

THIS PROJECT IS FUNDED  
BY THE EUROPEAN UNION



IMPROVING US AND EU IMMIGRATION SYSTEMS

# **Immigration and European Innovation Systems, Challenges for Economic Growth and Prosperity**

by Koen Jonkers



European  
University  
Institute

Robert Schuman Centre for Advanced Studies



MIGRATION POLICY INSTITUTE

**Improving EU and US Immigration Systems' Capacity for Responding to Global Challenges: Learning from experiences**

**Research Report  
Background paper  
EU-US Immigration Systems 2011/06**

**Immigration and European Innovation Systems,  
Challenges for Economic Growth and Prosperity**

**Koen Jonkers\***  
CSIC, Institute of Public Goods and Policies (IPP-CCHS)

\* Acknowledgements: many thanks to professor Philippe Fargues and the project team at the Migration Policy Centre of Robert Schuman Centre for Advanced Studies for inviting me to write this paper and providing a template for its structure. The responses of the national contact points and the service provider of the European Migration Network are gratefully acknowledged. The paper has greatly benefited from the comments of an anonymous reviewer. Funding was received from the EU Commission in the context of the project: "Improving EU and US Immigration Systems' Capacity for Responding to Global Challenges: Learning from experiences".

© 2011, European University Institute  
Robert Schuman Centre for Advanced Studies

This text may be downloaded only for personal research purposes. Any additional reproduction for other purposes, whether in hard copies or electronically, requires the consent of the Robert Schuman Centre for Advanced Studies.

Requests should be addressed to [transatlantic@eui.eu](mailto:transatlantic@eui.eu)

If cited or quoted, reference should be made as follows:

[Full name of the author(s)], [title], EU-US Immigration Systems [series number], Robert Schuman Centre for Advanced Studies, San Domenico di Fiesole (FI): European University Institute, [year of publication].

THE VIEWS EXPRESSED IN THIS PUBLICATION CANNOT IN ANY CIRCUMSTANCES BE REGARDED AS THE OFFICIAL POSITION OF THE EUROPEAN UNION

European University Institute  
Badia Fiesolana  
I – 50014 San Domenico di Fiesole (FI)  
Italy

<http://www.eui.eu/RSCAS/Publications/>  
<http://www.eui.eu/TransatlanticMigration>  
<http://cadmus.eui.eu>

## **Improving EU and US Immigration Systems' Capacity for Responding to Global Challenges: Learning from experiences**

The project is co-funded by the European Commission in the framework of the Pilot Projects on “Transatlantic Methods for Handling Global Challenges in the European Union and United States”. The project is directed at the Migration Policy Center (MPC – Robert Schuman Centre for Advanced Studies – European University Institute, Florence) by Philippe Fargues, director of the MPC, and Demetrios Papademetriou president of the Migration Policy Institute (MPI) the partner institution.

The rationale for this project is to identify the ways in which EU and US immigration systems can be substantially improved in order to address the major challenges policymakers face on both sides of the Atlantic, both in the context of the current economic crisis, and in the longer term.

Ultimately, it is expected that the project will contribute to a more evidence-based and thoughtful approach to immigration policy on both sides of the Atlantic, and improve policymakers’ understanding of the opportunities for and benefits of more effective Transatlantic cooperation on migration issues.

The project is mainly a comparative project focusing on 8 different challenges that policymakers face on both sides of the Atlantic: employment, social cohesion, development, demographic, security, economic growth and prosperity, and human rights.

For each of these challenges two different researches will be prepared: one dealing with the US, and the other concerning the EU. Besides these major challenges some specific case studies will be also tackled (for example, the analysis of specific migratory corridor, the integration process faced by specific community in the EU and in the US, the issue of crime among migrants etc.).

Against this background, the project will critically address policy responses to the economic crisis and to the longer-term challenges identified. Recommendations on what can and should be done to improve the policy response to short-, medium- and long term challenges will follow from the research. This will include an assessment of the impact of what has been done, and the likely impact of what can be done.

