positive and did not associate this with stagnation. On the other hand, the UK expert felt that it was '*implausible*' to suggest that there would be an economic slump, despite some countries lagging behind.

Within the context of Italy, and more widely throughout the Mediterranean countries, several of the '*Hardship and Harmony*' scenario's elements were considered likely, such as sluggish growth, weak job creation and little or no investment in skills. Whilst there are signs of recovery throughout Southern Europe and indicators to suggest that this growth will speed up, there is concern over the extent to which this growth is dependent on Italy's levels of deficit spending.

There was some divergence in opinion with regard to political stability within the '*Hardship and Harmony*' scenario. Many felt that the '*Harmony*' aspect was realistic, given that freedom of movement is an essential aspect of the EU. Whilst poor economic development is often associated with political instability, some experts believed that economic stagnation is not necessarily a precursor for political instability, hence the '*Hardship and Harmony*' scenario may be plausible. Moreover, others felt that political instability and anti-migrant sentiment is not as prominent as we are led to believe by the media and right-wing political discourse.

Perceptions of political instability differed between Southern and Eastern Europe versus Northern and Western Europe. Populist sentiment was viewed as strong within certain countries (e.g. Italy, Estonia), hence the '*Harmony*' aspect was highly unlikely to occur in these. On the other hand, anti-migrant attitudes are strong and may persist at some level in countries like e.g. Netherlands, Norway; but political leaders are unlikely to use them as a reason to close borders.

#### **4.3.2 Drivers leading to its emergence**

Country experts emphasised that harmonious intra-EU relations and pro-migrant attitudes would require a form of low or no growth that was steady and stable, with a positive outlook and a low risk of economic contraction or recession. Generally, experts believed that much of Europe is already on this path, both in terms of muted economic recovery and growth, as well as public appetite for migration and an awareness of its benefits.

Much uncertainty remains regarding the UK's relationship with the EU post-Brexit, although it was expected that a beneficial trade and labour deal will, in the end, be obtained, which would be a necessary factor in driving the '*Hardship and Harmony*' scenario. With regard to freedom of movement in general and with regard to the UK in particular, good understanding and good regulations will be needed for the 'harmony' scenario to occur.

#### **4.3.3 Implications**

Generally, experts believed that the '*Hardship and Harmony*' scenario had positive implications, for both their countries and high-skilled young people in the EU. Depending on the extent to which growth is sluggish, employment may fall; however, experts tended to agree that this

would have a limited impact on high-skilled individuals, who will still be able to find work by being mobile. Even during times of recession, there is often still a high demand for skilled workers and young people, in particular, are less inhibited in terms of willingness to move in order to find work.

#### **4.4 The Fortresses of Treasure scenario: high and/or even growth, high degree of political instability and distrust and vilification of migrants.**

This scenario assumes that, on aggregate, European countries and regions have positive job and GDP growth as nations move away from recession. There are some welcome but vulnerable signs of emergent growth in some historically underperforming regions, in part driven by large organisations regaining confidence to invest outside traditional urban centres. However, growth is mainly present in traditional, wealthier centres. Economic recovery is fragile and very patchy. National governments come under persistent pressure to focus on prioritising benefits for their own citizens and addressing existing inequalities and spatial disparities. Freedom of movement of workers is seen as a threat to economic growth by those living outside wealthy and prosperous hubs. Economic arguments stressing the benefits of migration have failed to convince those who continue to experience poverty, disadvantage and poor education levels. Political instability in regions and peripheries is driven by hardened, populist sentiment which has convincingly cast migrants as the root cause of economic hardship and growing inequality in a globalised economy. As a result, countries come under pressure to harness emergent growth and jobs to the benefit of the domestic labour force and control borders.

Governments capitalise on the growth in key KE sectors, but restrict access to and recruitment in their labour markets as well as training provision and funding to the domestic workforce to improve employment prospects for 'natives'. With a persistent discourse around tighter immigration control, employers are provided with government-funded incentives to invest in skills. Regional authorities are encouraged to invest in regeneration in order to attract domestic workers to lagging regions.

Life for potential young migrants is relatively comfortable at home and there is less desire to move to a hostile environment (in other regions and/or abroad) where their contribution is not valued. Although international opportunities may still present themselves, some lagging regions in Europe are better able to retain their highly-skilled youth in a context of lower labour mobility. As a result, socio-spatial variance is reduced to some extent and traditionally 'sending' regions are better able to capitalise on the skills of their domestic workforce.

##### **4.4.1 Overall likelihood of the scenario**

Country experts suggested that economic elements of the *'Fortresses of Treasure'* scenario are plausible. Current projections suggest uneven growth in the EU is likely to continue, with some quite pronounced disparities. However, the level of migration restriction in this scenario would be transitory and unstable as growth would not withstand high levels of isolationism and protectionism.

An unequal and asymmetrical picture is likely to manifest at both the territorial and organisational level. Core regions, metropolitan centres and large firms will probably hold the majority of job opportunities, which could lead to political instability in EU peripheries and rural regions. Disparity may persist between clusters of European regions (e.g. Estonia in the Baltics compared to other countries in the Balkans).

Attitudes towards migrants could harden, mostly in disaffected areas excluded from growth in neighbouring regions, large cities or within large employers. Locations with historically anti-migrant attitudes are likely to retain these attitudes. However, movement of highly-skilled young migrants would not be curtailed in terms of harder internal EU borders. The principle of free movement of labour would stay unshakable amongst remaining MSs, particularly for high-skilled movers. Emergent growth would mean regions need to attract greater numbers of highly-skilled migrants to meet KE demands, capitalise on economic opportunities and tackle unevenness of growth.

#### **4.4.2 Drivers leading to its emergence**

Country experts highlighted that the *'Fortresses of Treasure'* scenario would require some (somewhat uncertain) growth in the international economy and relative stability at the national level across most EU MSs. Capital cities in Western and Northern countries and other large metropolitan centres would need to continue to grow and prosper. Conversely, outside these centres, unevenness would need to persist due to persistent failures to solve the structural problems of lagging regions over the preceding years. The UK position is unclear, depending on whether migration mechanisms post-Brexit are low-friction or heavily-regulated and restrictive.

Without good social protection and economic redistribution, resentment would build. Disaffected communities may develop mistrust in trickle-down economics and begrudge the observable wealth 'fenced off' from them. Resentment could let populism and anti-migrant attitudes take hold among large segments of the native population – especially those with no or low skills and at greater risk of exclusion. Anti-migrant attitudes would need to be at such a level that young movers would decide against settling in certain destinations due to a hostile environment.

#### **4.4.3 Implications**

Most country experts felt that the mobility of highly-skilled young migrants would decrease under this scenario. Many employers would experience (severe) difficulties in finding the skills they need, and skills mismatch may intensify, with the UK at particular risk. Highly-skilled young migrants are more likely to move to a small selection of wealthy hubs, or remain in sending regions to make the most of job opportunities there, rather than moving to traditional sending regions other than their country of origin. Traditionally sending regions (e.g. Italy, Eastern Europe) will have fewer job opportunities than receiving regions. However, some traditional flows will continue, although out-migration may be lower. Under this scenario, even isolated recovery may improve domestic demand: more opportunities at 'home' diminish the power of

economic push factors. However, lower mobility could lead to relative 'deskilling' and skills obsolescence of the highly-skilled as sending regions may be less able to utilise skills they have retained.

Large (transnational) organisations based in prosperous and protected metropolitan centres (e.g. Amsterdam, Berlin) would be particularly attractive to young highly-skilled migrants moving for work, given the cultural vibrancy of the surroundings and opportunities for career progression (as well as relatively higher wages). As migration would be focussed on a small pool of familiar destinations, housing and other living costs would rise, pushing the domestic labour force out to peripheries.

Any immigration policy intervention – aside from the unknown quantity of the UK post-Brexit – is unlikely to affect highly-skilled young EU migrants. Instead, wider attitudes may dent confidence to move. Anti-migrant sentiments would primarily be directed towards lower-skilled movers. However, this would still, to some degree, affect the attitudes and motivation of higher-skilled movers when thinking about where they want to work and live. With rising growth in the international economy – i.e. opportunities in the United States, Canada, Australasia – there may be competition with other countries (and continents) where young migrants feel they will be less exposed to anti-migrant attitudes.

#### **4.5 The Warmth of 27 Suns (and one Moon) scenario: high and/or even growth with good political stability and welcoming, positive and inclusive attitudes towards migrants.**

This scenario assumes that Europe collectively experiences intensive and inclusive growth and job creation, achieved and supported through the greater integration and inclusion of nationally diverse workforces. A political consensus is reached across countries/regions around free movement of labour, inclusive migration policies, greater co-operation and pervasive collaboration. The one exception may be the UK whose fortunes are dependent on the actual form ('hard' or 'soft') of any eventual Brexit deal. Greater growth has spurred significant technological and social innovations which, in turn, expand the need for highly-skilled young migrants in an ever-diversifying and specialised range of occupations. European economic hubs and clusters have become more adaptive and are able to create more jobs.

Growth has become much more even, as lagging regions begin to catch up with wealthier regions, although some disparities still exist. There is more disposable income, meaning that individuals and employers have more resources to invest in human capital development commensurate with the needs of the KE in the form of higher degrees, higher vocational qualifications and greater levels of continuing professional development. As a result, young highly-skilled migrants have more developed and specialised skills to meet the needs of the European labour market – which is servicing an EU economy which is increasingly moving towards innovative, high value added activities, products and services. This reflects the EU's on-going and long-term structural change towards a knowledge based-economy which is inexorably linked to a growing demand for high-skilled labour. Unrestricted labour mobility and

an expanding EU-wide talent pool allows employers to have greater success in filling hard-to-fill vacancies, while economic growth supports greater efforts to utilise the skills of both EU and third country nationals.

The native labour force working in KE sectors and beyond is more used to collaborating in diverse teams. There is greater mutual trust and appreciation for the young migrant workforce as they reflect diverse customer bases and encourage innovation and creativity. Smart specialisation leads to the creation of new regional hubs, new diasporas emerge, and traditional migratory patterns operate alongside migration flows in new, non-traditional directions. Migration flows remain high, but a commitment to workers' rights and the economic inclusion of all communities ensures that economic growth benefits society at large in a more even-handed way, including reducing regional disparities.

#### **4.5.1 Overall likelihood of the scenario**

Country experts agreed the *'The Warmth of 27 Suns (and one moon)'* scenario was a common goal, but improbable as the speed and magnitude of growth is unlikely to be identical amongst all MSs. The emergence of this scenario is also more likely to be slow and steady, not rapid. Presence of this scenario is most likely in clusters of more prosperous MSs which typically collaborate closely (e.g. 'core' regions, Scandinavian states). In these regions, certain dimensions of the scenario are very plausible such as higher disposable income, greater higher education participation and investment. Positive growth and skills investment of this nature may also emerge in some individual peripheral regions and countries (e.g. Estonia). Conversely, countries which have been through economic restructuring and are currently struggling economically are unlikely to experience the same level of intensive growth (e.g. Italy, Greece, Portugal). The position of the UK in this spectrum is unclear. The UK economy is expected to take a hit post-Brexit, although views about its severity, depth, extent and duration vary. Moreover, Brexit and its implications for free movement of labour is likely to have a substantial adverse impact on London and its future as a leading KE, high-tech and financial services hub and a prime destination of highly qualified EU migrants.

Country experts agreed that freedom of movement of labour within the EU will continue – Brexit notwithstanding. The only event that may lead to a major shift in labour mobility would be the exit of other MSs from the EU, although results from recent elections undermine the likelihood of this outcome. The UK's access to EU workers is far more unclear and will considerably and adversely affect its prospects. By and large, country experts did not expect the impact of Brexit to be particularly negative on the EU, regardless of the outcome of deal negotiations.

#### **4.5.2 Drivers leading to its emergence**

The inclusive growth scenario suggested by *'The Warmth of 27 Suns (and one Moon)'* would require substantive political will for the forging of a stronger European Union. This would need to take place not just at the EU level, but also across the various smaller coalitions of European integration (e.g. Benelux, Scandinavia) and in peripheral regions (e.g. Estonia). The current wave of populism (combined, in many cases, with anti-EU rhetoric) would need to recede.

Election results would need to establish opportunities for progressive policy-making. Crucially, this would need to exist not just in larger dominant economies such as France and Germany, but in other large and medium EU economies (e.g. Poland) which are, at present, more politically suspicious of a greater and/or more closely integrated union. There would also need to be clear signs of growth in productivity, GDP and wages over the short- and medium-term, i.e. the next three to five years, to inspire the level of consumer and investor confidence which would support the momentum of positive economic change.

Employment policy would need to be effective. There would need to be large social investment in education, research and technology and highly structured skills policies – which would currently be a challenging task for some regions with high debt, budgetary constraints and insufficient resources to invest in skills development (and/or R&D). The scenario would also need to be preceded by low unemployment rates across Europe, therefore requiring effective policies for integrating people into the labour market. This could also be particularly critical in reducing anti-migrant attitudes – a critical precondition for the emergence of this scenario.

#### **4.5.3 Implications**

Generally, under the *'The Warmth of 27 Suns (and one Moon)'* scenario, country experts anticipated very high levels of labour mobility amongst highly-skilled young Europeans, predominantly within the EU. Young movers would be able to make the most of smoother migration journeys, pervasive migrant-friendly attitudes and a fuller range of employment and career development opportunities. However, migrant workers are less likely to unionise, so higher youth labour mobility may pose risks for workers' rights and collective representation.

Because growth would be differentiated, there would be clearer benefits for better-off regions (e.g. in Denmark, Germany and the Netherlands) which can also offer better wage and career prospects. Lagging and peripheral regions may suffer. With greater choice and options for young people under this scenario, Norway may find it much harder to recruit the skills it needs due to barriers such as geography, weather, language, a compressed wage structure, lower wage progression and a high cost of living. Similarly, Estonia may lose its highly-skilled young people to Northern European countries which can offer higher wages, particularly Finland. As a result, these countries would be unable to grow so fast either because they cannot attract a sufficient number of highly-skilled young people (Norway) or they suffer significant brain drain (Estonia).

However, a clear upward growth trend within Eastern and Southern European countries (creating a smaller wage gap between these regions and wealthier ones, driven by more highly-skilled vacancies) may mean young people from these countries choose not to move, allowing such regions to capitalise on their national investment in skills.

## 4.6 Summing up

All scenarios seem to be in line with some of the main trends highlighted by the quantitative analysis in Chapter 3, although the implications vary between the different scenarios. For example, highly skilled young people will continue to be highly mobile and move from less prosperous and (under)developed regions to more affluent areas characterised by better employment and career opportunities as well as higher wages together with higher standards of living and where the KE is more developed. However, how free they will be to do so will vary under each scenario which has different implications for the EU's much-vaunted freedom of movement. That said, country experts argued that any restrictive policies that may be adopted under certain scenarios such as the 'Barren Wastelands' scenario would focus on lower-skilled migrants who tend to compete with domestic workers and are unlikely to have a major impact on the intra-EU mobility of the highly skilled.

Both the scenario analysis presented here and the quantitative analysis in Chapter 3 also point to the importance of growing regional socio-economic disparities as a major contributing factor to greater intra-EU youth migration. The economic and financial crisis of 2008-09 and associated Eurozone crisis have exacerbated these disparities, with dramatically increased youth unemployment levels being a major push factor for highly skilled young migrants. For example, as both analyses show, following the 2004 enlargement, there have been high migration outflows from Eastern to Western Europe which, from 2008-09 onwards, have also been complemented with high migration outflows from Southern to Northern Europe as well. Significantly, in contrast to previous recessions, the recent crisis hit highly skilled young people (graduates) as well, resulting in increased graduate mobility across the EU.<sup>26</sup>

The future implications for the increased East to West/South to North migration of highly skilled young people observed in recent years vary depending on the specific scenario. For example, under the *'The Warmth of 27 Suns (and one Moon)'* scenario of inclusive but differentiated growth, country experts anticipated very high levels of labour mobility amongst highly-skilled young Europeans. In contrast, under the *'Fortresses of Treasure'* scenario, the mobility of highly-skilled young migrants would decrease to some degree, while the *'Hardship and Harmony'* scenario – associated with sluggish growth – would, according to the experts, have a limited impact on the mobility of highly skilled young people.

Speaking of the latter, a major policy development that, under all scenarios, will affect such mobility is Brexit, the implications of which are briefly discussed in Box 4.1 below.

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<sup>26</sup> European Commission, (2014g). *EU Employment and Social Situation in Europe - Quarterly Review (ESSQR) - June 2014, with Supplement on: Recent Trends in the Geographical Mobility of Workers in the EU*, Available at: <http://ec.europa.eu/social/main.jsp?catId=89&langId=en&newsId=2087&furtherNews=yes>

*Box 4.1: Brexit Implications for future scenarios*

Significantly, Brexit looms large – albeit with different implications and depending whether the final deal will be for a ‘soft’ or ‘hard’ form of Brexit – under each scenario. However, whatever the final deal, there is widespread agreement that London will be particularly badly hit (together with the UK as whole). In contrast, the rest of the EU is likely to be less adversely affected. Indeed, this is also highlighted by the London case study results presented in Chapter 6, which show that Brexit and its implications for the free movement of labour is likely to have a substantial adverse impact on London and its future as a leading knowledge economy, high-tech and financial services hub and a prime destination of highly qualified EU migrants. Indeed, there are already signs of talent flight among EU nationals living and working in the UK in general, and London in particular.