Results of the above activities are made available for public consultation through the websites of the project:

- <http://www.eui.eu/Projects/TransatlanticProject/Home.aspx/>
- <http://www.migrationpolicy.org/immigrationsystems/>

*For more information:*

Improving EU and US Immigration Systems' Capacity for Responding to Global Challenges: Learning from experiences

Convento

Via delle Fontanelle 19

50014 San Domenico di Fiesole

Italy

Tel: +39 055 46 85 817

Fax: + 39 055 46 85 770

Email: [transatlantic@eui.eu](mailto:transatlantic@eui.eu)

**Robert Schuman Centre for Advanced Studies**

<http://www.eui.eu/RSCAS/>

Immigration plays an important role in helping developed economies to maintain and improve their standards of living while their societies are aging. Developed economies are increasingly dependent upon highly skilled immigrants to provide scarce skills and boost innovation. They also rely on a broad range of low and middle skilled immigrants to perform work for which few native workers are available. These demands remain even in times of economic downturns, in particular the need to attract and retain the most talented immigrants. The aim of this paper is to outline how the EU and its member states approach the immigration-growth question. It examines the short and long term trends in how the immigration system supports economic growth and prosperity.

The paper is organised into five parts and each provides a partial contribution to the question of how immigration contributes to the economic growth of the European Union. The first part outlines the theoretical framework for this study, which combines the national innovation systems approach with studies of the migration system, in order to get a better understanding of the relationship between immigration and economic development. The second aims to provide a general background to the question of how different migrant workers contribute to economic development. It explores, in particular, the differences between the contribution of immigrants at different skill levels<sup>1</sup> and the way in which policy makers have responded to this in general. The third part focuses in on developments in the European Union and its member states. It studies the nature of the economic contribution expected of different types of migrant workers and which impacts are short term as opposed to long term. It also discusses the types of immigration which the EU member states have experienced in recent decades and how these trends have changed. The paper devotes special attention to (super) highly skilled immigrants because of their expected contribution to economic development and the performance of European innovation systems. It also highlights the difference between immigration from third countries and intra European migration as there are important differences in the nature of these flows and the extent to which national governments can influence them. The fourth part consists of the evaluation of policies and institutions, focusing on the features of the migration system which affect economic growth and competitiveness. More specifically, it discusses the extent to which the European innovation and migration systems succeed in selecting, attracting, absorbing, and retaining talented immigrants who contribute to economic development. The final part assesses the impact of the economic crisis on migration flows, policy responses and the role of immigrants in the economy in both the short and medium term. It argues that changed economic conditions and the policy measures taken in response have an impact on immigration flows in the short term. The economic restructuring which accompanies the downturn may lead to a jobless recovery and a changed demand for different types of migrants. In the medium and long term the need for, in particular, highly skilled migrant workers remain.

## **I. Introduction**

This paper analyses short and long term contributions to the economic progress and shared economic prosperity of EU member states as a result of migration at a range of skill levels. It does so by adopting the national innovation system approach to the analysis of economic development and its relationship to the migration system.

Immigrants arrive through various channels. Refugees and those arriving for family reunification are important groups in terms of size, however, they often do not contribute much to economic

---

<sup>1</sup> Even though many kinds of migration can contribute directly or indirectly to economic development and innovation, (super) highly skilled migration is thought to be most directly linked to innovation and is, therefore, at the centre of this paper. The immigration of workers at different skill level can also directly or indirectly influence the propensity for innovation in a system over the short and longer term. For this reason the paper also discusses the relative importance of these other types of economic immigration and the migration system in place in European countries. A further reason not to focus exclusively on highly skilled immigration is that this paper was intended as a twin paper comparing the management of migration flows and the impact of immigrants at all skill levels on economic competitiveness in the European Union and the US.

development in European member states.<sup>2</sup> Economic migrants are more important here and it is for this reason that this paper focuses on this group. Between migrant workers, it is useful to make a distinction between different types on the basis of their skill level. Low and highly skilled immigrants offer different contributions to economic development and they face different unemployment risks as well as differences in their general ability to integrate into their host society. Partially because of these differences, public opinion and the approach policy makers have taken to either limit or promote the entry and retention of these immigrants differ as well. A fourth group of immigrants are those who enter national systems illegally or overstay their visas. Normally this is a specific subgroup of economic migrants and in many cases individuals from this group find low skilled work in the (irregular) economy of the host system. Since the size of this group is considerable it will also be included. While both illegal and low skilled immigration and immigration policies are discussed in this paper, the emphasis lies on immigration of the highly skilled as a group which is expected to offer the most significant contribution to innovation and economic development in advanced economies. An additional category, particularly relevant for the purpose of this paper is foreign students even though they often are not counted as immigrants.