At the same time, a number of sectors which employ both highly and low-skilled workers (as well as medium-skilled ones) are expected to suffer pronounced skills and labour shortages due to Brexit. Again, the UK (and London) is already experiencing increased skills and labour shortages in a number of sectors – both low and highly skilled ones – due to a fall in the number of EU nationals who either choose not to come to work here or have already left (or plan to leave). As a recent survey found, 47% of highly skilled EU workers were considering leaving the UK in the next five years.<sup>27</sup> The future of the City of London as one of the world’s leading financial centres is also uncertain and likely to be jeopardised, especially if the Brexit deal does not guarantee ‘passporting rights’ and free or easy access to EU (and global) talent.

As mentioned earlier, the fact that Brexit will reduce the attractiveness of London (and the UK) as a key destination country for highly skilled migrants, including young highly skilled migrants features in all four scenarios, albeit with different implications. However, under all scenarios, it is assumed that highly skilled young migrants may choose countries such as France or Germany as an alternative to a post-Brexit Britain. That said, as the Berlin case study has also highlighted, the attractiveness of that city may be reduced in view of its rising housing costs. Moreover, with one of the main destination countries not in the EU and with the EU-27 growing at a faster rate than the UK, highly skilled young people may have more job opportunities in their country of origin (and regions). This may be facilitated by the significant levels of EU funding channelled to less prosperous regions for both basic and research infrastructures that can support the development of KE, as the case studies on the North-East Romanian Region, Malopolska and Abruzzo highlight (see Chapter 6).

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<sup>27</sup> Deloitte (2017) *Power Up – The UK Workforce*. June. Available at: <https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/international-markets/deloitte-uk-power-up.pdf>



## 5 How national and regional policy approaches are addressing the KE and new employment dynamics

The geography of post-crisis employment dynamics and the unbalanced spatial distribution of the KE and job opportunities are having significant territorial impacts and important implications for employment and local development strategies. In particular, the above mentioned spatial features of the KE and (skilled) labour mobility can accentuate territorial polarisation of growth and widen both regional disparities and territorial imbalances between regions and within regions, between urban and rural areas.

In order to address these challenges, Cohesion Policy and national/regional employment strategies are increasingly focussed on supporting the KE (with a focus on R&D&I, and ICT/digital development), skill upgrading, and labour mobility (with emphasis on attracting a highly skilled workforce).

At the European level, a **Research and Innovation Strategy for Smart Specialisation (RIS3)** is currently a prerequisite in order to receive funding from the European Regional Development Fund (ERDF). Specific support, provided by the European Joint Research Centre, has also been envisaged for selected lagging regions in their RIS3 implementation<sup>28</sup> in order to foster collaboration among all relevant stakeholders in the local knowledge communities in business, academia, research organisations and civil society. This collaboration addresses broader structural problems (e.g. in governance, transnational cooperation, research development and innovation, education, and the business environment) that hinder the RIS3 process.

The review of the 2016 National Reform Programmes (NRPs)<sup>29</sup> and the ESIF's Partnership Agreements and Operational Programmes for the 2014-2020 programming period<sup>30</sup>, as well as of the regional strategies adopted in the six case studies presented in Chapter 6 below, shows that all MSs have defined comprehensive plans of actions for the implementation of national and regional Smart Specialisation Strategies (SSS) based on the consolidation of existing sectoral strengths through investment in key 'enabling technologies', as well as on supporting new innovative industries or activities in collaboration with companies, universities and

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<sup>28</sup> Two types of regions are targeted by this activity: a) low-growth regions: regions of Member States that have a GDP per capita in purchasing power standards (PPS) below the EU average in 2012. They also did not converge with the EU average between 2002 and 2012, i.e. regions in Greece, Italy, Spain and Portugal; and b) underdeveloped regions: regions with a GDP per capita in PPS below 50% of the EU average in 2011, i.e. regions in Bulgaria, Hungary, Poland and Romania. <https://ec.europa.eu/jrc/sites/jrcsh/files/Smart%20Specialisation%20for%20lagging%20regions.pdf>

<sup>29</sup> As part of the European Semester Process of macroeconomic governance, NRPs contain national targets relating to EU-wide headline targets and illustrate how MSs intend to reach them. In a few cases, e.g. in MSs where the policy fields of interest are competence of regions or sub-national authorities (e.g. BE, DE, UK, IT), NRPs also provide some indication of specific regional programmes. The analysis of the 2016 NRPs covers 27 European Member States. Portugal is not included due to lack of an English version of the NRP. For Germany, we have analysed the 2015 NRP since the 2016 document is in German. See the availability Table 2.1 in Annex to Chapter 5 – Section 2.

<sup>30</sup> European Commission (2016h) Synthesis of Evaluation Results and Plans under the ESIF Programmes 2014-2020. SWD(2016) 447 final. . 20.12.2016. Brussels. Available at [http://ec.europa.eu/regional\\_policy/sources/how/strategic-report/swd\\_esif\\_annual\\_summary\\_2016\\_en.pdf](http://ec.europa.eu/regional_policy/sources/how/strategic-report/swd_esif_annual_summary_2016_en.pdf)

research organisations. Within this framework, most EU MSs and regions have launched ambitious **policy reforms to improve their R&D systems and digitalisation**, increasing public spending and providing incentives for private investment. In addition, some countries (e.g., CY, HR, IT, LV) have promoted greater efficiency in the use EU funds in these policy fields.

In few cases (AT, DK, EE, HU, LT, ), specific measures are envisaged to **support the culture and creative industries as drivers of growth**.

In relation to the **development of KE skills**, all MSs have implemented measures to improve the **quality of higher education and increase participation in tertiary education**, while only a few support interventions to specifically develop STEM/ICT skills (e.g. DE, HR, HU, LT, LV, , SE).

A number of countries have also supported **knowledge circulation**, including the regulation of intellectual property rights (AT, CY, CZ, FI, HU, IT, LT, LU, LV, PL, SE, SI, UK), and brain circulation. Many countries (AT, CY, CZ, DK, EE, ES, HR, HU, IE, LT, LU, LV, PL, RO, SE, SK, UK) are supporting the **participation of researchers in interregional and international programmes**. This kind of intervention may create opportunities to increase the mobility of high skilled workers both across and within countries, even if for a limited period.

In addition to these, some measures are specifically planned to **attract high skilled workers** (CZ, DE, DK, EE, LV, LU, SE) and, in particular, **international PhD students, researchers and academics** (CY, DE, EE, HR, IT, LT, LU, RO, SE, UK). Italy, Finland, Luxembourg and many Eastern countries (BG, EE, HR, LV, LT, PL, RO and SI) encourage students to spend periods abroad in order to improve their skills and international networks.

Less widespread are national and regional strategies designed to **incentivise the return of skilled workers living abroad**. Southern and Eastern EU countries, characterised by a consistent outflow of workers, are implementing specific strategies to develop and manage networks with their citizens who have migrated abroad (diaspora strategies). Some countries (e.g. AT, BG, LV, SE) are implementing or planning actions to **attract high skilled migrants, including refugees**.

Most of the measures listed in the NRPs, and particularly in the case of Southern and Eastern countries, are **co-funded by the European Structural and Investment Funds (ESIF)**. In order to ensure that EU funding is focused on results and creates strong incentives for the effective delivery of Europe 2020 targets at regional/national level, the ESIF's Regulations have introduced **thematic and general ex-ante conditionalities**<sup>31</sup>. These conditions generally require the existence of appropriate regulatory and policy frameworks, and sufficient administrative/institutional capacity. The examples of measures implemented by MSs and

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<sup>31</sup> Thematic ex-ante conditionalities are linked to the thematic objectives and investment priorities. General ex-ante conditionalities are linked to horizontal aspects of programme implementation.

regions provided in Annex to Chapter 5, show that **ex-ante conditionalities are acting as an important incentive for the development of comprehensive and targeted strategies** and action plans based on national/regional assets and potentials in the policy intervention areas.

However, there is still little experience on how to exploit local assets and potentials through the use of innovative and knowledge based interventions. Some interesting examples in this respect are provided by the regional case studies illustrated in Chapter 6.

## 5.1 Measures supporting the KE

### 5.1.1 Support for R&D

All the EU countries are implementing measures to support investments in R&D. The main strategies are the following:

- the **development of strategic plans defining priorities in R&D&I** and increasing public spending in R&D&I, interventions supporting the efficiency of R&D&I funding, as well as better use and greater absorption of EU funds;
- **incentives to private investments in R&D&I**, such as tax credit schemes, patent boxes, tax relief for investments in capital equipment, etc.;
- **investment in ICT infrastructure and scientific and higher education institutions**, in order to support the development of and research in the field of digitalisation;
- **investments of STEM/ICT skills**, including measures to ensure high tertiary education completion rates, improve the quality of education, and support the employability of human R&D&I resources;
- the **promotion of business innovation and productivity**, by supporting access to financing and internationalisation, better definition of intellectual property rights;
- measures to support the **circulation of knowledge and technologies**, ensuring access to knowledge for enterprises (particularly SMEs), by encouraging the creation of links between research institutions and companies (through the activation of centres of excellence, industrial districts and clusters, and the diffusion and adoption of innovation); as well as the promotion of international cooperation in R&D&I projects, also through European and international programmes (e.g. Horizon 2020, ESA, ERA, etc.), incentives to attract professors, researchers, PhD students and high skilled workers from abroad, through scholarships, research opportunities, etc.

These **strategies are largely funded with the ESI Funds**, especially in Southern and Eastern MSs. The ESI Funds' allocation for Research and Innovation (R&I) in the current 2014-2020 programming period reaches 30% of the total allocations (EUR 65.7 billion). In addition, SSS

are also expected to mobilise the innovation potential of all EU regions<sup>32</sup> and almost EUR 95 billion will be awarded to enhance the competitiveness of SMEs.

According to a recent European Commission implementation report (European Commission, 2016g), **by the end of 2015, EUR 3.4 billion were already allocated to specific R&I projects under the ERDF and the EAFRD** (5.7% of the 2014-2020 total planned); 19,000 firms were expected to benefit from selected ERDF schemes promoting cooperation with research institutes (15% of target), while it was anticipated that 5,000 researchers would benefit from improved R&D infrastructure (7% of target).

In order to ensure a sustainable impact of ESI Funds for R&D&I at regional/national level in terms of higher knowledge-intensity and added value, the Funds Regulations have introduced specific ex-ante conditionalities<sup>33</sup> that have supported the development of national and regional R&D strategies and action plans in most MSs<sup>34</sup>.

Box 5.1 below provides some examples of policies supporting KE and R&D investments adopted in EU countries. Further examples of measures adopted by EU MSs are provided in the Annex to Chapter 5.

*Box 5.1: Examples of measures to support the knowledge economy and R&D&I investment*

**Innovate UK** is the UK's public innovation agency developing a five-year Strategic Plan and an annual Delivery Plan (2016-17) based on: nurturing small and high-growth companies, helping them to become high-growth mid-sized companies with strong productivity and export success; building on innovation excellence throughout the UK; developing Catapults within a national innovation network, to provide access to cutting edge technologies, encourage inward investment and enable technical advances in existing businesses; working with the research community and across government to turn scientific excellence into economic impact and improve efficiency; evolving funding models.

*Source: UK National Reform Programme 2016, p.p. 56-7.*

**Denmark - Innovation Fund.** In order to strengthen the Fund's regional roots, from 2016 and for a three-year period thereafter the Innovation Fund will have staff members located in proximity to regional knowledge environments.

*Source: Denmark's National Reform Programme 2016, p. 45.*

**Italy - Patent Box.** The optional concessionary tax regime for income from intangible assets (patent box) has been fine-tuned in order to unlock the potential of patents and other intellectual property schemes as well as their value. In 2015, businesses made some 4,500 applications to qualify for the

<sup>32</sup> [http://ec.europa.eu/regional\\_policy/en/policy/themes/research-innovation/](http://ec.europa.eu/regional_policy/en/policy/themes/research-innovation/)

<sup>33</sup> For all investment priorities under the R&I theme, the conditionalities require the existence of a national or regional SSS in line with the NRP, to leverage private R&I expenditure. The SSS should be based on SWOT or similar analyses to concentrate resources on a limited set of R&I priorities; outline measures to stimulate private RTD investment; and provide for the set up of a monitoring mechanism. In addition, the conditionalities require the presence of a framework outlining available budgetary resources for R&I as well as a multi-annual plan for budgeting and prioritisation of investments in R&I infrastructures linked to Union priorities and, where appropriate, the European Strategy Forum on Research Infrastructures (ESFRI). These ex ante conditionalities are motivated by the fact that R&D&I policies – in particular at regional level – are often fragmented and heavily focused on supply-side measures (investment in R&D capacity), with little attention to the demand-side. In addition they concentrate on the manufacturing sector, but do not support emerging sectors, innovation in services, cross-fertilisation between sectors, public sector innovation and non-R&D innovations, and are not adjusted to the local/regional needs and potential (European Commission, 2014d).

<sup>34</sup> See the examples provided in Table 2.6 in Annex to Chapter 5 – Section 2

Patent Box taxation scheme, with around 1,200 of those coming from businesses located in the Lombardy Region.

Source: *Economic and Financial Document 2016-NRP*, p. 90.

**Cyprus - Central Technology Transfer Office (TTO)**, planned to provide support to the academic and research institutions in relation to the protection and exploitation of their research results and intellectual property.

Source: *Cyprus National Reform Programme 2016*, p.25.

**France - Pôles de compétitivité and Métropoles French Tech**. This programme, launched in 2013 and to be completed in 2018, is aimed at steering the diffusion and marketing of innovative products/services. Each cluster is bound by a performance contract forging closer links with technology transfer players, strengthening support for SMEs in access to financing, internationalisation, and access to expertise. France's cluster policy is going to be assessed in order to enhance the coordination of the cluster policy with industrial policy and to make the map of clusters more transparent.

Source: *National Reform Programme 2016*, p. 62.

**Latvia - Research and Scholarship activity**. 11 research projects are currently being implemented with support from the European Economic Area and Norwegian financial instruments with the aim of promoting the development of research-based knowledge in Latvia in the fields of fundamental and applied research. The projects are implemented within the thematic fields of social sciences and humanities, and health.

Source: *National Reform Programme of Latvia for the Implementation of the "Europe 2020" Strategy*, p.39.

**Magurele (RO) - Phase II of the pan-European project "Extreme Light Infrastructure – nuclear physics"**. This research project (with support from the ERDF) is open to researchers from public and private bodies worldwide. The project also supports regional growth with new jobs, modern infrastructure, business development and increased the visibility and development potential.

Source: *European Commission (2016g)*

### 5.1.2 Digital growth

The EC has adopted a **Digital Agenda for Europe**<sup>35</sup> as part of the overall Europe 2020 strategy. ESI Funds are meant to support the implementation of the Digital Agenda at national and regional level and to stimulate ICTs both as a growing economic sector and as an enabler for other areas of society and economy.<sup>36</sup>

Among the thematic objectives are the enhancement of access, use and quality of ICTs.<sup>37</sup> These objectives also constitute a key priority for the ERDF, with a significant part of the investment focusing on the following areas of intervention:

- **extending broadband deployment and the roll-out of high-speed networks;**

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<sup>35</sup> European Commission (2010d). Communication from the Commission "A Digital Agenda for Europe". COM(2010) 245 final. Brussels.

<sup>36</sup> Around €16 billion is earmarked for the development of e-government, ICT services and applications for SMEs, high speed broadband, smart grids and intelligent energy distribution systems, and large scale data centres. Such investment is expected to provide 14.5 million additional households with broadband access. Further information on the policy processes, practices, and instruments adopted in EU for the ICT development is provided in the European Commission (2014f) policy brief "*Digital Growth Strategies in EU Regions*" available at [http://s3platform.jrc.ec.europa.eu/documents/20182/114990/JRC93185\\_Digit\\_GrowthStrategies\\_EU\\_Regions.pdf/88bd9adb-031a-42ae-8b30-d633b06bd849](http://s3platform.jrc.ec.europa.eu/documents/20182/114990/JRC93185_Digit_GrowthStrategies_EU_Regions.pdf/88bd9adb-031a-42ae-8b30-d633b06bd849)

<sup>37</sup> [http://ec.europa.eu/regional\\_policy/en/policy/what/glossary/t/thematic-objectives](http://ec.europa.eu/regional_policy/en/policy/what/glossary/t/thematic-objectives)

- **developing ICT products and services and e-commerce;**
- **strengthening e-government, e-learning, e-inclusion, e-culture and e-health.**

Furthermore, ICT measures are included in many SSS, with the aim of identifying the priorities for ICT investment which are pertinent for the territory, balancing the needs of supply of and demand for ICT infrastructure, applications and services, together with the identification of future areas of specialisation.<sup>38</sup>

Overall, more than EUR 15 billion of ESI Funds were allocated to ICTs in the 2007-2013 programming period, with a clear shift in investment priorities from infrastructure to support for content development, both in the public sector (e-health, e-government, etc.) and in SMEs (e-learning, e-business, etc.). **Allocations to enhance access to, use of, and quality of ICT increased to EUR 20.7 billion in the 2014-2020 programming period.**

In order to foster the implementation of national and regional digital growth measures, consistent with the Digital Agenda for Europe's goals, the ESI Fund's regulations include, among ex-ante conditionalities, the existence of a strategic policy framework for digital growth<sup>39</sup>.