A socio-economic system consists of a complex of organisations, networks, and institutions. National systems are not only national because they are demarcated by physical borders, but they also tend to have their own institutional framework, are governed by a national government and have a national ecology of public and private organizations, which engage in economic and other societal activities. The institutions relevant for both the innovation system<sup>3</sup> and immigration system consist of both formal (laws, regulations) as well as informal institutions (ways of doing things, professional and cultural norms) (Edquist & Johnson, 1997). Economic growth can occur through a growth in the size or productivity of the employed labour force, an increase in invested capital, an increase in the number or size and nature of organisations and/or through innovations in institutions or technologies.

Immigration is one of the ways in which the national innovation system is related to and interacts with the outside world. For this reason, it is particularly interesting to see how the immigration system, that is, the organisations, networks and institutions which together determine the inflow, selection, retention, return, and integration of migrants, is related to the innovation system.<sup>4</sup> Clearly one can understand these systems as overlapping to a certain extent. The labour demands of the public and private organizations, which constitute the innovation system, form the main attraction to economic immigrants. These organisations employ and retain immigrants as well as often playing an important part in their selection and integration into broader society. At least this is the case for migrant workers which are the focus of this paper. Economic immigration can lead to an increase in the size (and productivity) of the labour force in the host country. The economic restructuring with which social and technological innovations are often accompanied, can lead to a changed demand for labour at different skill levels and can thus also have its effect on the demand for migrant workers - a competitive knowledge-based economy tends to be more attractive to high-skilled immigrants than less innovative systems.

Neoclassical economic approaches to skilled labour migration often do not take full account of the importance of institutions in managing migration flows and economic development. Since most recent

---

<sup>2</sup> There are examples of family reunion and refugee movements that contribute to the development of the receiving country (such as the Palestinians in Jordan). See, for example, Jacobsen (2002).

<sup>3</sup> The National Innovation System approach which is loosely based on evolutionary and institutionalist economics emerged in the 1990s as a way to study the development of economic systems with a specific focus on the institutions, organizations and networks which play a role in the development, diffusion and use of new economically useful knowledge and skills (Freeman, 1987, Lundvall, 1988, 1992, Nelson, 1993).

<sup>4</sup> While recognizing the overlap between the migration and innovation system, a full analysis of this relationship and thus an answer to the question about the role of selective migration policies to economic growth would be a complete research program rather than a single paper. The focus of this paper is on a more restricted part of the migration process, namely the formal institutions (laws, regulations, policies) which influence migration flows in and out of innovation systems and their effects.

studies of migration from both economic and other perspectives do actually highlight the importance of institutions, they may be relatively close to the national innovation systems approach even if so far this has not been made explicit. Implicit in the national innovation system approach, is a conceptualisation of individuals as socially embedded actors who continue to develop their skill set beyond formal education. Job and occupation specific skills are acquired by a process of learning which can take many years. These types of skills are often not recognized in the available statistics, which tend to use formal education levels as a proxy for skill level (for an alternative approach see Ortega and Polavieja, 2009). Cultural capital (including linguistic skills) also has a considerable effect on the success of migrants on the labour market. Access to professional networks is another factor which is important for labour market performance, perhaps especially, though not exclusively, among highly skilled professionals. Migrant networks are also important, especially for low skilled migrants, as they can provide (prospective) immigrants with information on labour market opportunities and are a method to generate social and economic support. Finally the innovation system approach recognises the importance of entrepreneurial drive. Individual actors, migrants included, can set up new organisations or lead existing ones and, in doing so, contribute to economic development in ways other than being employed in an organisation.