The NRPs usually internalise these conditionalities and indicate the following areas of intervention for their digital strategies:<sup>40</sup>

- **plans for industry digitisation** (the so-called Industry 4.0); plans for supporting the digital economy, e.g. development of digital infrastructure (e.g. high-speed broadband);
- **development of relevant digital skills;**
- **development of computerised/digitalised public services and public administrations.**

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<sup>38</sup> <http://s3platform.jrc.ec.europa.eu/digital-growth>

<sup>39</sup> The policy framework for digital growth should include:

- an analysis of demand for and supply of ICTs, including clear budgeting and prioritisation of actions through a SWOT analysis (or similar) consistent with the Scoreboard of the Digital Agenda for Europe; and an assessment of needs to reinforce ICT capacity-building;
- indicators to measure progress of interventions in areas such as digital literacy, e-inclusion, e-accessibility, and progress of e-health aligned, where appropriate, with existing relevant sectoral Union, national or regional strategies;
- national or regional Next Generation Network (NGN) Infrastructure Plans in order to reach the Union high-speed Internet access targets, focusing on areas where the market fails to provide an open infrastructure at an affordable cost and of a quality in line with the Union competition and State aid rules, and to provide accessible services to vulnerable groups.

<sup>40</sup> For a briefing of successful projects for enhancing access to and the use and quality of information and communication technologies, within the ERDF framework, see also <http://s3platform.jrc.ec.europa.eu/documents/20182/84453/ENHANCING+ACCESS+TO,+AND+THE+USE+AND+QUALITY+OF+ICT/70c4a2b7-7025-482a-bb99-7f7d9f6a6482>

Box 5.2 below illustrates some examples of policies for digital growth adopted in EU countries. Further examples of measures adopted by EU MSs are provided in the Annex to Chapter 5.

*Box 5.2: Examples of policy measures for digital growth*

**Slovenia - Establishment of the Digital Slovenian Coalition.** The government in cooperation with the economy, educational system, R & D institutions, local communities and civil society set up a digital Slovenian coalition - digitalna.si. The aim is guiding the development of the digital society in the next developmental period to 2020.

Source: National Reform Programme 2016, p. 8. See also [http://www.bizbox.eu/si/index.php?option=com\\_content&view=article&id=221:vzpostavitev-slovenske-digitalne-koalicije-digitalna-si-2&catid=24:bizbox-news-en&Itemid=238&lang=en](http://www.bizbox.eu/si/index.php?option=com_content&view=article&id=221:vzpostavitev-slovenske-digitalne-koalicije-digitalna-si-2&catid=24:bizbox-news-en&Itemid=238&lang=en)

**Czech Republic - National Plan for Development of Next Generation Networks.** The Government approved the National Plan for Development of Next Generation Networks, a document representing the fulfilment of the ex-ante conditionality for drawing EU funds in the Operational Programme EIC's High-Speed Internet programme. The national plan should facilitate public investment for the development of high-speed electronic communication networks in the Czech Republic.

Source: National Reform Programme 2016, p. 34.

**Northern Ireland (UK) - Creative Learning Centres.** The network of Creative Learning Centres (CLCs) in Northern Ireland is an internationally renowned and innovative model supporting teachers and embedding digital technology skills in the classroom.

Source: National Reform Programme 2016, p. 46.

**Estonia - "10 million e-Estonians".** From the end of 2014, foreigners will be able to receive a secure Estonian e-identity.. The aim of the project is to make sure that people around the world choose to associate with Estonia via e-identities".

Source: National Reform Programme 2016, Annex 1, p. 50. See also <https://taavikotka.wordpress.com/2014/05/04/10-million-e-estonians-by-2025/>

**Finland - Open Data of the Six Cities.** The first phase of the project involving Helsinki, Espoo, Vantaa, Tampere, Turku and Oulu is supported with EUR 3.4 million of EU and national funds. The aim is to implement common publishing platforms and licencing to make public data widely available and foster innovation.

Source: European Commission (2016g)

## 5.2 Skills development and skills mismatch strategies

As described in the scenario analysis (Chapter 4), according to both existing evidence and expert views, by 2025 nearly half of new and replacement EU vacancies will be for highly-qualified workers. Low rates of tertiary education attainment may thus result in skills shortages and hamper productivity, innovation and competitiveness.<sup>41</sup> The analysis carried out in chapter 3 indeed shows that although the educational attainment continues to rise among young people, the gap in levels of education between and within regions persists, together with mismatch between skills and jobs, not least because the relatively poor performance of the education and training systems in many EU countries/regions.

Investing in higher education and training is thus crucial to remain competitive in a context of increasing relevance of the KE and rising competition<sup>42</sup>. It is also crucial to address inequality

<sup>41</sup> [http://ec.europa.eu/europe2020/pdf/themes/2016/tertiary\\_education\\_attainment\\_201605.pdf](http://ec.europa.eu/europe2020/pdf/themes/2016/tertiary_education_attainment_201605.pdf)

<sup>42</sup> By 2020, 16m more jobs will require high qualifications, with 12m fewer jobs requiring low skill levels.

and exclusion, as higher educational levels are shown in the literature to improve the employability of disadvantaged groups, reduce poverty risks over the life course, improve health and social cohesion as well as political participation.

Most countries/regions have implemented actions aimed at **broadening participation in education and training and increasing education completion rates as well as measures to increase access to higher education**. Among measures aiming at reducing early school leaving is support to the **improvement of education and training quality and of educational infrastructures and tools** (building and modernisation of schools).

A second group of actions is meant **to ensure** the development of skills profiles relevant to the business sector in order to enhance the long-term attractiveness of education and **reduce skill mismatches**,<sup>43</sup> including improved guidance and counselling services (pre-entry guidance), and measures enhancing cooperation between education and the business sector through apprenticeships, internship schemes and short-term work placements, often supported by the ESF.

A third group of measures is meant to **support VET and life-long learning schemes** with the provision of: training opportunities and job placements for the unemployed and workers at risk of losing their job; training opportunities for the employed; and vocational education/training and lifelong learning for adults.

Another important group of measures are those **targeted at young people who are not in education, employment or training (NEETs)** or have low levels of education. Young people are a strategic target for employment strategies supported by the ESF and the Youth Employment Initiative (YEI), one of the main EU financial resources for the implementation of Youth Guarantee schemes<sup>44</sup> targeted at NEETs<sup>45</sup>. In some EU countries/regions (e.g. Abruzzo in Italy), the Youth Guarantee programme also includes actions to support inter-regional and transnational mobility.

Some examples of measures adopted at the national and/or regional level to support skill development are presented in Box 5.3 below.

*Box 5.3: Examples of measures for skill development*

**Italy - The national Programme Garanzia Giovani ("Youth Guarantee")** is funded by the Ministry for Employment and Social Policy and implemented at the regional level. The programme

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<sup>43</sup> <http://ec.europa.eu/esf/main.jsp?catId=532&langId=en>;  
<http://ec.europa.eu/esf/main.jsp?catId=534&langId=en>

<sup>44</sup> Three years after the launch of the initiative, the Commission claims that 14 million young people have entered Youth Guarantee schemes, with around 9 million people taking up an offer. Almost two thirds of young people who left the Youth Guarantee in 2015 took up an offer of employment, education, traineeship or apprenticeship.

<sup>45</sup> Under the Youth Guarantee, Member States have put in place measures to ensure that young people up to the age of 25 receive a good quality offer of employment, continued education, or an apprenticeship or a traineeship within four months of leaving school or becoming unemployed. Of the total budget, EUR 3.2 billion come from a dedicated Youth Employment budget line complemented by EUR 3.2 billion more from the ESF. The ESF contribution is topped up by the eligible Member States' own financial resources. In September 2016 the Commission proposed increasing the YEI budget from EUR 6.4 to EUR 8.4 billion.



focuses on the people most affected by the economic crisis: young people aged 15-29 who are not in education, employment or training, also known as NEETs. In the Abruzzo region, the regional implementation plan received funding for 31,160,034 euros. The programme includes actions for education, training, and counselling services; it also entails employment bonuses for inter-regional and transnational mobility. According to the region's programme results, in 2016 18,202 people were supported by the Garanzia Giovani Programme, with some 2,420 training places provided, 1,325 people given counselling services and 850 employment bonuses awarded.

Source: <http://www.garanziaiovani.gov.it/Pagine/Regione-Abruzzo.aspx>

**Flanders (BE) - Action plan 'Together Against Early School Leaving'**. The plan has both a preventive and a remedial character, integrating actions directed at young people who are at risk of dropping out (intervention) and at those who have dropped out (compensation). Finally, the plan supports the development of the Flemish indicators for early school leaving and the website 'Mijn onderwijs' (My Education) where schools can find information about themselves. The plan will mainly be rolled out by local education actors and administrations.

Source: *National Reform Programme 2016*, p.115.

**Bulgaria – System for career guidance in school education** – This project is co-funded by ESI Funds under the Operational Programme 'Education and Science for Smart Growth 2014-2020'. The aim is to support the improvement of students' professional skills through the development of a career guidance system. A network of 28 regional career guidance centres has been established. A web portal for career guidance and a handbook for career counsellors were developed. A programme for career guidance to students in 42 pilot schools is going to be implemented.

Source: *National Reform Programme 2016*, p.36. See also <http://www.ill-hub.eu/goodpractices/test-3/>

**Finland - Ohjaamo centres and Kohtaamo project**. In 2015 one-stop guidance centres (*Ohjaamo*) were launched with the support of the ESF. The centres are targeted at young people under 30 and offer multidisciplinary information, guidance and support. The centres are run in partnership between the public, private and third sectors.. The Kohtaamo project supports and coordinates the work of the Ohjaamo centres, by developing their service model as well as an online information, advice and guidance service for young people. (studyinfo.fi).

Source: <http://www.hel.fi/www/uutiset/en/kaupunginkanslia/services-for-young-people-in-the-same-place>

**Västra Götaland (SE) - The Skills Hub**. The Skills Hub, supported by the ESF, is intended to help the manufacturing industry in the Västra Götaland region by strengthening the skills and labour market opportunities of employed women and men and by developing management systems for strategic skills supply. The Hub is also meant to create gender-equal, inclusive workplaces by setting of targets for skills development and development of company culture, and skills-enhancing initiatives at the strategic and individual levels.

Source: *Sweden's national reform programme 2016*, p, 65-66.

Most of these measures are supported by the **ESI Funds** under the broad theme of "Educational & Vocational Training" (Thematic Objective 10). **Overall, EUR 49.2 billion is allocated to this thematic objective, with 80% covered by the European Social Fund (ESF)**<sup>46</sup> the main EU fund investing in employment, social inclusion and education, alongside the YEI. According to the European Commission (2016), by the end of 2015, 539,000 participants had already been involved in measures supported by the ESF, of whom at least 47% were had only a primary or lower secondary educational level, and 83,000 participants had already gained a qualification.

<sup>46</sup> See Table 2.13 in Annex to Chapter 5 – Section 2

The **ERDF** can also support investments in education and skill upgrading, with measures aimed at ensuring access to good quality education, reducing educational segregation, with investments in transportation and road infrastructure, as well as investments in education and training infrastructure (upgrading and new infrastructures), especially in those areas and schools with a more disadvantaged pupil population. The ERDF can also sustain the adoption of new technologies in education and training (e.g., ICT applications for e-learning), investments in the creation and improvement of advice centres for students, as well as student accommodation facilities. As for VET and adult learning, the ERDF can support the upgrading of VET and adult learning centres, and companies investing in training equipment.

The ESI Funds' ex-ante specific conditionalities in the case of higher education, VET and lifelong learning require the existence of a national or regional strategic policy framework for: increasing tertiary education attainment, quality and efficiency; lifelong learning; and increasing the quality and efficiency of VET systems.

### **5.3 Measures addressing high skilled mobility and diaspora strategies**

Labour mobility is regarded as a major driver for EU competitiveness and the reduction of territorial imbalances, rigidities and skills mismatches. Therefore, besides investing in the education upgrading of the resident population, many measures indicated in the NRPs are dedicated to the provision of educational and professional opportunities at the European/international level, the attraction of high skilled workers from surrounding areas, other countries/regions<sup>47</sup>, the re-capturing of the lost skills of emigrants through measures supporting brain circulation, return migration and/or diaspora strategies to facilitate the return of high skilled emigrants, and/or their contribution to the country/region of origin through the creation of knowledge networks and remittances.

In order to address this issue, **brain circulation, knowledge transfer, and return migration policies** are increasingly adopted to stem or limit the brain drain that excessive immigration flows of highly skilled migrants may represent for the country/region of origin.

A number of EU countries which have experienced high emigration flows have introduced a raft of return migration measures aimed at encouraging the return of native talent living abroad. The return migration policies generally focus on improving living conditions and economic incentives, particularly through tax breaks.

In addition to national programmes, there are initiatives at regional and local levels, run by local government, non-governmental organisation (NGOs) or private companies. In **Italy**, an example of a regional return migration policy initiative is represented by the 'Master's and Back' programme introduced in Sardinia. The programme granted 3,500 scholarships to fund

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<sup>47</sup> Among these are measures to make the recognition of foreign qualifications and employment services more efficient to simplify access to the labour market for new arrivals (e.g., language courses, in combination with training and qualification measures. See also the above measures for attracting professors, researchers, PhD students and high skilled labour force.

overseas study on the understanding that grantees would return to the region (Aspen, 2012). In **Poland**, the self-government of the Opolskie Voivodship and the Regional Labour Office in Opole in 2008 implemented a programme aimed at encouraging Poles working abroad to return to the region. The programme called 'Opolskie Voivodship – here I stay' ('Opolskie – tutaj zostaję') was targeted at graduates, unemployed people and those living and working abroad (mostly in the UK, Germany and the Netherlands) (TFMI, 2012). Another programme 'ReturntoPoland.pl' ('Wracajdopolski.pl') was also launched in 2008 by the Polish branch of Hays (Hays Polska) in cooperation with the Polish–British Chamber of Commerce and the Polish Ministry of Labour and Social Policy. Its aim was to address the shortages of skilled workers on the Polish labour market by targeting Poles working abroad in the IT, banking and finance sectors (TFMI, 2012; OECD, 2013b).

In recent years, there has also been a growing attention to the ways the **diaspora**<sup>48</sup> of high skilled people can support the development of their home country/region. Boyle and Kitchin (2013) list the different ways by which high skilled emigrants can contribute to their country of origin: from providing economic support either through remittances or direct investments or diaspora tourism; to the creation of knowledge networks and providing support for human capital investments; to social investments in charitable organisations or public goods, that can support vulnerable population; to advocacy and diplomacy. The recognition of this potential contribution has led many out-migration countries to develop specific '**diaspora strategies**' aimed at facilitating the contribution of high skilled emigrants to the country/region of origin. **These strategies are however still little developed in European countries and regions, that are mainly focusing on facilitating return migration.**

Employment and labour mobility is one of the eleven Thematic Objectives of Cohesion Policy in 2014-2020. Under the broad theme of "Sustainable & Quality Employment" (Thematic Objective 8), the ESI Funds promote sustainable and quality employment and support labour mobility with an overall allocation of almost EUR 56.3 billion.

The ESF is the main CP Fund for labour mobility and the modernisation of public and private employment services, through actions that enhance transnational labour mobility, as well as better cooperation between institutions and relevant stakeholders.<sup>49</sup> The ERDF supports investments in employment centres, local development initiatives and strategies for specific disadvantaged areas.<sup>50</sup> The fund's ex-ante specific conditionalities in the case of labour mobility require the modernisation and strengthening of labour market institutions according to the Employment Guidelines on the basis of a clear strategic policy framework and ex-ante assessment including gender dimensions. The EC, in particular, requires the upgrading of

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<sup>48</sup> In the migration literature, the term 'diaspora' includes all those living outside their country of origin who organise themselves loosely in communities and maintain contacts with their homeland. These groups are extremely important for local development policies, since they often contribute to their countries of

<sup>49</sup> <http://ec.europa.eu/esf/main.jsp?catId=532&langId=en>

<sup>50</sup> [http://ec.europa.eu/regional\\_policy/en/policy/themes/employment/](http://ec.europa.eu/regional_policy/en/policy/themes/employment/)

employment services to ensure: i) the delivery of comprehensive and transparent information on new job vacancies and employment opportunities, as well as personalised services and active and preventative labour market measures, focussing on people at highest risk of social exclusion; and ii) the set-up formal or informal cooperation arrangements with relevant stakeholders.

Box 5.4 provides examples of brain circulation and return policies adopted in EU countries.

*Box 5.4: Examples of national return policies and brain circulation*

**Bulgaria - National Strategy in the Field of Migration, Asylum and Integration** (2011-2020). This Strategy inter alia, seeks to attract back Bulgarian migrants who have emigrated in the last two decades

Source: TFMI, 2012; Weinar, 2014.

**Croatia - “Crossing Borders - Scientific cooperation”** - This programme is meant to facilitate the return of scientists from the Croatian diaspora through the creation of networks between Croatian scientists and experts working abroad. The Programme supports medium size projects conducted in cooperation by scientists from Croatia and the Croatian Diaspora. The objective is to enable Croatian scientists to increase their scientific excellence and become more competitive and be able to attract sources of international and European funding. Projects are also encouraged to support the transfer of knowledge and technology from world's leading institutions, where scientists from Croatian Diaspora work, to the private sector in the Republic of Croatia. The total budget for the programme (EUR 5.8 million) is secured by ESI Funds (OP Effective Human Resources 2014-2020).

Source: National Reform Programme 2016, p.68.

**Estonia Portal ‘Talents back home!’**- The Portal provides information to Estonian migrants about employment opportunities in their home country.

Source: EUKN, 2013b.

**Hungary – The “Youth, Come Home” programme** was launched in the spring of 2015 and HUF 100 million was spent on it. The aim of the program was to assist young Hungarians with returning home from abroad by providing housing allowances and employment opportunities for them in Hungary. Within the framework of the programme, information, job offers, preparation for selection and placement and the establishing of businesses here are provided.

Source: National Reform Report 2016.

**Italy - The “brain gain” fiscal provision.** This initiative has been promoted by the Ministry of Economy and Finance, with the publication of a law in 2010 (L. 238/2010) establishing a special fiscal regime for the return of workers abroad. Source: National Reform Programme 2016, Annex 1, p.78-9. Il Sole 24 Ore, [http://www.ilsole24ore.com/art/notizie/2013-05-13/rientro-cervelli-tasse-light-063815.shtml?uuid=AbH1oLvH&refresh\\_ce=1](http://www.ilsole24ore.com/art/notizie/2013-05-13/rientro-cervelli-tasse-light-063815.shtml?uuid=AbH1oLvH&refresh_ce=1)

**Poland - The Tax Abolition Act.** The Act was introduced in 2008 in order to avoid double taxation for Polish migrants. Poland also introduced tax credits and investment allowances, grants for individual technology transfer, support for the recognition of education and qualifications acquired abroad and easier acquisition or restoration of Polish citizenship.

Source: TFMI, 2012; OECD, 2013b

**Romania -Conference Diaspora in Scientific Research and Higher Education.** This project aims to bring together scientists from abroad interested in collaborating with counterparts in Romania.

Source: National Reform Report 2016, p.28.

**Romania - Diaspora Start-up programme,** launched in 2016 and managed by the Romanian Ministry of External Affairs, aims to incentivise Romanian entrepreneurs abroad to invest in Romania (see chapter 6 for further details).

**Sweden - The Omstart (Re-start) web portal and the Integration Halland - municipalities in Halland.** Omstart is a web portal for immigrant university graduates created by the Swedish Confederation of Professional Associations (Saco). Within the *Integration Halland* project, six municipalities in Halland are cooperating to simplify the pathway to the labour market for recent

arrivals. Targeted activities are being carried out in parallel with the building of a knowledge platform. The project is financed via ESF and started in 2015.

*Source:* National Reform Programme 2016, p. 53 and p. 66. See also [www.saco.se/omstart](http://www.saco.se/omstart)



## 6 Regional strategies to capitalise on place-based potentials and skill base: Evidence from the field work

While all EU countries and regions are supporting SSS, often with the co-financing of EU Funds, there is still little experience on how to exploit local assets and potentials through the use of innovative and knowledge based interventions and emigrant skill base.

The regional in depth case studies provide interesting evidence on the strategies adopted at the regional level to support the place based potentials for KE as a driver of regional development and employment. The six case studies also provide evidence on the main facilitating/hindering factors and mechanisms.

### 6.1 Main features of the selected regions

The selected regions are representative of the four different regional clusters identified according to their knowledge economy's (potential) level (see chapter 3.3); the regional labour market conditions; the population and migration dynamics; and the socio-economic context.

The six selected case studies are:

- London (UK) and Berlin (DE) – as exemplar cases of Cluster 1 Regions - Highly competitive and KE-based economies,
- Mecklenburg-Vorpommern (DE) – as exemplar case of Cluster 2 Regions - Competitive and KE-related economy,
- Abruzzo (IT) and Malopolska (PL) – as exemplar case of Cluster 3 Regions - Less competitive with potential in KE economy,
- North-East Region (RO) – as exemplar case of Cluster 4 Regions - Less competitive economy with low incidence of KE.

Table 6.1 compares relevant data related to knowledge economy in the six selected regions with the EU28 average and Box 6.1 presents the main features of the selected regions. A more detailed indication of the motivations for the selection of the six case studies is presented in Annex to Chapter 6.

*Box 6.1: Main features of the selected regional case studies*

**London (UK)** –Until the 2016 Brexit referendum, London can be considered as a prominent example of migration inflow, as it attracts a large number of migrants, is an ideal destination for job creation and highly-skilled migration, as the UK's economy continues to grow reasonably quickly in relation to other European countries. The City of London and associated services have acted as a key pull factor for highly skilled young migrants from the EU. The result of the Brexit referendum introduced a period of significant business uncertainty which, in some sectors, notably the finance sector (and the City more generally), resulted in a hiring freeze.

**Berlin (DE)** – Berlin represents a pivotal case study to contextualise migration to urban centres in the context of the knowledge economy in Europe. As matter of fact, its post-unification economic growth included a dramatic shift in the skills distribution of its workforce, from an economy dominated by subsidised manufacturing when the city was divided, to dynamic knowledge-based industries. It is also one of the preferred destinations of outmigrants from other Eastern regions.

**Mecklenburg-Vorpommern (DE)** –This region is a good example for a well working knowledge-based economy in a rural and peripheral region, and shows how cooperation of a group of well-

organised actors can lead to a prosperous and successful situation. While the first economic activities are agriculture, fishing and tourism, the region actually has a very well developed and vibrant health-economy.

**Abruzzo (IT)** - The presence of three universities has represented an important asset for the knowledge base of the region, with nearly 60,000 students enrolled before the crisis. However, Abruzzo was particularly hit by the economic crisis and in 2009 a magnitude 6.3 earthquake completely destroyed the historical centre of the city capital, L'Aquila, and the economy of the city was devastated. In this context, the policy which led to the creation, in 2013, of the Gran Sasso Science Institute (GSSI) adopted a different perspective compared to previous programmes. It focused on the "extraordinary" event of the earthquake and on the unique resources of the territory to attract international high-skilled researchers.

**Malopolska (PL)** - This region is among the top Polish regions when it comes to job creation and it is trying to deal with outmigration mainly via the creation of comfortable conditions for the offshoring services, providing support to entrepreneurship, and supporting return migrations by reducing administrative barriers. Moreover, the region is characterised by good opportunities for the development of the knowledge economy due to a high availability of skilled labour thanks to a high potential scientific and research community and the higher education programme. The region also has a well-developed transport infrastructure and significant socio-economic growth potential, thanks to the presence of natural resources and of large industrial plants, with businesses mainly located the metropolitan areas of Krakow.

**North-East Region (RO)** –The North-East Region is a sending region, even though it seems to experience an inverse tendency in recent years. It has experienced several social and economic problems due to emigration along the years: the children left behind ("white orphans") are one of the major problems faced by the region, and it is also highly affected by brain drain, especially in the medical field. It is however investing in the development of knowledge economy and it is characterised by strong collaborations between universities and companies, especially in the field of ICT. Several national and regional policy measures are foreseen on the one hand to enhance the development of knowledge economy and its potential to retain high skilled workers and, on the other, to encourage skilled Romanian migrants to return.

The six regions present different historical and political features, upward trends in terms of in- and outward migration, and an array of policies to boost the KE. These differences can be detected both **among the regions**, due to their peculiarities in terms of socio-economic conditions, geographical location, historical patterns, and above all, in terms of their specific level of knowledge economy progress; as well as **within the regions**, in some cases experiencing very different approaches towards inward migration in different time periods.

Despite these aspects, **all the selected cases have undertaken some explicit strategy to leverage the regional knowledge-related sectors and skills.**

The following paragraphs discuss the different aspects of the identified regional strategies through a backward mapping, starting from the results achieved; synthesized policies adopted at local level, with a discussion of the main *mechanisms* embedded within them; and finally, the description of contextual features which frame the promoted strategies.



Table 6.1: Data from the selected case studies and EU28 average

|  |  | London (UK) -<br>(Cluster 1) |         | Berlin (DE)<br>(Cluster 1) |         | Mecklenburg<br>(DE) (Cluster 2) |         | Abruzzo (IT)<br>(Cluster 3) |         | Malopolskie (PL)<br>(Cluster 3) |         | Nord-Est (RO)<br>(Cluster 4) |         | EU28    |         |
|--|--|------------------------------|---------|----------------------------|---------|---------------------------------|---------|-----------------------------|---------|---------------------------------|---------|------------------------------|---------|---------|---------|
| Area                                     | Indicator  | 2004-07                      | 2012-15 | 2004-07                    | 2012-15 | 2004-07                         | 2012-15 | 2004-07                     | 2012-15 | 2004-07                         | 2012-15 | 2004-07                      | 2012-15 | 2004-07 | 2012-15 |
| <b>Labour Market and Education</b>       | NEET rate (18-24) (%)  | 13.3                         | 14.2    | 19.0                       | 13.1    | 18.5                            | 12.7    | 15.0                        | 25.8    | 17.0                            | 14.5    | 17.1                         | 15.2    | 15.5    | 11.7    |
|  | Employment rate (25-64) (%)  | 73.0                         | 76.5    | 65                         | 73.9    | 67.3                            | 74.4    | 64.6                        | 62.2    | 66.5                            | 69.4    | 71.6                         | 75.8    | 70.2    | 71.2    |
|  | Youth employment rate (15-24) (%)  | 43.7                         | 39.8    | 36.1                       | 38.4    | 44.9                            | 39.0    | 21.8                        | 15.1    | 22.4                            | 24.4    | 28.1                         | 30.7    | 36.2    | 32.5    |
|  | Youth unemployment rate (15-24) (%)                                      | 18.2                         | 22.1    | 22.8                       | 15.0    | 20.0                            | 11.5    | 22.6                        | 41.5    | 33.1                            | 26.1    | 16.9                         | 11.6    | 17.7    | 22.4    |
|  | Unemployment rate (25+) (%)  | 5.5                          | 5.7     | 17.5                       | 9.6     | 19.2                            | 9.4     | 5.8                         | 9.9     | 9.6                             | 7.6     | 4.2                          | 3.4     | 7.2     | 8.9     |
| <b>Knowledge Economy</b>                 | Total intramural R&D Expenditure (GERD) as a % of GDP                    | 1.0                          | 1.0     | 3.2                        | 3.5     | 1.4                             | 1.9     | 1.0                         | 0.9     | 0.9                             | 1.3     | 0.3                          | 0.3     | 1.8     | 2.0     |
|  | Human resources in science and technology (HRST, % of active population) | 32.2                         | 42.1    | 37.7                       | 43.2    | 25.9                            | 30.3    | 27.2                        | 27.3    | 20.3                            | 27.3    | 13.1                         | 13.6    | 26.7    | 30.5    |
|  | Patent Applications (per million of inhabitants)                         | 67.7                         | 55.8    | 206.5                      | 164     | 53.9                            | 39.3    | 45.6                        | 19.6    | 5.6                             | 18.5    | 0.5                          | 1.5     | 115.9   | 112.3   |
|  | % population 30-34 with tertiary education                               | 45.3                         | 63.3    | 38.2                       | 42.6    | 22.5                            | 22.4    | 19.8                        | 24.2    | 23.0                            | 40.9    | 9.0                          | 18.6    | 28.5    | 37.0    |
| <b>Population and Migration Dynamics</b> | Crude rate of natural change (per 1,000 persons)                         | 8.9                          | 9.6     | -0.5                       | 1       | -0.3                            | -1.2    | -1.8                        | -3      | 1.3                             | 1.3     | 0.8                          | -1.6    | 0.8     | 0.2     |
|  | Crude rate of net migration (per 1,000 persons)                          | 2.3                          | 5.2     | 2.6                        | 13.2    | -5.0                            | 5.0     | 6.4                         | 6.8     | 0.7                             | 1.1     | -2.1                         | -1.3    | 3.1     | 2.8     |
|  | Crude rate of population change (per 1,000 persons)                      | 11.2                         | 14.8    | 2.1                        | 14.2    | 4.7                             | 3.8     | 4.7                         | 3.8     | 2.0                             | 2.5     | -1.3                         | -2.9    | 3.9     | 3.0     |
|  | Old-age dependency ratio (per 100 persons of working age)                | 16.8                         | 16.3    | 23.9                       | 28.0    | 27.5                            | 33.9    | 32.5                        | 34.2    | 19.2                            | 20.8    | 21.3                         | 25.2    | 24.8    | 27.9    |
| <b>Socio-economic context indicators</b> | People at-risk of poverty or social exclusion (%)                        | n.a.                         | n.a.    | 19.7                       | 20.1    | 19.7                            | 20.1    | 23.0                        | 28.4    | n.a.                            | 23.1    | 56.7                         | 49.8    | 25.2    | 24.3    |
|  | GDP at current market prices (PPS per inhabitant)                        | 44,525                       | 49,975  | 26,775                     | 32,550  | 18,300                          | 22,775  | 21,850                      | 24,075  | 11,025                          | 16,500  | 5,900                        | 9,325   | 24,150  | 27,450  |

Source: Project database. In light blue and grey are presented the maximum values for each indicator.

## 6.2 Results achieved in the KE

The six cases are considered 'exemplar' insofar as they present some outstanding results related to the KE sector. As described in Box 6.2, four cases are former lagging regions, characterised by relevant KE-related outmigration flows, where, however, one can identify hints of a reversing trend.

*Box 6.2: Main KE improvements in the four 'sending regions'*

- **Mecklenburg-Vorpommern (DE)** presents a **relevant growth in the health economy sector**, both in terms of employees and gross added value of the sector, which is higher than the German average. The health economy sector has continually grown since 2000. The net migration rate has passed from less than -5% in 2000 to +10% in 2015, showing that new migrants have chosen to live and work in the region;
- In **Malopolska Region (PL)**, **people employed in science and technology increased by 60% in ten years** (between 2005 and 2015), reaching 40.1% of the total active population (compared to a EU28 average of 31.5%). The Region has become **one of the most attractive FDI destination** in Central and Eastern Europe. The capital Krakow and its metropolitan area host a relevant outsource sector, representing 35% of all employees in this sector in the country;
- **Abruzzo (IT)** and its capital, L'Aquila, were severely affected by the 2009 earthquake and by the destruction of its historical centre. This catastrophic event added to the negative effects of the economic and financial crisis of 2008-09 and the Eurozone crisis which had already worsened all KE-related indicators in the region, and in particular youth unemployment (48.1% of the people aged 15-24). Nevertheless, the Gran Sasso Science Institute (founded in 2013), which has the goal of attracting students and researchers in Physics, Mathematics, Computer Science and Social Sciences, achieved **1,300 applications** in 2016, **of whom 80% by foreign students**. Qualitative information proved that the new Ph.D school helped to relaunch the life and economic activity of the city centre, thanks to the activities promoted by its students and teachers;
- The **city of Iasi and its county in the North-East region** of Romania, registered an overall increase in some KE related sectors. Even though the region is one of the poorest of Romania, the **ICT sector in Iasi registered a growth in the turnover of enterprises of 107%** between 2008 and 2015, compared to 30% growth at country level; **the turnover of active business units in health and social assistance grew by 221%** in the same period. Inward migration has also grown, attracting young migrants from other Romanian regions in particular.

The two European capitals of London and Berlin were selected as examples of "receiving" cities, i.e., preferred destinations by skilled students and workers. Both are characterised by continuous growth in the most relevant KE indicators.

*Box 6.3: Main KE features of the two attracting cities*

- **Berlin** shows a **continuous growth in the overall population, in the number of companies and in GDP**. Human resources employed in science and technology reached 43.2% of the overall active population in 2015, 1 percentage point above the level of London.
- **London** is recognized as a leading KE, high tech and financial services hub and a **prime destination of highly qualified EU migrants**. During and after the economic and financial crisis of 2008-09 the UK's economy has grown reasonably quickly in relation to other European countries. Population also grew, and the City has the lowest rate of old-age dependency ratio among the cases analysed. However, **Brexit** is expected to exacerbate skills and labour shortages in several sectors and has put in question the future of the City of London as one of the world's leading financial centres.

### 6.3 Strategies and mechanisms fostering growth or consolidation of the KE in the analysed regions,

All the case studies have implemented strategies (programmes, policies) that seem to have mostly contributed to boost the KE in recent years. Even though it is not possible nor sufficient to single out a single intervention capable of explaining the growth or consolidation of a KE sector – in most cases, an integrated and multisectoral approach is needed – we can identify some specific policies contributing to this growth.

In the following paragraphs some of the most relevant strategies detected from case studies are described, together with a speculation on the basic mechanisms that are embedded in them.

#### 6.3.1 Providing incentives to persons, companies, research centres

Almost in every case it is possible to detect **one or more policies providing some kind of incentive, in form of fiscal relief, grants, services, or other provisions.**

**Abruzzo** has implemented the national Programme “Garanzia Giovani” (Youth Guarantee); aimed at addressing the severe level of youth unemployment and of NEETs in the region. The programme includes actions for education, training, and counselling services; it also entails **employment bonuses** for inter-regional and transnational mobility. Since 2014, 39,973 people have been involved in the programme at regional level, of whom 10,523 were NEETs. 4,415 NEETs have received traineeships/internships, of whom 43.6% then entered into jobs<sup>51</sup>. In addition to this is a programme that provides **incentives to companies for hiring high-skilled workers** (the ERDF 2014-20 including measures for recruiting PhDs), in a region characterised by high levels of both tertiary education, and youth unemployment.

Another kind of incentive is the provision of **funding or facilitation to projects pursuing clusterisation and innovation in specific sectors.** The ERDF 2007-13 programme in Abruzzo, managed by Abruzzo Region, has promoted the creation of ‘innovation poles’ in different sectors (e.g. automotive, health, ICT), with the goal of developing them, and creating new jobs. The innovation poles have their own organization and gather companies, research institutes and public administrations to develop and fund innovative projects. Bridging research conducted within universities with the manufacturing sector is a key goal of this strategy. So far, 14 innovation poles have been activated, consisting of 973 enterprises, and including 14 cooperation projects between firms and universities which have been funded through this strategy (Regione Abruzzo, 2017).

**Romania**<sup>52</sup> has also fostered the KE sector through different forms of incentives promoted at national level by various ministries (i.e. Ministry of Education and Research, Ministry of Public Finance, Ministry of Economics, Ministry of Research and Innovation, Ministry of Regional

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<sup>51</sup> <http://www.abruzzolavoro.eu/garanzia-giovani/risultati/> retrieved September 2017.