## II. Immigration and economic growth

This section provides some general background to the question of how different types of migrant workers can contribute to economic development. It explores, in particular, the differences between the contribution of immigrants at different skill levels and the way in which policy makers have responded. Immigration, at all skill levels, helps to sustain welfare programs in aging societies and help to address labour shortages. Considering the expected differences in immigrants' contributions to economic development according to their skill levels, governments in destination countries have implemented migration systems that favour highly skilled immigration over low skilled immigration. However, the limited possibilities for low skilled immigration are partially offset by substantial flows of illegal immigrants taking up low skilled occupations in the informal economy.

Increased immigration can help to resolve or postpone some of the problems created by the aging society of developed host countries, since new immigrants tend to be young relative to the average age of the native population. Immigration may, therefore, contribute to economic development by addressing labour shortages which are the result of the retirement of aging workers (Brücker et al, 2001, OECD, 2009a). Their contributions can help to finance social welfare programs in the short and medium term. Immigrants can thus help to improve the age structure of developed economies and, in doing so, can offer a temporary respite for welfare systems allowing governments to carry out more structural reforms. As, in the long term permanent immigrants also age, they will thereby draw on pension and health expenditures themselves. On the other hand, if migration flows continue in the future, they could continue to contribute to the active workforce and help finance pension systems<sup>5</sup>(Brücker et al, 2001, OECD, 2009a). Another reason to consider the potential positive impact of immigration is that many countries face, or are expected to face, shortages in various types of skilled and unskilled workers which is thought to hamper their economic development (Brücker et al, 2001, OECD, 2009a). While the immigration of migrant workers is often considered to contribute to economic growth, it is important to realize that a higher GDP does need to be shared by more people, meaning that actual incomes per person may not increase much (Economist, 2008a, OECD, 2009a).

---

<sup>5</sup> Because permanent migrants are themselves subject to a process of ageing, the more one calls immigrants to replace ageing natives, the more one will have to call new immigrants to compensate for the ageing of the first immigrants. This is a spiral process. (See also the UN publication (2001) on 'Replacement Migration' and the criticism it has received from demographers).

Highly skilled immigrants can also provide scarce skills and boost innovation. Immigrants with a scientific or engineering background can, for example, play an active role in strengthening the scientific knowledge base and have the ability to engage in technological innovation.<sup>6</sup> ‘High tech’ entrepreneurs can create employment and help drive the development of the knowledge based economy to which many governments in developed countries aspire. In general highly skilled migrants can prevent shortages of workers with required skill sets in the host country. Considering the anticipated positive economic and social impact this group of immigrants can have, many countries have imposed measures which favour the immigration of highly skilled workers above that of other groups. To a certain extent one may consider developed economies to be in competition for this group of immigrants (Mahroum, 2001, MPI, 2008). As a result of variations in the institutional and organisational set up of national innovation systems; including the differences in size and importance of economic sectors and the public research system, taxation levels and the structure of labour markets, as well as variations in their migration systems, there are also differences in the extent that they are attractive to this group of immigrants.

Countries also rely on a broad range of low skilled and medium skilled immigrants to perform work where insufficient native workers are available. This type of immigration can, therefore, contribute to the prevention of labour shortages and, therefore, to economic development. Low and medium skilled immigrants may also contribute to economic growth through innovation. However, it is safe to assume that the contribution of this group of immigrants will be lower than the contribution of highly skilled immigrants. Another argument which does not favour low skilled immigration is that low skilled workers in most developed countries have a relatively high risk of unemployment. If they attain permanent residency or citizenship, low skilled immigrants may, therefore, on average place a relatively high demand on the host country’s welfare system – indeed, they are sometimes claimed to cost more in public transfers and services than that they contribute in taxes<sup>7, 8</sup> (Brücker et al, 2001, OECD, 2008a). The children of low educated migrants tend to lag behind the children of native born parents in terms of educational attainment. This is one of the factors which affect their relatively lower chance of success in the labour market and this has long term social and economic repercussions

---

<sup>6</sup> See e.g. Hunt and Gauthier-Loiselle (2010) for a study showing the significant positive impact of highly skilled immigrants on patenting in the US. This positive effect is mainly attributed to the high share of natural scientists and engineers among highly skilled immigrants.