<sup>52</sup> In Romania there is no delegation of power at regional or local level, then the main KE-related strategies are led at national level.

Development, Public Administration and European funds). They include **grants to universities and research centres** to provide high-level education courses, research projects and internships. They also include **fiscal incentives** to reduce companies' taxes for hiring ICT and R&D employees, and for reinvesting profits in innovation projects (both processes and products) in smart specialisation sectors. Other programmes have pursued **clusterisation in specific sectors**, such as ICT, biotechnologies, nanotechnologies, etc., and technological transfer between research centres, universities and companies, promoted mostly by public bodies at regional and local level (e.g. Regional Development Agency, University of Iasi, etc).

**Berlin** officially followed, and still follows, multiple strategies to strengthen the KE as well as the transition from more traditional fields of the economy towards more future proof models. Some of these strategies aim at providing incentives. As an example, the **German “Initiative for Excellence”** is another important policy and funding source for the KE. The funding programme of the Federal Government and the Länder was announced in 2005, with the aim of strengthening universities by contributing to a diversification and internalisation of the German higher education landscape, and helping the German scientific community to gain greater visibility in the international arena.

In **Malopolska**, regional authorities encouraged higher R&D through dedicated funding. In 2015 the main project, SPIN – the Małopolska Centres of Knowledge Transfers provide consulting services for companies in the region, in line with the Regional Intelligent Specialisations (RIS) strategy. The services are subcontracted to the academic centres of knowledge transfer, which act as brokers for innovation.<sup>53</sup>

## **Mechanisms**

The mechanisms embedded within the aforementioned ‘incentive’ strategies aim at raising the **perception of opportunity** among different actors, be they persons (such as, a student or a worker), a company or a research centre, in order to encourage specific behaviours (e.g. organize a training course, hire a PhD graduate). In most of the cases, the perception of opportunity is connected to the provision of material incentives such as funds, grants or fiscal reliefs.

The policies promoting clusters between universities and companies also tap into the **perception of opportunity** that each participant can obtain from a shared effort. The benefits derive from improved cooperation (and hopefully, innovation) boosted by **repeated interactions under the ‘cluster’ scheme**. **Brokerage** (McAdam et al., 2001) is another definition of this kind of mechanism.

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<sup>53</sup> See: [www.spin.malopolska.pl](http://www.spin.malopolska.pl)

### 6.3.2 Boosting a specific KE sector or ‘the oasis strategy’

The regional government of **Mecklenburg-Vorpommern** in 2006 issued the master plan ‘Healthy economy 2010’ with the goal of **making the region Germany’s number 1 state in health economy**. The master plan was articulated into five branches (life science; health service; healthy ageing; health tourism; nourishment for health), all of them basing on already existing competences and structures with potentials for development in the future. The programme also **pooled together stakeholders from different entities** (health care system, research institutes, universities, small and medium sized companies, investors and banks) for investing in promising new firms in the health sector. The general goal of this strategy was to keep and expand sectoral competences by building up new ideas and filling gaps in the market or in research. This goal was also supported by the **constitution of the BioCon Valley GmbH, a public-private cluster and network management company** that reached 130 members of the sector. Results seem positive as Mecklenburg-Vorpommern presents a **relevant growth in the health economy sector**, both in terms of employees and gross added value, which are higher than the German average. The health economy has continually grown since 2000. Meanwhile, the net migration rate has increased from less than -5% in 2000 to +10% in 2015, showing that new migrants have chosen to live and work in the region.

#### Mechanisms

Braun has defined this kind of approach an ‘**oasis strategy**’ (Braun 2004), insofar it focuses the efforts of only the most successful, vibrant and positive developing parts of the region. To achieve this common goal, the relevant actors in the sector are convened, in order to obtain a step change in innovation and development.

### 6.3.3 ‘Building a magnet’ strategy

Perhaps a more unusual example of the ‘magnet’ strategy is the history of the **Gran Sasso Science Institute (GSSI)**, which was created in 2013 in **L’Aquila (Abruzzo)**, as a part of a post-earthquake strategy. The GSSI, after the positive assessment of its experimental phase, has been included within the group of sixth national institutes of high-level Ph.D education of Italy. The GSSI is the first attempt to reverse the development strategy of the area, **from creating opportunities for residents, to attracting resources from abroad**. The creation of the GSSI, in the very city centre of L’Aquila was intended to revitalise the city centre devastated by the earthquake through the attraction of a new, potentially vibrant population. This strategy was successful: the GSSI received **1,300 applications, of which 80% were made by foreign students** (in 2016), and qualitative research proves that the new Ph.D school is contributing to relaunching life and economic activity in the city centre, thanks to activities promoted by its students and teachers.

#### Mechanisms

The mechanisms that seem to have contributed to the success of GSSI are the high-level **reputation** of the teaching body and of the main promoter of the project, the former Minister of

Cohesion Policy in Italy, which has convinced many students to apply to the Ph.D. course; together with a sort of **idealistic enthusiasm** of being able to directly participate in the renaissance of L'Aquila.

#### 6.3.4 Building KE opportunities through urban development

Research also shows that in some cases, the growth of the KE sectors has been favoured by urban development policies directed at attracting companies and workers to settle in specific regions. For example, as shown in Box 6.4, in the city of **Iasi** the KE sector has benefited from **urban development policies and projects, funded mostly by ERDF and promoted by both regional** (e.g. Regional Development Agency, Regional Council, etc) **and local authorities** (e.g. Municipality of Iasi) **within the national strategy** for the development of **urban growth poles**. The city (the second most populated in Romania after Bucharest, and the most important centre of the North-East Region) shows relevant results in terms of KE growth if compared to the results of the entire region. Overall, urban development policies provided better environmental, cultural and leisure conditions. The ameliorated urban environment meanwhile, contributes to the shrinking of the out-migration from the area. Lower rates of out-migration are due both to a growing number of immigrants – mostly youth, coming from other parts of the country –, and to skilled residents deciding not to migrate abroad thanks to the better employment opportunities and living conditions in the city. Furthermore, **the ameliorated environmental, cultural and leisure urban conditions** also contributes to **attracting investors** in the area.

*Box 6.4: Relevance of urban conditions for attracting businesses to Iasi (North-East Region) according to interviewed business actors*

*"I opened my company first in Cluj as it was closer to the Western borders, it had a good transport infrastructure, accommodation and leisure services (e.g. hotels) and there were many German speakers (Germany was my main market at that time). As to the Iasi branch, the improved air connections and airport were relevant conditions for selecting Iasi for a branch in the North-East region. However, improvements in air connections are still needed so that Iasi can be able to fully compete with Bucharest and Cluj. Furthermore, employees do not look only at the professional career opportunities, but also at leisure and social life opportunities. Iasi offers now several opportunities for spending one's free time."* (interviewed business actor).

*"I selected Iasi also because the airport is ok, as it has been improving a lot in the last years and as there are nice areas and buildings for opening an office"* (interviewed business actor).

*"...we could find here a developed telecommunications infrastructure, an airport and good road connections, and office buildings enabling us to offer high quality work environment to our colleagues"* (interview to Oracle country leader in Investors' Guide of North-East Region, 2017).

*Source: Case study*

Urban redevelopment projects are also one of the prominent strategies fostered in **Berlin** to boost the KE sector. Such projects have accompanied Berlin all the way since the fall of the wall, as many areas once constituting brownfields (e.g. closed off military zones or unused rail infrastructures and airports) became prime locations for thriving sub-cultures that used these

locations as spaces of opportunity, and obviously for potential real-estate investments. More recently the city has put forward specific **urban development projects** (e.g. Berlin TXL, Technology Park Berlin-Adlershof) **that combine the re-use of urban areas with policies aimed at building KE hubs with a clear focus on science and technology, R&D, education, and related sectors.** These projects are also related to smart city concepts and sustainability focused or ‘green’ industries’.

In **London**, various urban policies have been promoted. The **East London Fringe Opportunity Area Planning Framework (OAPF)**, is a specific planning policy aiming at safeguarding the locations surrounding the “Tech City” digital cluster and allowing its continued growth. The development plan includes economic and regeneration based strategies. Since the 1970s, many sectors and specialisms associated with the KE have clustered in inner East London and, in particular, in the City Fringe. The Tech City initiative was launched and the Tech City Investment Organisation (TCIO) formed in 2010 to help London's emerging technology start-up industry grow – initially around a hub the Old Street area of East London and then further afield (LLDC, 2015). Another example of a knowledge cluster linked to urban development policies is the **London Knowledge Quarter** (launched 2014), which brings together over 75 large and small cultural, research, scientific, business and academic institutions, based around Euston and King’s Cross, within a one-mile radius (Knowledge Quarter, 2016).

## **Mechanisms**

These kind of policies provide a physical environment **favoring cooperation** between science and industry and boost the **perception of opportunity** for young professionals looking to work in the renovated areas. While policies such as the Queen Elizabeth Olympic Park—are crucial in attracting sectors, activities and employment related to the KE; in areas such as Tech City, the main aim of policy intervention has been to protect the already well-established highly skilled economic activities.

### **6.3.5 Branding strategy**

London’s diversity and openness constitute part of the city’s main brand. The **slogan ‘the world in one city’ has been used to win the 2012 Olympic games** and recently, following the result of the EU referendum, London’s Mayor Sadiq Khan launched the **campaign ‘#LondonIsOpen’** to show that London is still aiming to remain open for business and welcoming diversity. The Mayor has used social media and other types of publicity to reassure EU citizens in London and prospective EU citizens from the rest of Europe who may be thinking of coming to London. The message is clear: the capital is open for and welcoming to business, tourism and studying. In spite of the Mayor’s efforts, skilled workers and students may choose other cities with a reputation for openness, if London fails to maintain its reputation for diversity and openness. In addition, there are other factors working against London’s potential attractiveness to European workers including the Brexit vote, and the high cost of living in London, particularly with regard to housing and transport.

In a similar way, Berlin has used – and still uses – branding to portray itself as the new capital of Germany, (Colomb, 2012), as well as a major hotspot for the start-ups in the tech industry (“Silicon Alley”). Not only did its former mayor, Klaus Wowereit (2001-2014), describe the city as “poor but sexy” but eventually also promoted Berlin’s image as an open and diverse city with his own public coming out (“I’m gay, and that’s a good thing.”). Meanwhile, with the ‘BeBerlin’ campaign ([www.sei.berlin.de](http://www.sei.berlin.de)), the city follows a clear strategy to strengthen its positive image on a national and international level as a great place to live and as a place that is open to other cultures & languages. Therein, emphasis is put on depicting Berlin as “Digital Capital”, “Brain City” and “the place to be” for future industries. In a similar way, urban redevelopment projects specifically targeted at the KE are promoted and branded accordingly: e.g. Adlershof as leading science and technology park, or Berlin TXL as the “The Urban Tech Republic”.

Branding certainly helps cities profiling themselves in the perception of KE workers, investors and others. However, if London – or Berlin for that matter – fails to maintain its reputation for diversity and openness, companies as well as high skilled labour force might move to alternative locations. In addition, the rising cost of living in London, may also negatively impact the attractiveness of the city to highly skilled migrants. Similar trends are seen in Berlin; with some fearing further negative impacts and trends due to rising prices.

## **Mechanisms**

Place branding aims to affect the perceptions of a place and position it favourably in the minds of the target groups. Place branding can even be considered as a “governance strategy for projecting images and managing perceptions about places” (Braun, Eshuis, & Klijn, 2014, p. 64).

### **6.3.6 Selective migration and diaspora strategies**

**London, and more generally the UK** as a whole, demonstrate very different approaches towards skilled migration. At national level, **selective policies have steered migration flows** from non-EU countries, paying attention to attract high-skilled students and workers. However, migration policies have become more and more restrictive since 2010. The Brexit referendum in 2016 has introduced an important **factor of uncertainty** which is envisaged to impact mainly on the availability of high-skilled workers for the London economy, and seems having already **altered the general atmosphere and attitude of EU workers in London**. Sectors highly dependent on EU and non-EU migrants, such as health care, could suffer major consequences; yet, even more drastic shifts are expected in key sectors such as finance, due to the possible relocation of banks and financial institutions to other EU countries.

**Romania** seems to be the main case in which we can detect attempts of **exploiting diaspora**, providing financial incentives for non-agricultural businesses in urban areas run by Romanian emigrants. However, the policy has been recently promoted and no results can be registered so far.



*Box 6.5: Diaspora Start-Up Programme in Romania*

The investment potential of the Romanian Diaspora has recently entered the public policy agenda of Romanian authorities. Within the *2014-2020 Human Resources programme*, a specific measure is dedicated to attracting investments from emigrant Romanian entrepreneurs: *Diaspora start-up programme*.

*Diaspora Start-up programme*, launched in 2016 and managed by the Romanian Ministry of External Affairs, aims to incentivise Romanian entrepreneurs abroad to invest in Romania. The programme targets all Romanian regions, except for Bucharest-Ilfov. The programme receives 30,000,000 euro from the 2014-2020 ESF resources. It finances the creation of innovative and non-agricultural enterprises in urban areas of Romania. It targets specifically Romanian people emigrated abroad for at least 1 year in the last 3 years that have a previous entrepreneurship experience abroad, a specific work experience and professional training in the area of investment. Both entrepreneurs and the created enterprises have to be resident in Romania.

The expected results of the programme are: 3,000 trained people in 2017; 300 small and medium enterprises created in 2017; over 600 new working places created in 2018.

The programme has undergone several delays due to overall delays in the implementation of the 2014-2020 ESF Human capital programme that funds it. 32 projects amounting to over 76 million lei have just been approved within the Diaspora Start-up programme. Most of the selected projects target Romanian emigrants from Italy, Greece and Spain. Most of the **interviews** with associations participating/interested in the programme reveal that there is a high demand of Romanian emigrants for support to open businesses in Romania. The pre-existence of a potential demand certainly contributes to the success of the programme in attracting investors. However, the capacity of the programme to attract emigrant investors in knowledge economy is unclear. While the design features of the programme (i.e. selection criteria) specifically target investments in KE, case study interviews show that the pre-existence demand for business support comes mainly from Romanians active in sectors with low added value (i.e. constructions, agriculture, etc).

*Source: case study*

In Italy, the **national programme of tax relief for reversing the ‘brain drain’** was intended to provide personal incentives to adopt a different behaviour (to consider working in Italy instead of abroad). However, no data are available so far on the number of people taking up this provision.

*Box 6.6: The national programme of tax relief for reversing the ‘brain drain’ in Italy*

The only programme specifically addressing the “brain gain” is an initiative promoted by the Ministry of Economy and Finance, with the publication of a law (law number 238/2010) which established a special regime for the return of workers abroad. The “brain gain” provision established a favourable tax regime (with a reduction of the tax base by 70-80%) for workers with executive functions, those with high-level professional qualifications or specialist skills, EU citizens with a university degree who have worked abroad for two years or more, or for EU citizens who have studied abroad achieving a university degree or a post-lauream degree. This fiscal provision was renewed in 2016 for another four years; then, in 2017 the budget law made this fiscal arrangement permanent. In 2011, 3,838 workers benefitted from the regime, of whom 59% were women<sup>54</sup>. More recent data on the results achieved are not yet available.

*Source: case study*

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<sup>54</sup> Source: Il Sole 24 Ore (2013).

## Mechanisms

The perception of opportunity is the mechanism embedded within diaspora strategies.

### 6.4 Context Features affecting high skilled young people decisions on where to live

Interviews to high skilled students, workers and researchers conducted in the regional case studies provided additional information on what factors affect the decision on the place where to live, study and work. Box 6.7 illustrates the main reasons mentioned by the high-skilled students, researchers and workers interviewed in the case studies for choosing another place to live.

While it comes as no surprise that Berlin and London (the two exemplar cases of highly competitive and KE-based regions in the classification proposed by the present study) are among the most attractive cities for young and high-skilled migrants, also the other regions show some context features that attract these migrants or favour their return (as in the Romanian or Mecklenburg-Vorpommern cases): *"Certainly, Mecklenburg-Vorpommern is characterised by the weaker economic conditions – compared to those in Berlin, Hamburg, Malmö or Copenhagen – that might have a detrimental effect, especially in regards to the attraction for highly qualified professionals. Nevertheless, Mecklenburg Vorpommern scores thanks to the combination of excellent research infrastructure and its special natural beauty."* (Projekt Manager PR of BioCon Valley; Mecklenburg-Vorpommern case)

**Both Berlin and London possess a 'KE endowment' characterised by high levels of connectivity and accessibility** (though crippled in the case of Berlin and its airport still under construction); very close spatial proximity among companies, excellent universities and research centres; robust physical and digital infrastructures; and a good provision of educational, cultural, leisure and environmental assets.

The most attractive city is London. Characterized by sustained economic growth, substantially resilient to the economic crisis, **London** attained its KE resources thanks to the presence of some of the top-30 universities in the world, the use of English as a mother tongue, the **highest rates of employment for skilled people** (41.8% of active population was employed in science and technology, compared to 31.5% at EU28 level), a **general climate favourable to career opportunities** (even though, highly competitive), and its **multicultural environment**. Although London is an expensive city in global terms, studying in London is considered to be good value for money and a good investment. Moreover, compared to other major competitor cities for international students such as New York and Melbourne, the costs of studying in London are quite comparable. Crucially, since one can do a Master's Degree in a year in the UK (instead of longer somewhere else), this compressed time for post-graduate study is also seen as a way of saving study costs. As a result, the costs of studying in London are both a pull and push factor. The fact that London has one of the largest and most diverse clusters of universities

and HE colleges in the world means that students can choose from an extremely wide range of both academic and vocational courses, enhancing London's appeal to international students. To these one can add the widespread use of the English language as a second language which means that international students are more likely to have the necessary language skills.

**Berlin** presents a more recent history of inward migration<sup>55</sup>, but shares with London some characteristics that explain the attractiveness of the city for the high-skilled students and workers. The excellence of the scientific landscape and universities are among them, together with a **perception of openness and multiculturalism** of the city, the good quality of life, the international environment in the arts and culture, and a welcome culture that includes low administrative burdens for people willing to live here. Different from London, Berlin still has a **low cost of living** which explains its attractiveness for young people. However, this favourable condition could shrink in the future, as living costs are now rising. Urban redevelopment policies have been a characteristic of Berlin since the fall of the Wall, as many formerly closed off areas – stretching through the very centre of the city – became prime locations for urban development, real-estate investments, but also thriving sub-cultures that used these locations as spaces of opportunity. The availability and the need to redevelop these areas are one of the core motivations for coupling the KE policies with urban development policies.

The '**KE endowment**' which characterises the two metropolitan areas (Espo, 2014 p.11) of London and Berlin **will not be easily replicated by other regions**. However, **the analysis shows a more nuanced range of opportunities** for European regions to build and exploit the KE potential. The common features of these stories lie in a **careful detection of territorial resources** as a basis for setting KE strategies and, in the **availability of funding** to support the development strategies.

These cities' 'branding' policies have been based on this endowment to mainstream the perception of openness and diversity of the city.

In the other regions, although to a much lower extent compared to London and Berlin, some of the cities (e.g. Iasi and Krakovia) also show an increasing attractiveness for high skilled migrants thanks to improved living conditions, better business and cultural/research climate, as well as low accommodation and living costs.

The **Mecklenburg-Vorpommern** regional strategy – to become Germany's no.1 state in the health economy – has been shaped by geographical characteristics, socio-economic resources, and recent policies. As a peripheral area, it is characterized by low population density, a prevalent **agricultural economy** and by beautiful **natural landscapes**, which explain the **flourishing of a series of facilities for well-being**. Moreover, the region benefits from good quality universities and research centres, particularly in the field of **health and biotechnology**. The Region had high rates of outmigration and, consequently, an **overall**

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<sup>55</sup> The crude rate of net migration per 1,000 inhabitants has reached 13.2 in 2012-15, compared to 5.2 in London in the same period.

**ageing of resident population**<sup>56</sup>. In more recent years though, its location close to the metropolises of Hamburg and Szczecin, its **low housing costs** and **excellent connections** made Mecklenburg-Vorpommern a place chosen by commuters, retirees and others.

**Malopolska**, with the UNESCO world heritage Krakow as capital, boosted its KE strategy leveraging mainly the **low production costs** and a business friendly environment, which explains the high level of FDI in the area and the localization of a **number of outsourced activities from multinational companies**. A number of outsourced activities have been located here thanks to the availability of a **very well trained work force**<sup>57</sup>, 33 universities, good **transport connections**, and good living conditions combined with a strong endowment of **cultural and touristic resources**.

**Abruzzo** is an example of place-based strategy in a remote, rural context, presenting one of Europe's largest protected environmental areas, **low connections** with main Italian cities, small and sparsely populated urban centres and a history of **severe outmigration**. The creation of the **Gran Sasso Science Institute** leveraged on the existence of one of the world's top 4 laboratories of **particle physics** (housed inside a tunnel formerly built as part of a freeway) and various university research-groups, to create a centre of excellence attracting students and teachers from Italy and abroad.

The growth of the KE sector in **North-East Romania** – even though limited if compared to the trends in other parts of the Country (and in particular of the capital, Bucharest) – also seem to be based on specific local elements. The **low wages and the availability of trained workforce** in KE-related areas, together with **universities and recently renovated transport connections** (e.g. the international airport of Iasi) have contributed to the concentration of a number of outsourced activities from multinationals (mainly in the ICT sector) in Iasi. However, the high level of corruption and the low quality of the public administration are reasons why brain drain is still present in areas such as the medical sector.

*Box 6.7: How skilled students and workers choose their study/work destination*

**London** - *"I attended two master degrees in London, always working full time. I chose to continue my post-graduate studies in London because I knew I would have met people from all around the world, the best teachers and university courses with high reputation, all the possibilities for culture and amusements and also the chance to find a job. It is a very competitive city, but yet it is really an unmissable opportunity, even if you will then choose to work, live or study elsewhere at some point in your life".* (Irish PhD candidate at Gran Sasso Science Institute, with academic experience in London).

**London** - *"People like the fact that the culture in London is open and welcoming and that they can meet people for all sorts of backgrounds and countries and that London is so vibrant...If you are a Chinese student coming from a particular region, you will meet somebody in London who speaks the same dialect, so students can always find others with something in common...So living and studying in London is extremely attractive to many international students who see this as opening*

<sup>56</sup> The crude rate of net migration and of population change was the lowest among the six regions considered in this study (respectively, -5.0 and -7.8 as average in the period 2004-2007: see Table 6.1

<sup>57</sup> In 2012, students in tertiary education – ISCED 5-6 - were the 89% on the total of the population aged 20-24 years, compared to 64.2 at EU 27 level in the same year (source: Eurostat).

*their eyes to a new way of life but in a place which is naturally multicultural and naturally open".* (policy maker, London)

**London** - *"However obscure your subject, you can find someone who teaches it in London. This is very significant for foreign students".* (policy maker, London)

**Berlin** - *"In Berlin there are a lot of academic positions (...) and it offers a good platform to conduct my research. (...) I know a lot of people (...) friends and colleagues (that) are also trying to come to Berlin, because it is a nice city (in terms of) social life, it is not so expensive for example compared to London. (...) There are lot of institutions, programs, opportunities ... I know a lot of people that found scholarships and institutions thanks to networks and the good conditions. (...) I feel very comfortable here –you feel like you belong here. It feels more warm compared to other cities. It feels better than many other cities in Europe".* (KE worker from Turkey).

**Berlin** - *"Coming to Berlin was due to work... the most important thing was to find a job in my field. But looking at Berlin in itself, I had imagined life in Berlin being international – an intercultural society – where to live without necessarily need to know the German language. (...) ...all the embassies and international institutions are here. (...) a lot of institutions that are good for my career (working in my field)." (KE worker and student from Ghana)*

**Abruzzo** - *"I found here a very active research field, young people, a nice group. Aquila is a difficult place to live but for a doctorate is not bad, it also allows to work, it is quiet, it has the advantages of a small town, is a little provincial but is very nice. The actual time for study is greater. The conditions for studying here are great, there are many foreign teachers willing to come here and make a very nice lesson, a very nice atmosphere. There is so much enthusiasm. I could had choose another place where to finish my post-graduate studies, but I choose l'Aquila because I would like to be part of a bet on the future. And I love mountain hiking!"* (PhD candidate).

**Abruzzo** - *"After my master degrees in London I applied at Gran Sasso Science Institute in 2013 as I liked the idea to be involved in the rebuilding the knowledge economy after earthquake. There are so many energy involved. This is a new institution, and I thought they should be very focused and pressed to success; the economic treatment was also good. What I mostly appreciate was to participate in the building of the library. There wasn't the library when we arrived, the Institute ordered some books and asked us (the students) to decide which books we needed, every few months they ask us which kind of and also we helped to build the catalogue, it is a work in progress. Also, there is a lot of thought in preparing the course, and there is an amazing open space where to study and discuss together. Finally, there is the lifestyle, the city were very welcoming with the first groups of students but there were only a couple of bars open. Now there are a few place to go, is good to see how the place have changed"* (Irish Phd student at GSSI)

**Malopolska** - *"I think that this place has a good education system and the possibility to find a job after graduation. Kraków has a lot of opportunities for young professionals as the city is developing rapidly. There are so many business opportunities and with multinational corporations opening their branches in Kraków providing internships, part-time and full-time job opportunities. While pursuing my master's I am also engaged in a part-time job at State Street bank which allows me to pursue my master's degree and gain work experience as well. I like my job and would like to continue as a full-time employee after graduation. (...) It was a different motivation altogether as I was not only curious about studying abroad and gain international educational experience but also learning a foreign language that was very similar to my native language. I am happy with my choice as today I can't imagine what my life would have been otherwise."* (Ukrainian student in Kraków).

**Malopolska** - *"I decided to join the Erasmus program in Kraków because of many reasons: first of all, I am fascinated by this country and I really wanted to discover its potentiality, I know that its economy is increasing and I think in the next years will be one of the most attractive country within EU. (...) Cracow is an ideal city where you can settle, both the historical-cultural heritage and nightlife are perfect for students like us, it is little, cozy and charming and what surprises me is the fact that is super safe. I do not like people that answer 'I came to Kraków because is cheap', I really do not (...) I don't think career opportunities are higher after obtaining a diploma in this university, but still as a foreigner I can study and learn in another language, English, learning experience due to the fact that I am living in another unknown country and for sure this is a good thing for my CV. Salaries are lower here but still if we compare the PPP between Italy and Poland I am pretty sure that you*

*can have an higher standard of life here in Poland rather than Italy. As I said it is a perfect place to live, especially for young people, at least Kraków” (Italian student in Kraków).*

**North-Est Romania** - *“I left Romania in 2003 and went to Italy where I worked for Pirelli. I left Romania as (...) I earned around 300 euro/month with two jobs. You could not make any future plan with this amount of money. When I left, there was no the possibility to have a bank loan for buying a house and there were no real shops. I had the opportunity to work for Pirelli and I accepted. I came back to Romania in 2007 as the image of Romanians in Italy got worse and as the work conditions in my company also got worst. After a while, I left Romania again for a job opportunity in Norway. I worked in the oil field. I was an engineer on maritime oil platforms. I actually designed them. I decided to leave Norway when the oil price collapsed. I was there for obtaining performances in my field but there were not the economic conditions for doing it. I benefited of a public grant for creating start-ups and I created my own IT company in Iasi. Iasi is my native city. I chose Iasi as all my family is here and it is a good city to live in. The IT industry has been investing a lot in Iasi and has been publicizing it both in Romania and abroad. The city has been improving a lot in the last years. It has a very good digital infrastructure and with a good digital connect I can work for any company in the world without having to leave home. In the end weather is better in Iasi than in Norway and my family and friends are here. Life is not all about business and work and Iasi allows me to have a good balance between work and life. Now there are a lot of young people that come from other Romanian cities to Iasi.” (North-East businessman ex emigrant in Italy and Norway).*

Context features, and in particular quality of life, also impact upon people’s decisions to leave their home country/region.

It is in particular the low quality of social (i.e. education, health, welfare), transport. ICT and environmental infrastructure that influences people’s decisions to look for better living conditions elsewhere, as testified by various interviewers in Poland and Romania (see Box 6.8).

The quality of public administration (e.g. level of corruption, level of administrative burden) is another factor taken into consideration in high skilled people’s decision of living in a specific place. For instance, interviewed high skilled Greek and Romanian emigrants underline that the high level of corruption and administrative burden in their home countries are two reasons that made them leave their country or not considering returning to it (see Box 6.8).

The quality and dynamism of the labour market has a relevant role in people’s decision to remain/leave from their country/city. For instance, the quality of both the work environment and job is one of the most relevant factors impacting upon the decision of medicine students from the North-East region to leave after graduation.<sup>58</sup> Not only the quality, but also the dynamism of the labour market influences high skilled people’s decision to leave/return from their countries, as shown in Box 6.8.

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<sup>58</sup> Botezat A and Botezat D (2017) Socio-economic drivers of migration intentions among Romanian medical students: what is the role of the intergenerational transfer of the medical profession? (unpublished)



Box 6.8: Reasons for leaving the home country

**Romania** - "I have been living in Germany for 8 years. I left Romania for personal reasons as I got married with a German man. My husband did not want to move in Romania as life quality is better in Germany. I do not consider going back in Romania as my life is here now. My kids are going to school here. When thinking about what public authorities can do to attract back high skilled (young) emigrants, the first thing that comes to my mind is the improvement in social infrastructure. High skilled people are not interested only in the job opportunity and wage, but also in the social services (e.g. health, education, social benefits for their familiars, etc). For getting them back in Romania investments in businesses and labour market are not sufficient. Furthermore, they also need support for easing their transfer from abroad to Romania (e.g. website where jobs in Romania are posted, etc)." (North-East emigrant in Germany)

**Romania** - "I left Romania in 2012 after graduating from high school. Since then I have been living in Denmark. I left Romania for studying in Denmark as the education system is better than the Romanian one, namely the quality of universities is higher, teaching methods are updated respond to the needs of the labour market. It has a developed economy, high quality jobs, high wages, and high quality of life, especially of the social system. These are reasons that make you leave. However, I am thinking of getting back home. I am one of the few Romanian emigrants that think that Romania still has a chance to be a developed country." (Romanian emigrant in Denmark)

**Romania** - "The reactions of the Romanian emigrants that are the members of our association or with whom I get in touch are mixed. Some of them, especially those with a lower level of education, would go back home even tomorrow if they had the certainty that they could find a good job. Those with a higher level of education are more reluctant, especially if integrated here. The high corruption level is the biggest problem that hinders their return to Romania. It's difficult that young people go back home. Those that return to Romania are those that still believe in a reborn of Romania. People that go back to Romania often or that interact often with Romanian institutions are the most sceptical ones about getting back to Romania. I left Romania 10 years ago for personal reasons. Since then I have been living in Belgium. I do not plan to get back to Romania as it would be difficult to convince my family to do it. What is going on in Romania is terrible. The corruption level is huge." (Romanian emigrant in Belgium)

**London** - 'London is a difficult city; it is great in terms of job opportunities but not for the quality of life. The richness of London relies on migrants' willingness to work in low paid jobs or start again their career from zero. The real problem is that while you can easily find an entry level job, then the competition is really high because you are competing with the entire world'. (Highly-skilled Italian migrant working in Education).

**London** - 'The result of the referendum affected me but not that much, in the sense that I am happy to relocate as soon as I find another opportunity elsewhere. I am thinking that I should check for job opportunity elsewhere more actively because London is losing appeal'. (Highly-skilled Spanish migrant working in Education)

**Abruzzo** - I came in Abruzzo from Greece at the end of the Nineties, for a 4-years research position within the Laboratories of Gran Sasso. It seemed to me an interesting place, where a variety of experts in various scientific fields were working together. As an engineer, I had the competencies required from the position, but I chose to apply also because my brother was already living in L'Aquila. When the research position came to term, I was in search for a more stable position. I first tried to achieve a permanent teaching position in a Greek University, but after a two-year selective procedure, the position was cancelled due to administrative problems. Then, I started working in California, at Netflix. I chose California mostly for its career opportunities: it is very easy to find a position adapt to your competencies, in a quick and not burdensome way. Even if you make a wrong choice, you can have a second opportunity. In other places, a wrong choice risk to condition your career forever. (high-skilled Greek engineer, now working at Netflix)

**Małopolska** - "People from Małopolska are very much bound with the region. They have their families, relatives, memories here.. This is all very important. They try not to leave. On the other hand we see the change in a migratory behavior of the young, who are very mobile... They would leave for work anywhere in Poland (like Wrocław) or in the world as long as these spots offer good living conditions and their life situation would improve." (policy maker in charge of designing the regional policies).

## 6.5 Summing up

As expected, the Case Studies described above present some key points in helping to understand patterns and opportunities to attract or retain high skilled workforce and foster KE-sectors.

- All cases show that KE-related strategies have been based on **existing assets and resources** (and sometimes weaknesses) of the territories analysed. This means that a 'one-size-fits-all' strategy does not exist; nor is it recommendable to look for one. A range of opportunities can be elaborated depending on the degree of resources already available or potentially exploitable at different locations.
- London and Berlin hold **an exceptional 'KE endowment'** acting as a pull factor for high-skilled migrants. The two cities provide outstanding opportunities of education and work. Despite their remarkable position, both cities present **explicit policies to steer migration flows and fuel strategic economic sectors**, or (as in the case of Berlin), to provide for large urban redevelopment projects. The CS's also show London's and Berlin's remarkable position can be challenged by modifications in the political or economic environment: e.g. Brexit in London or rising housing costs in Berlin.
- In all the selected case studies, **well-recognized universities and research centres represent a common contextual factor for the development of KE-related strategies**, together with **well-trained workforce** in related KE sectors; educational and training policies appear to be **complementary to grow and steer KE-related knowledge sectors**.
- **Good transport and ICT connections** and **good environmental and living conditions** are also among the most common factors. They can represent a pre-existing asset or a goal to be achieved by purposive policies and investments: e.g. both in the North-East Romanian Region and in Malopolska, large amounts of EU funds have been dedicated to building basic infrastructures (airports, highways, etc.).
- In case of very remote areas (e.g. Abruzzo) development strategies can be based on the **exploitation of some 'unique' resource of the territory**, or by building a fascinating 'pole' to attract people from abroad.
- Among the mechanisms underpinning the different strategies identified, the most common is to provide **material rewards** (i.e. funding and other incentives) and/or foster the **perception of opportunity** of different actors to invest in specific activities (such as, innovation of products and processes).
- In most cases, KE strategies have aimed at **fostering cooperation among actors of different types** (especially universities and SMEs). Cooperation is mainly fostered through material incentives (funds) and sometimes providing technical assistance, networking or the creation of formal structures (the 'innovation poles' in Abruzzo) which



foster repeated interactions among actors. In Berlin and London, cooperation and innovation are also expected as a direct consequence of the **physical concentration** of innovative companies; which necessitates the availability of urban redevelopment areas and the coupling of urban and KE development policies.