<sup>7</sup> Net fiscal benefits or costs refers to the difference between the taxes paid by immigrants and the cost of services provided to immigrants. The argument that low skilled immigrants have a relatively high net fiscal cost is well established and well known. As Borjas (1995) argues that unskilled immigrants are more likely to use many government services *and* pay lower taxes. Existing estimates of the net fiscal costs of different groups of immigrants vary. It is also quite likely that the fiscal costs or benefits will differ between European member states according to the type of immigrants they receive, the duration of their stay and the nature of their innovation system (as well as the nature of their welfare and tax system). Measuring the costs or benefits of immigrants is a contentious, politically salient, issue in, for example, the Netherlands (NRC, 2010). As a result there are not many studies, let alone cross European ones, on this topic. For an overview of studies on the fiscal impact of immigration in the UK see House of Lords (2008). The argument of the net fiscal benefits and costs of immigrants does not take into account less direct benefits such as, for example, the contribution of highly skilled immigrants to innovation in a country.

<sup>8</sup> Another factor that should be considered is that low skilled immigrants may compete with the native born low skilled population for available jobs (OECD, 2008a, 2009). Whether this really occurs or not is an empirical question and several studies indicate that there is only a limited effect on the wages of the native low skilled labour force (e.g. Ottaviano and Perry, 2008, Kahanec and Zimmermann, 2008, and Carrasco, Jimeno and Ortega, 2008 in OECD, 2009a). If one would follow the logic of complementarity, highly skilled immigrants would be expected to have a positive effect on the employment and average wages of the low skilled native born population, while low skilled immigrants would be expected to have a depressing effect on their labour market opportunities and wages (Brücker et al, 2001). However, other studies do attribute the relatively negative attitude of native born individuals from lower educated segments of the population to their perception of this type of competition, even if other factors are also likely to play a role (see also Mayda, 2006, Ortega and Polavieja, 2009). The OECD (2010) studied the effect of rising unemployment rates during the economic downturn on the perception by natives of the economic contribution of immigrants.



including an effect of the future innovative potential of the host system (OECD, 2007, 2009).<sup>9</sup> These and other factors have led most governments of developed countries to implement migration systems which offer relatively few legal entry options to low skilled immigrants. Still, most of these countries do have a demand for low skilled labour, which is not always met by the local population (Brücker et al, 2001, OECD, 2009a).

The limited possibilities for a large contingent of potential low skilled immigrants to enter developed countries legally in combination with the job opportunities and relatively high incomes in these countries have resulted in considerable inflows of immigrants who enter the country illegally or who overstay their visas (Brücker et al, 2001, OECD, 2009a). These illegal immigrants manage to survive in part by doing low skilled jobs which are unattractive to the local population. In general illegal immigrants have high levels of employment. By taking up work in occupations where insufficient workers are available, illegal immigrants also play a role in helping to address labour market shortages. In some cases they even contribute to taxes and welfare programs (SSA, 2002 in OECD, 2009a). Still, most governments consider it desirable to either limit this inflow or redirect it into legal channels, so that there is greater control and also so these immigrants can fully contribute to societal programs (OECD, 2009a).<sup>10</sup>

Economic migrants are often thought to be more entrepreneurial than either their co-nationals or the average native of their host country (Glover et al, 2001). Indeed, the fact that they choose to leave their country to search for opportunities elsewhere may in itself be evidence of this entrepreneurial drive. They may, therefore, be more likely to set up businesses in their host country which can increase employment levels and economic development. Another potential positive impact of migration is that immigrants bring cultural skills and a professional network that are specific to their home country. This could lead to the development of, among other things, economic ties between host and home country. Finally immigration, at all skill levels, leads to cultural diversity and experimentation which can be important for creativity and innovation (Niebuhr, 2010). The institutional and organisational set up of the innovation systems in host countries influences the ease and propensity with which new firms are established and the extent to which they perform well. Immigrant businesses are no exception, and the conditions offered in national innovation systems, e.g. tax regimes, regulatory pressure, the knowledge base, the presence of suppliers and customers, etc, can affect the attractiveness of a system to immigrant entrepreneurs as well as their relative success.