- Institutional capacity is a crucial aspect in all the case studies. All show the presence of institutions and stakeholders at the national and/or local level able to **develop a growth strategy** based on the individuation and valorization of existing assets and on **multilevel institutional cooperation**. In many cases the creation of **regional development agencies or other bodies at local level** (e.g. clusters, public-private organisations, etc) has further supported the implementation of such strategies. For instance, in the North-East region the Regional Development Agency had a relevant role in both the promotion of urban development strategies, in collaboration with local public institutions, and the creation of clusters for incentivising the collaboration between enterprises and universities. In the Mecklenburg-Vorpommern region, the creation of BioCon Valley, a public-private body, was relevant for keeping and expanding competences in the region by supporting new ideas to fill existing gaps in research or business opportunities and for incentivising cooperation among companies, research institutes and universities.

Table 6.2: Types of KE-related policies, and the resources of the context which motivate the policy

| Type of policy  | Case                        | Programmes/Policy (examples from case studies)   | Resources of the context                    |  |   |   |                                  |                                  |                                   |                    |
|---|-----------------------------|--|---|--|---|---|----------------------------------|----------------------------------|-----------------------------------|--------------------|
|   |                             |  | Top level universities and research centres | Qualified workforce matching the needs of KE employers | Firms (potentially) active in specific KE-related domains | Availability of urban redevelopment sites | Best use of endogenous resources | Relevant inward migration trends | Relevant outward migration trends | Youth unemployment |
| <b>Incentives</b><br><br><i>Mechanism: perception of opportunity to invest, hire, cooperate; repeated interactions; brokerage</i>   | Abruzzo (IT)                | Youth Guarantee Programme  |   |  |   |   |                                  |                                  |                                   | •                  |
|   |                             | Incentives to companies for hiring high-skilled workers  |   | •  | •   |   |                                  |                                  |                                   |                    |
|   |                             | Innovation poles between companies and research institutes/universities  | •   |  | •   |   |                                  |                                  |                                   |                    |
|   | North-East Region (RO)      | Fiscal incentives to reduce companies' taxes for hiring ICT and R&D employees, and for reinvesting profits in innovation projects  |   | •  | •   |   |                                  |                                  |                                   |                    |
|   |                             | Grants to universities and research centers to provide high-level education courses  | •   | •  | •   |   |                                  |                                  |                                   |                    |
|   |                             | Clusterization in specific sectors, such as ICT, biotechnologies, nanotechnologies, etc., and technological transfer between research centres, universities and companies  | •   |  | •   |   |                                  |                                  |                                   |                    |
|   | Berlin (DE)                 | The German "Initiative for Excellence" (2005) contributing to a diversification of the German higher education landscape, and helping the German scientific community to gain greater visibility in the international arena.                 | •   | •  |   |   |                                  |                                  |                                   |                    |
|   |                             | "Einstein Center Digital Future" focused on digital infrastructure, methods and algorithms, digital industry and services, digital society and humanities, as well as digital health, gathering universities, research centres and companies | •   | •  | •   |   |                                  |                                  |                                   |                    |
|   | Malopolska (PL)             | Malopolska Centres of Knowledge Transfer   | •   |  | •   |   |                                  |                                  |                                   |                    |
| <b>Boost a specific KE sector or 'the oasis strategy'</b><br><br><i>Mechanism: perception of opportunity to invest, hire, cooperate; repeated interactions; brokerage</i> | Mecklenburg-Vorpommern (DE) | Master plan 'Healthy economy 2010'   |   |  | •   |   | •                                |                                  |                                   |                    |

| Type of policy   | Case                   | Programmes/Policy (examples from case studies)   | Resources of the context                    |  |   |   |                                  |                                  |                                   |                    |
|--|------------------------|--|---|--|---|---|----------------------------------|----------------------------------|-----------------------------------|--------------------|
|  |                        |  | Top level universities and research centres | Qualified workforce matching the needs of KE employers | Firms (potentially) active in specific KE-related domains | Availability of urban redevelopment sites | Best use of endogenous resources | Relevant inward migration trends | Relevant outward migration trends | Youth unemployment |
| <b>Building a magnet</b><br><br><i>Mechanisms: reputation, idealistic enthusiasm</i>   | Abruzzo (IT)           | Creation of the PHD course Gran Sasso Science Institute  |   |  |   |   | •                                |                                  |                                   |                    |
| <b>Building KE opportunities through urban development</b><br><br><i>Mechanism: perception of opportunity to invest, and cooperate; repeated interactions; brokerage</i> | Berlin (DE)            | Urban development projects (such as, Berlin TXL and the Technology Park Berlin-Adlershof) that combine the re-use of urban areas with policies aimed at building KE hubs with a clear focus on science and technology, R&D, education, and related sectors | •   |  | •   | •   | •                                | •                                |                                   |                    |
|  | North-East Region (RO) | Integrated urban development plan in Iasi  | •   | •  | •   |   |                                  |                                  |                                   |                    |
|  | London (UK)            | East London Fringe Opportunity Area Planning Framework (OAPF), London Knowledge Quarter  |   |  |   | •   |                                  |                                  | •                                 |                    |
| <b>Branding</b><br><br><i>Mechanism: place branding</i>  | London (UK)            | London slogan 'the world in one city' used to win the 2012 Olympic games, Campaign #LondonIsOpen   |   |  |   |   |                                  | •                                |                                   |                    |
| <b>Migration policies and diaspora</b><br><br><i>Mechanism: perception of opportunity</i>  | London (UK)            | Selective policies to steer migration flows in London  |   |  |   |   |                                  | •                                |                                   |                    |
|  | North-East Region (RO) | Financial incentives and support for non-agricultural businesses in urban areas to Romanian emigrants  |   |  |   |   |                                  |                                  | •                                 |                    |
|  | Italy                  | National programme of tax relief for reversing the 'brain drain'   |   |  |   |   |                                  |                                  | •                                 |                    |



## 7 Conclusions and lessons learned for Cohesion policy

In the aftermath of the economic and financial crisis of 2008-09 and ensuing Eurozone crisis, the geography of employment dynamics – namely the unbalanced spatial distribution of employment opportunities across and within countries and regions – are having significant territorial impacts with important implications for future EU CPs. Empirical results show that while capital cities and major metropolitan regions are increasingly receiving highly skilled migrants and are experiencing growth in their GDP per capita through knowledge inflows and local knowledge creation, less developed and peripheral regions and cities face high out migration flows and depopulation, brain drain, and impoverishment. Several factors are behind these trends, e.g. the institutional setting and path dependencies, together with the degree of population diversity, and the quality, availability and ease of access of educational, social, cultural, and health services and infrastructures; all factors largely concentrated in cities and metropolitan areas.

These imbalances are fuelling political turbulence, as marginalised groups' feelings of being excluded, especially in peripheral and rural regions, are behind the insurgence of anti-democratic and anti-migrants trends and populism, with strong negative effects on cohesion and stability in Europe. In addition, several new challenges faced by European regions (ageing, immigration, security, energy and climate change, technological change, globalisation and urbanisation), involve different risks and opportunities. These challenges might further increase the already growing territorial divide in the EU and have already triggered the debate on how CP could address them with the goal of recalibrating uneven development in order to avoid later social and economic costs.

### 7.1 Main KE and employment territorial trends and challenges

As underlined in the future scenarios discussion, uneven economic development in the KE might feed into a marked differentiation of mobility patterns across Europe which could further accentuate and aggravate territorial and socio-economic imbalances and disparities.

Therefore, new attention to strategies which could support more balanced and sustainable regional growth in the medium and long term is urgently needed. The following challenges – resulting from the current trends and future perspectives highlighted in the previous chapters – are particularly relevant.

***Growing role of the KE and selective migration patterns*** – Since 2004, European regions have experienced an increase in labour mobility: EU citizens living in another MS now represent more than 10% of the working-age population in many States (e.g. Romania, Portugal, Lithuania, Latvia, Croatia) and this is affecting socio-economic and demographic conditions in both sending and receiving regions. Large parts of Eastern European sending regions (especially in the Baltic States, Bulgaria, Romania, Slovakia, Croatia) are experiencing demographic decline, although demographic growth can be observed around capital and metropolitan cities. In Western Europe, regional demographic decline is observable in southern

Italy, the eastern Iberian Peninsula, inner parts of France and northern Scandinavia, but also in Eastern Germany.

Young, highly skilled, and specialised workers generally show higher mobility rates than other groups in the population, and are also more likely to move to regions with a higher level of GDP and incidence of KE as well as from rural to urban regions, in particular to capitals. On average, dynamic urban centres report high positive net migration, with capital cities showing the highest net migration rate (43.41% in the 2012-2015 period). On the contrary, rural and intermediate regions show a much lower mobility rate, with the rate being negative for young people. The economic crisis has increased the out-migration from rural and high unemployment areas, particularly among highly skilled young people, thus reducing the growth potential of these areas, in the absence of targeted policies. The crisis also appears to have changed the strength of the relationship between the KE and migration rates, as regions with a more developed KE experienced higher net migration rates following the crisis. Highly skilled migrants have been shown to contribute positively to their receiving region, but emigration might negatively affect sending regions<sup>59</sup>, exacerbating the structural employment deficit, which can lead to a reduction in available skills and 'brain drain', unless specific diaspora policies are implemented to facilitate the creation of knowledge networks and transfer, human capital investments, and return migration.

At the same time, Europe is also facing the largest migration inflow from non-EU countries since World War II, which is expected to continue in the future as people escape from armed conflicts, extreme poverty, lack of human rights, and climate change. The humanitarian crisis is especially affecting the external border of EU countries/regions and is triggering divergences across MSs on how to deal with border controls, humanitarian aid, and security challenges. Although the benefits of intra-EU and cross-border mobility are well documented, and great progress has been achieved towards removing the remaining legal, administrative and other barriers, intra-EU mobility is still limited compared to non EU countries. In addition, recent developments (e.g. Brexit and measures to limit the Schengen Agreement on free movement) are likely to change the geographical patterns of labour mobility in the future, affecting future scenarios, as illustrated in chapter 4.

**KE spatial patterns and territorial imbalances.** The economic and financial crisis of 2008-09 and the Eurozone crisis have accentuated territorial socio-economic imbalances. While Northern and Central European regions have shown greater resilience, the deterioration of economic conditions, employment and income levels in the Southern EU countries, the Baltic States, and Ireland has been significant. At the same time, existing evidence indicates that, starting from the mid-1990s, the KE and innovation-related activities grew in volume especially

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<sup>59</sup> See Vasile V. (2014) Labour Mobility Impact on Sending Countries. Romanian EU Workers Case Study. *Procedia Economics and Finance*. 8:737-746; Dobson, J R. (2009) Labour mobility and migration within the EU following the 2004 Central and East European enlargement, *Employee Relations*. 31:121 138; Thaut L (2009) EU Integration & Emigration Consequences: The Case of Lithuania. *International Migration*. 47(1): 191-233

in more developed regions, with high investment in R&D activities and higher levels of employment in R&D sectors, as well as in culture and creative industries, environment and ICT infrastructures. There seems to be a positive correlation between KE and agglomeration, whereby the greater the KE agglomeration and educational infrastructure, the greater the potential for innovation, knowledge spillovers and economic growth. This is very important, as Europe's future economic dynamism is closely connected to its capacity to adopt new technologies and spearhead innovations. Therefore, the expansion of the KE across Europe has supported the growth of highly skilled employment with high wages, as well as spillover effects in other sectors and occupations not directly related to it. However, the KE has had polarising effects across the EU, with a large share of activities mainly concentrated in technologically more advanced regions where sufficient agglomerations of knowledge activities exist.

KE sectors tend to locate in urbanised areas, offering high levels of social capital, networks, technology, agglomeration of knowledge and good physical accessibility. Urban areas have become the growth catalysts and attract investments, particularly in the old MSs. Urban and KE centres are also increasingly attractive to young and highly skilled migrants (who, however, in some cases are employed with precarious working conditions), with less developed and rural areas being disadvantaged, often lacking not only the physical infrastructure to support the dissemination of knowledge and exploit the potential spillover effects from urban areas, but also lacking high skilled human capital and the cluster structure for innovation. Indeed, less developed and transition regions spend less on R&D, produce fewer patents, and have lower percentages of people with a higher education qualification than more developed ESPON partner regions.

The challenges confronting urban areas – as opposed to rural and peripheral areas – are thus increasingly diverging. In many parts of Europe, polarising trends lead to enhanced population and economic concentrations in urban and especially capital cities and metropolitan areas, as well as declining population and socio-economic conditions in rural, peripheral and high unemployment areas. However, a significant number of cities (especially those of medium size) also experience shrinkage and economic decline. In the future, a more fragmented urban landscape is likely to unfold, with clusters of robust expansion together with areas of stagnant or declining population. While capital cities like Berlin, London, Oslo, Paris, and Stockholm have growing populations, many other cities, especially in convergence regions in Southern and Eastern countries, as well as marginal regions, are already experiencing population decline. In marginal areas, certain services – such as schools, health care, transportation or internet access – risk falling below the minimum level needed to make these regions attractive for young people, activating a vicious circle of population and socio-economic decline. In these areas a long-term inclusive growth policy is needed to avoid the resurgence of anti-democratic trends, as economic marginalised groups' feelings of being excluded may impact on cohesion and stability within Europe.

***Territorial connectivity and accessibility.*** Spatial proximity between different stakeholders (companies, universities and research centres, production centres, etc.) is a key factor in fostering the KE and economic development. Collaboration, trust-based networks and face-to-face communications appear to play a crucial role as carriers of knowledge spillovers and as the means of access to knowledge outside the region. Improved infrastructure endowments increase proximity, and in this way, influence expectations among entrepreneurs and forward-looking investors on the profitability of investment in RDI and other economic areas. Infrastructure endowments also facilitate the territorial spillover effects from urban areas to surrounding territories. Along these lines, several studies relate territorial ‘accessibility potential’ to labour markets, focusing on the different types of infrastructure available. Due to public capital shortages, lagging regions may in fact take too long to build the necessary infrastructure, penalising return on private investments and limiting opportunities for economic growth. Hence, diversified growth approaches have to be developed according to the specific territorial features.

Overall, aggravated disparities and inequalities bear costs for Europe’s future – as we can deduct from the protests all over Europe or from the pro- Brexit arguments by many Europeans.

## **7.2 The territorial dimension in EU Cohesion Policy and lessons learnt**

The above mentioned features of the KE and (skilled) labour mobility can accentuate territorial polarisation of growth and widen both regional disparities and territorial imbalances between regions and between urban and rural areas. This is not just the traditional segmentation of economies between countries/regions at different levels of growth and technological progress, but also a different economic performance within individual countries/regions. The increased variance in performance of local economies and labour markets necessitates **a new attention to territorial cohesion and the strategies that could support a more balanced and sustainable regional growth in the new framework generated by the KE.**

A number of key issues have been identified in the debate on the role of CP in addressing economic, social and territorial cohesion. The main ones relate to the way CP has addressed territorial cohesion; and to the long-term impact of CP. While a detailed presentation of the debate is presented in the Annex to Chapter 2, here we summarise the main arguments.

Although an implicit territorial dimension has always been on the EU agenda (Faludi, 2009), and it was included in the Amsterdam Treaty in 1997 as an additional dimension of cohesion, it is only in the late 2000s that territorial cohesion has become an explicit priority in European policy making. An important step forward was the formulation of the ‘**place-based**’ **integrated approach in the so-called Barca Report of 2009**<sup>60</sup>. A new **territorial cohesion objective was then introduced by the Lisbon Treaty**, which acknowledges that economic and social cohesion

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<sup>60</sup> Barca F (2009) An Agenda for a Reformed Cohesion Policy: A Place-based Approach to Meeting European Union Challenges and Expectations. Independent report prepared for the Commissioner for Regional Policy. Rome: Ministry of Economics and Finance.



cannot be achieved at the European level without a stronger focus on the territorial impact of EU policies. The following **2020 Territorial Agenda (TA2020)**,<sup>61</sup> agreed by MSs in 2011, further underlines the need to include a territorial cohesion focus in the Europe 2020 strategy and to mainstream the territorial dimension in EU policy making. TA 2020 identifies some key challenges for territorial development (increased exposure to globalisation, demographic changes, social and economic exclusion, climate change, and loss of biodiversity); and addresses six territorial priorities for the development of the EU. These include: to promote polycentric and balanced territorial development; to encourage integrated development in cities, rural and specific region; the territorial integration in cross-border and transnational functional regions; to ensure global competitiveness of the regions based on strong local economies; to improve territorial connectivity for individuals, communities and enterprises; and to manage and connecting ecological, landscape and cultural values of regions. In addition, the Agenda underlines that Member States and EU institutions have shared competence in contributing to territorial cohesion and therefore a shared role in the implementation of the TA2020 in compliance with the principle of subsidiarity. This obviously needs vertical and horizontal coordination between decision-making bodies at different levels and sector-related policies to secure consistency and synergy.

**Cohesion Policy and the ESI Funds** are the main tool to support multi-dimensional, place-based approaches to local development, going beyond traditional administrative boundaries, and based on cooperation between different levels of government. In the 2014-2020 programming period, the Common Provisions Regulation (CPR) supports new instruments that can be used to implement territorial strategies on the ground, linking the thematic objectives identified in the Partnership Agreements and Operational Programmes and the territorial dimension: community-led local development (CLLD)<sup>62</sup> and integrated territorial investments (ITI)<sup>63</sup>. In addition, Territorial Cooperation became the third objective of CP since the 2007-13 programming period and has been confirmed in the current period.

The CP and other EU Programmes have traditionally allocated large amounts of funding to investment in regions identified as falling behind, and in many countries and regions the ESI Funds have gradually become the main financial source for regional development. In particular, the new MSs have greatly benefited from investments co-funded by the ESI Funds.

The lack of a clear conceptualisation of territorial cohesion is, however, affecting CP and the current EU growth strategy in general, which still shows a “spatial blindness”<sup>64</sup>. In particular, it is difficult to assess whether the EU goal of territorial cohesion is either referred to as an additional EU general goal, which goes beyond social and economic cohesion, or if it can be

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<sup>61</sup> The new Territorial Agenda 2020 (TA2020) agreed by MSs at the Informal Ministerial Meeting on Territorial Cohesion of May 19, 2011.

Available at: [http://www.nweurope.eu/media/1216/territorial\\_agenda\\_2020.pdf](http://www.nweurope.eu/media/1216/territorial_agenda_2020.pdf)

<sup>62</sup> European Commission (2014a)

<sup>63</sup> [http://ec.europa.eu/regional\\_policy/it/information/publications/reports/2015/scenarios-for-integrated-territorial-investments](http://ec.europa.eu/regional_policy/it/information/publications/reports/2015/scenarios-for-integrated-territorial-investments)

<sup>64</sup> See <http://cor.europa.eu/it/events/Pages/future-cohesion-policy.aspx>

understood as an expansion of the previous goals, by encompassing and including them in a broader EU goal (Medeiros, 2016). In addition, the lack of a measurable definition of territorial cohesion makes it difficult to identify appropriate indicators to assess the effectiveness of CP in this respect.

Some contrasting evidence is also emerging from the more recent evaluation studies on the effectiveness of CP in supporting regional growth and reducing territorial disparities, although most evaluations show positive effects on regional growth. Research by Becker et al. (2013) found that investment by EU Structural Funds in target regions, on average, had a causal effect of increasing GDP per capita growth by 1.6 per cent, even though there is no evidence that this led to higher employment. Merler (2016), on the basis of a quasi-experimental approach, concludes that EU Objective 1 Convergence Funds 2007-2013 played an important role in limiting the negative effects of the crisis, especially for the euro-area periphery regions. A similar counter-cyclical role of CP Funds results from the estimates of the macro-economic models adopted in the framework of ex-post evaluation of the ERDF and Cohesion Fund 2007-13 (European Commission, 2016). According to these models, ERDF and Cohesion Funds are expected to have positive direct (via the CP investments) and indirect effects (via increased trade) in the long term<sup>65</sup>.

These contrasting results are likely to arise from the difficulty of identifying causality in the absence of appropriate data and evaluation methodologies for CP programmes. In addition, it is often difficult to pin down what factors explain the success/non-success of the implemented policies and often evaluations do not consider the role of the socio-economic and institutional/administrative context in affecting policy results. A focus on the interplay between employment policies (via KEs) and territorial cohesion, needs also to take into consideration both the short-term and the medium to long-term effects of policies and the potential heterogeneity of the effects on different territories (urban-rural imbalances) within the same region, and on different population groups (e.g. by age, gender, skills).

**Some lessons may be derived from the case studies** on how to improve the effectiveness and sustainability of CP interventions in relation to KE and employment dynamics. Many are related to the issues currently under discussion regarding the future of CP and integrated local development<sup>66</sup>. The main lessons are the following:

- **The regional and local dimensions are relevant in addressing KE and employment dynamics.** The case studies show that these issues have an important place-based nature: they are context-dependent and require interventions tailored to

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<sup>65</sup> The estimated impact averages 4.2% of GDP in cohesion countries and is small but positive in non-cohesion countries, averaging 0.4% of GDP by 2023. However, other studies show limited, uneven, or no effects (Dall'Erba and Le Gallo, 2008).

<sup>66</sup> Bachtler J, Oliveira Martins J, Wostner P and Zuber P (2017) Towards Cohesion policy 4.0: Structural Transformation and Inclusive growth. EC White Paper on the Future of Europe. Regional Studies Association Europe. Brussels

the specific assets (e.g. cultural and natural heritage; or economic, financial, infrastructural, scientific assets; or low cost of living; or cultural and creative context; or local knowledge and craftsmanship; etc). Tailoring measures implies a good knowledge of the regional context, the integration of different measures according to the local needs and the capacity to find “new” solutions when tackling new problems. For example, ESIF interventions addressing migration outflows could adopt a more pro-active approach, incentivising return migration or adopting diaspora measures to facilitate the investment from high skilled diaspora communities in local development, as well as improving connectivity and access to infrastructures and services, as well as cultural/social services ( for example, child care) to attract new families. Interventions addressing population ageing can improve social and health care services. Interventions for expanding and improving transport, ICT and social infrastructures could place greater attention on the accessibility needs of the population.

- **However, the local dimension, while necessary, is not sufficient** to tackle all the issues related to KE and employment dynamics. Local ESIF interventions should be integrated into broader strategies and exploit all the possible synergies with national/regional programmes and other co-financed programmes implemented at the regional level. This would also avoid the fragmentation of interventions and the limitations due to the scant financial resources available in some areas and restrictions on eligible interventions.
- **The effectiveness of territorial policies for structural transformation depends largely on the quality of government and national and local institutions and actors.** However, local actors may lack the capacity to manage the complexity of policies addressing these issues. Integrated policy delivery can be effectively implemented at the local level with the support of higher level institutions and wider regional, national and EU strategies.  
Support from higher level institutions and the mutual exchange of experiences may facilitate institutional learning among local and regional authorities.

Overall, **the CP interventions are more successful in those regions where a number of conditions are satisfied**, such as the individuation and valorization of existing assets and the capacity to define long term realistic strategies with clear priorities; the integration of CP interventions within other programmes implemented at the regional and national levels; the activation of local stakeholders and the creation of effective public-private partnerships; the governance capacity of local and regional authorities.

### 7.3 Policy implications

Even though the 2014-2020 programmes is still on going, the policy debate is already turning to CP after 2020, with particular emphasis on the need to reduce spending (after Brexit) and to

focus on the performance and added value of EU spending. This debate was re-launched by Commissioner Crețu in August 2015, with ten crucial questions, concerning the policy's challenges and objectives, territorial targeting, policy architecture, instruments and governance<sup>67</sup>, as well as the Brexit implications for CP.

With focus on the role of the KE in shaping the territorial patterns of employment creation and (youth) labour mobility, the following policy implications are emerge from the study.

**Given budget constraints, CP should have an even greater focus on 'lagging' regions in order to reduce inequalities and polarization.** Spatial coverage and trade-offs between competitiveness and territorial cohesion goals are behind the disagreement between net receiving and net contributing MSs (Mendez and Bachtler, 2015). While innovation and the KE is usually linked to polarisation and increasing territorial disparities, CP is necessary to support redistributive measures and spur better living conditions in lagging areas. Particularly so in a framework where the creation of the European Fund for Strategic Investments (EFSI), allows CP to have a stronger focus on addressing the new challenges of social and territorial cohesion. This requires strong and clear political commitment by all EU institutions and adequate funding. For example, as suggested by Barca<sup>68</sup>, in order to implement the European Social Pillar social inclusion projects could be implemented with the support of CP throughout Europe.

Given that measures to support lagging regions and their convergence towards the EU average should be intensified, **how should 'lagging' regions be supported?** Many of these regions have been hit particularly hard by the 2008-09 economic and financial crisis and the following austerity measures, suggesting increasing funding allocation as a possible solution. However, in the absence of institutional capacity, this is not sufficient and may create a vicious circle, as many 'lagging' regions have already been receiving large amounts of funding for several years, but the lack of a proper institutional and governance capacity has led to an inefficient use and/or misuse of resources.

As for the concrete strategies to be implemented, the literature and empirical evidence provided by the regional case studies suggest addressing the context and agglomeration factors that support the **attractiveness of an area** for KE investments and high skilled mobility; the **retention of their attractiveness** (path dependency); and **spillovers from high growing KE areas to surrounding areas**.

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<sup>67</sup> Crețu C (2015) Speech at the 55th Congress of the European Regional Science Association in Lisbon, Portugal. 28 august 2015. Available at [https://ec.europa.eu/commission/2014-2019/cretu/announcements/55th-congress-european-regional-science-association-lisbon-portugal\\_en](https://ec.europa.eu/commission/2014-2019/cretu/announcements/55th-congress-european-regional-science-association-lisbon-portugal_en)

<sup>68</sup> Barca F.(2017) The European Union's Great Opportunity, Keynote speech: EU cohesion policy, a forward-looking perspective 7th Cohesion Forum, 26-27 June, Brussels

These factors are related to the six territorial keys identified in the EU 2020 Territorial Agenda<sup>69</sup>: promoting polycentric and balanced territorial development; encouraging integrated development in cities, rural and specific region; and territorial integration in cross-border and transnational functional regions; ensuring global competitiveness of the regions based on strong local economies; improving territorial connectivity for individuals, communities and enterprises; and managing and connecting ecological, landscape and cultural values of regions e.g.:

- **Valorising existing local knowledge and assets** to make places attractive for living and for business opportunities, e.g. cultural and natural heritage; or economic, financial, infrastructural, scientific assets; or low cost of living; or cultural and creative context; or local knowledge and craftsmanship; etc.;
- Providing **accessible services and infrastructures of general interest** (e.g. healthcare, education and training, transportation, ICT and digitalization) in order to improve accessibility, connectivity and living and economic conditions;
- Providing **incentives** to foster the **perception of opportunity** of different actors to invest in specific activities (such as innovation of products and processes);
- **Fostering vertical and horizontal cooperation among stakeholders** (especially universities and SMEs), as well as **territories**, through incentives, technical assistance, networking, or the creation of formal structures (*such as the 'innovation poles' in Abruzzo, or the BioConValleyGmbH in Berlin*) supporting interactions among actors; city networking and functional regions;
- **Adopting 'diaspora strategies'** encouraging return migration (as in the *North – Est region in Romania*), and/or incentivising non-returning migrants to invest in the development of the region in their country of origin through economic support (e.g. with remittances, direct investments, diaspora tourism), supporting the creation of knowledge networks and human capital investments, as well as supporting social investments.

A related issue is **how to bridge the rural-urban divide**. The Europe 2020 policy targets rely heavily on the involvement of urban areas, and the 2014-2020 programming period puts the urban dimension at the core of the CP. At least 50 per cent of the ERDF resources for this programming period will be invested in urban areas. However, there is no legal basis for urban policy in the EU Treaties, and not all MSs agree about the development of an EU Urban Agenda. **A coherent approach is thus needed to strengthen urban-rural linkages**. A possible way is to focus on **functional regions and on integrated cross-region and cross border cooperation**. In a globalised context, the cooperation dimension of the CP, through cross border and inter/intraregional cooperation is particularly important to promote spill-overs

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<sup>69</sup> Ministers responsible for Spatial Planning and Territorial Development (2011) Territorial Agenda of the European Union 2020, agreed on 19th May 2011 at Gödöllő, Hungary. Available at: [http://www.nweurope.eu/media/1216/territorial\\_agenda\\_2020.pdf](http://www.nweurope.eu/media/1216/territorial_agenda_2020.pdf) (Accessed 10 May 2016).

between urban and surrounding areas as well as targeted measures for second tier cities and rural areas. Regional cooperation and investments in enhancing accessibility and connectivity as well as in services of general interest improve living conditions and may reduce depopulation trends. In this respect, the strategy adopted in the *Macklenburg region* in Eastern Germany is of particular interest, as this region centred its strategy not only on the development of its health and biotechnology sector, but also on the valorisation of its natural environment, with the creation of high quality wellness facilities, good connections to nearby cities, and low housing costs in order to become the preferred place to live by commuters and retirees from other regions.

Although the existing experience of territorial cooperation and macro-regions show important achievements in terms of multi-sectoral, multi-country, and multi-level governance, the **cooperation and governance systems need to be further improved, starting from the EU institutions**. To this end, we share Barca's proposal to create a single CP Fund entrusted to a unified Directorate within the Commission and to extend the Commission's pro-active role on the ground, especially in low-income and low-growth regions, where the quality of institutions is particularly poor.

The **quality of institutions at the local level** is, indeed, very important for place based CP to be effective. As recently underlined by Barca<sup>70</sup> in the absence of institutional capacity at the local level, *'compassionate transfers and mere financial redistribution among Member States'* only *'produce a perverse effect, since they promote the aversion of local elites to innovation and competition, turn them into rentiers and erode the values of local communities'*. In this respect, as shown in chapter 5, the introduction in the current programming period of ex-ante conditionalities, requiring the presence of appropriate regulatory and policy frameworks, and sufficient administrative/institutional capacity, has acted as an important incentive for the development of comprehensive and targeted strategies and action plans at the regional and local levels. The introduction of new territorial instruments, such as the Integrated Territorial Investment (ITI), and the Community Local Led Development (CLLD), have also strengthened the participation of local stakeholders in decision making. However, there is still little experience in lagging regions on how to exploit local assets and potentials through the use of innovative and knowledge based enablers, and often regional strategies show weaknesses in their implementation.

**CP governance and implementation mechanisms** should thus better support **capacity building among local stakeholders**<sup>71</sup> as well as institutional multilevel networking and cooperation by combining capacity building measures, with bottom up and/or top down approaches according to the different contexts. In order to design an **effective shared**

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<sup>70</sup> Barca F. (2017), cit.

<sup>71</sup> European Commission (2015g) Improving how EU Member States and regions invest and manage EU Cohesion Policy funds. Fact Sheet. Press Release. Brussels, 24 March 2015

**governance and management system** and to support a simplification of the delivery system, measures to improve institutional capacity are crucial, together with measures to increase the transparency and accountability of the policy making process at all levels.

Particularly interesting in this respect are the mechanisms that have supported the *North-Eastern region in Romania and the Italian Abruzzo* cases in overcoming their negative socio-economic conditions and adopting a new pattern of local development based on the individuation and valorization of their territorial assets and the capacity to design long term strategies. While in the Romanian case the long term strategy was mainly developed by the interaction between national and urban institutions and local stakeholders (especially universities), in the Abruzzo case the main driving actor was the Ministry for Cohesion and Territorial Development, according to a top down approach with little involvement of local institutions and stakeholders.

In order to improve the governance system and capacity building, the following indications emerge from the study:

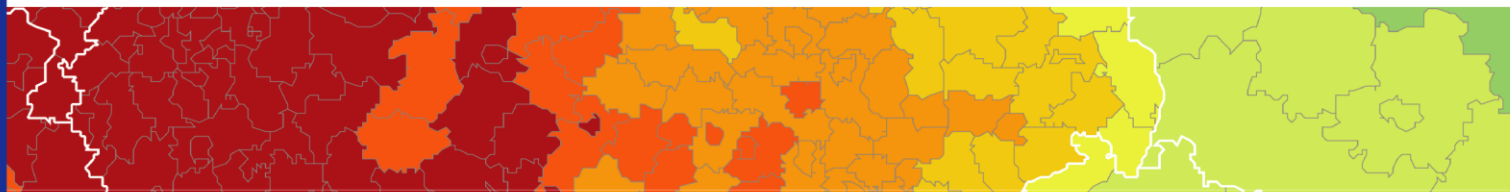
1. *Promote a multi-level governance framework*, with clearly defined roles among the different levels of governance and among public and private stakeholders. The urban regeneration programmes presented in the *Berlin and Iasi* cases, as well as in the *Mecklenburg* case, provide useful insights in this respect, showing how national, regional and local authorities and actors were effectively involved in the design and implementation of complex integrated strategies.
2. *Promote new pro-active approaches in policy making and the exchange of experiences for institutional learning*. This can be accomplished through the promotion of the exchange of good practices and experiences, with specific attention to pilot and innovative actions. For example, in relation to demographic issues, much could be learnt from the experiences from programmes that support active ageing and consider the elderly population as an important economic agent for activating economic opportunities for regional and local development. Approaches should raise awareness on diversity related strategies.
3. *Support management and implementation skills at regional and local levels* to improve institutional capacity and access to the ESIF resources. It is necessary to provide technical assistance and support capacity building among regional and local actors and managing authorities, especially when addressing the complex issues considered in this study. Local actors (especially NGOs and SMEs) are often on a micro-scale, with poor capacity in terms of project design and management. They need support and technical assistance in both the project design and implementation phases, as well as having access to the ESI Funds. Regional and, especially, local institutions need capacity building both in policy design and in policy delivery. It is important that:

- ✓ appropriate procedures be introduced in order to internalise the territorial perspective in the selection criteria, implementation methods and monitoring systems;
- ✓ technical assistance provisions be activated to support project interventions;
- ✓ specific skills in programme/project management be developed, either through internal training or external expertise and the exchange of good practice.

Intermediate bodies and/or technical support and coordination structures may be created at the regional level to provide assistance to regional and local actors.

- *Improve data collection and availability as well as monitoring and evaluation tools to support the planning and implementation of interventions through an institutional learning process.* The study has underlined the lack of complete comparable data at the NUTS 3 level, as well as the lack of data on the annual mobility flows of individuals. This lack of data restricts one's capacity to better understand mobility patterns across European areas, while the lack of monitoring and evaluation tools on the territorial effects of implemented policies restrict institutional learning.





### **ESPON 2020 – More information**

ESPON EGTC

4 rue Erasme, L-1468 Luxembourg - Grand Duchy of Luxembourg

Phone: +352 20 600 280

Email: [info@espon.eu](mailto:info@espon.eu)

[www.espon.eu](http://www.espon.eu), [Twitter](#), [LinkedIn](#), [YouTube](#)

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