Governments are expected to aim for a migration system which increases the socio-economic benefits of migration by admitting migrants who help improve the economic development and welfare in their host countries (Brücker et al, 2001, Constant and Zimmermann, 2005). The functions (Bergek et al, 2008) which the migration system should perform include: the attraction of immigrants with desired skill sets, the selection of those immigrants which generate most economic and social returns

---

<sup>9</sup> As shown from analyses of the OECD's PISA survey, host countries differ considerably in their (lack of) success in educating the children of immigrants (Economist, 2008e).

<sup>10</sup> Limiting illegal immigration could also help prevent the humanitarian costs which are often associated with it. This includes unfavourable labour market conditions, exploitation, human smuggling and the casualties resulting from perilous migration routes. In most countries public opinion towards illegal immigration is strongly negative for various reasons. This negative attitude to illegal immigration is even thought to raise public opposition towards immigration in general (Brücker et al, 2001, OECD, 2009a). This may be another reason why governments want to limit it, even if it is impossible to completely put an end to it. A potential approach to limit illegal immigration is to offer greater possibilities for temporary labour migration. This can also help to address existing labour shortages in some economic sectors without the societal costs which can result from the permanent immigration of low skilled workers. This would allow these immigrants to benefit economically from short periods of working in developed economies. Their home countries would also benefit from the investment of the capital they bring back on return (OECD, 2008a, 2009). Such programs do work successfully in several countries, although the OECD (2008a, 2009a) does also see various difficulties with temporary migration programs when the demand for certain types of workers is of a permanent nature. It expects, among other things, opposition from employers who would be disinclined to offer training to temporary migrants repeatedly when longer term migrants would need this training only once.

to the host system, as well as; the retention of these immigrants; the diffusion of immigrants by allowing them to move to locations where they can make optimal use of their skill sets; the absorption or integration of immigrants in their host systems, as well as; mechanisms to foster the return of (unemployed) immigrants to their home system.

The rest of this paper deals with the EU immigration system and its effect on innovation and economic growth. As will be clear this geographical focus complicates matters. Since one might be able to speak of a supranational EU system, which is responsible for some of the migration policies which affect the European innovation system. But national member states retain a large part of their authority over immigration policies (Brücker et al, 2001). This at least is the case for immigration from third countries, since European treaties have limited the discretionary power of individual member states over intra European migration. The structures of the European national innovation systems and their respective demands and appeal for various kinds of migrant workers differ to a considerable extent. In order to address the question of this paper it is, therefore, important to not only explore the common effects of immigration on economic growth in the EU and the policies which are implemented at the supranational level to harness this, but also to highlight the differences between member states in terms of the immigrants they receive, the demands of their national innovation systems, and the migration systems which they have put in place.

The following sections of this paper draw on demographic and statistical information about European labour markets and the relative importance of immigrants therein as well as on the information on the regulations influencing migration flows into the European Union and its member states. It provides an analysis of previously published data in an attempt to answer the underlying questions. Throughout the text examples are given of European member states to show the differences in their approach, demand, and actual migrant flows and stocks.<sup>11</sup>

### III. Immigration and economic growth/competitiveness in the EU

In 2000, the European Council launched the *Lisbon Strategy* aimed at “making the European Union the most competitive economy in the world and achieving full employment by 2010”. This strategy rests on an economic pillar (preparing the ground for the transition to a competitive, dynamic, knowledge-based economy) and a social pillar (investing in human resources and combating social exclusion). The inaugural document of the *Lisbon Strategy* (Presidency Conclusions of the Lisbon European Council of 23 and 24 March 2000) does not mention migration<sup>12</sup>, a fact which implicitly means that Europe was then considered to already hold the required labour force and skills (European Parliament, 2000).

In 2010 and despite the crisis with its ramifications on unemployment, the communication from the Commission on “Europe 2020 – A European strategy for smart, sustainable and inclusive growth” sets similar priorities (“developing an economy based on knowledge and innovation”, and “fostering a high-employment economy delivering social and territorial cohesion”), but now recognizes that

---

<sup>11</sup> This paper draws on data on migration flows at various skill levels. There are various international organizations which collect data on (low and high) skilled migration including the OECD and Eurostat. These databases tend to be based on national census data or surveys carried out in different member states. There are some problems in the compatibility of data sets between countries – because not every country uses the same definitions and not every country collects the same data. For example, the definition of citizenship is not the same in all European member states: some, such as Germany and Southern European countries, follow *jus sanguinis* and thus grant citizenship to all descendants of nationals. Other such as France and the UK follow the *jus soli* principle and thus grant citizenship to everyone born on their soil. As a consequence second generation immigrants are still counted as foreign nationals in some countries where in others they are not (Zimmermann, 2005). For similar reasons it can be difficult to compare the data collected by international organizations (see also Lemaitre, 2005).

<sup>12</sup> Except in Section III on the Western Balkans: “The European Council [...] will enhance Adriatic cooperation in the fight against organised crime, smuggling and illegal immigration and will promote cross border cooperation.”

migration must be part of this strategy. A Flagship Initiative entitled "An Agenda for new skills and jobs" states that "At EU level, the Commission will work [...]to promote a forward-looking and comprehensive labour migration policy which would respond in a flexible way to the priorities and needs of labour markets" (European Commission, 2010c).

This section explores the relationship between immigration at different skill levels and economic growth and competitiveness in the European Union and its member states. It explores the flows and stocks of immigrants at different skill levels. It discusses the extent to which immigration has helped to fill specific shortages in strategic areas of the economy and those with unusual labour markets. Finally it discusses the trends of immigration and labour market demand during the economic crisis and expectations during the recovery phase.

Most of the member states of the European Union are characterized by a low birth rate and an aging population (see table 1).<sup>13</sup> These trends will have a considerable effect on the evolution of their economies, labour markets and societies in the coming decades. In the past ten years, population growth in the EU27 was mainly due to net migration. In 2008, the net migration rate was three times higher than the natural population growth (Vasileva, 2009) and from 2015 onwards migration is expected to be the sole cause as deaths outnumber births (Giannakouris, 2008). Most member states experience positive net migration, though there are occasional exceptions<sup>14</sup> (Lanzieri and Corisin, 2006). Meanwhile the average age of the EU 27 population is increasing. In 2008, the share of the population over 65 was around 17 %, this share is projected to have grown till 25.4 % in 2035. At the same time the size of the working age population (20-64) is declining though as shown in table 1 this does not happen in all member states in the medium term and the rate at which it occurs varies between all member states (Giannakouris, 2008, Eurostat, 2010a). As workers from the baby boom generation will retire in large numbers, there is to be a considerable decrease in the working age population over the coming decade. Increased labour migration is one of the ways in which the problems brought about by an increasing share of pensioners in EU population (which does happen in all member states though to different extents) could be addressed<sup>15</sup>, even if the expansion of the population through migration also leads to socio-economic costs (Brücker et al, 2001, OECD, 2009a).<sup>16</sup>

---

<sup>13</sup> There are considerable differences in demographic trends between European countries. France, the UK and Ireland have considerably higher birth rates than countries like Germany, Austria, Italy, Spain, and Eastern European countries (Eurostat, 2010a).

<sup>14</sup> For example Lithuania and Bulgaria (a country of structural emigration at least until its accession to the EU) witnessed net migration rates in 2005. In the same year the Netherlands, which is normally considered a country of immigration, also experienced a negative net migration rate (Lanzieri and Corisin, 2006).

<sup>15</sup> In 2006 the median age of immigrants who settled in 14 member states that collected data on age distribution was 28.8. Returning nationals were the oldest on average with a median age of 30.6. Intra EU migrants were just half a year younger. The median recorded age of third country immigrants was 27.7 (Herm, 2008).

<sup>16</sup> The geographical focus of this paper is on the national system. Immigrants do, however, also have interesting effects on the internal socio-economic geography of the European member states. Immigration is, for example, related to an increasing urbanization of the population as immigrants tend to concentrate in (larger) cities (OECD, 2003). The rising share of immigrants in the total population may, therefore, be affecting the relative distribution of the population between the cities and the countryside. However, considering the already very high degree of urbanisation in most EU member states (Champion, 2008) the effect of international immigration on urbanisation may not lead to very large changes in itself. There may, however, be other effects. The presence of immigrant communities in a specific city often leads other immigrants from the same country to settle there as well. As a result it is common to find a concentration of immigrants from a specific background in particular cities or neighborhoods. This concentration can lead to positive externalities for the immigrants themselves. It might also play a role in limiting the integration of these immigrants in the society of the host country and their earning capacity (OECD, 2003, Danner & Yaman, 2010). Persisting labour demand in for example agriculture may be met primarily by recent (and illegal) immigrants, when established migrants have a tendency to move to the city. The concentration of immigrants in major cities might be less strong in the case of intra European migration. For example Polish workers in the UK are said to have found employments in the countryside as well as the city, including in places with little prior experience of immigration (Economist, 2008d)

**Table 1. Population projections<sup>17</sup>, age structure and migration rates**

(First four columns in thousand)	Total population on 2010	Total population on 2020	Population between 15 and 64 yrs in 2010	population between 15 and 64 yrs in 2020	% of the total population aged 65 or over in 2010	% of the total population aged 65 or over in 2020	net migration rate (per 1000 pop ) 2008	net migration rate (per 1000 pop) 2009
EU27	499389.2	513837.6	334907.4	331007.3	17.38	20.06	2.9	1.7
Belgium	10783.7	11321.7	7116.3	7217.7	17.22	19.51	5.6	5.1
Bulgaria	7564.3	7187.7	5224.6	4701.2	17.47	20.34	-0.1	-2.1
Czech Republic	10394.1	10543.4	7327.8	6862.9	15.39	20.22	6.9	2.7
Denmark	5512.3	5661.1	3612.2	3574.9	16.37	20.11	3.5	3.9
Germany	82144.9	81471.6	54204.1	52639	20.57	22.79	-0.7	-0.2
Estonia	1333.2	1311	905.8	843.3	16.99	18.77	0.1	0
Ireland	4614.2	5404.2	3137.3	3547.7	11.33	13.28	0.4	-9
Greece	11308.8	11555.8	7554.4	7453.4	18.85	21.13	3.2	2.4
Spain	46673.4	51108.6	31877.5	33892	16.69	18.18	9.2	1.3
France (FX)	62582.7	65606.6	40534.5	40426.1	16.74	20.19	1.5	1.1
Italy	60017.3	61421	39397.5	39273.2	20.34	22.68	7.3	5.3
Cyprus	820.7	954.5	576.9	644.5	12.65	15.03	4.5	-4
Latvia	2247.3	2151.4	1550.3	1422.7	17.36	18.57	-1.1	-2.1
Lithuania	3337	3219.8	2310	2178	16.05	17.57	-2.3	-4.6
Luxembourg	494.2	551	334.9	368.4	14.28	16.2	15.8	13.2
Hungary	10023.5	9893	6873	6468.1	16.61	19.82	1.6	1.6
Malta	413.5	427	238	277.9	14.76	20.34	5.9	-3.8
The Netherlands	16503.5	16895.7	11084.6	10900.7	15.33	19.8	1.9	2.5
Austria	8404.9	8723.4	5674.2	5785.8	17.58	19.36	4.1	2.5
Poland	38092.2	37959.8	27220.3	25436.3	13.56	18.22	-0.4	0
Portugal	10723.2	11108.2	7174.2	7272.8	17.79	20.08	0.9	1.4
Romania	21333.8	20833.8	14926.6	14145.5	14.93	17.43	0.1	-0.1
Slovenia	2034.2	2058	1414.4	1346.2	16.62	20.42	9.2	5.8
Slovak Republic	5407.5	5432.3	3921.8	3745.6	12.29	16.44	1.3	0.8
Finland	5337.5	5500.9	3542.2	3353.8	17.06	22.41	2.9	2.7
Sweden	9305.6	9853	6077.8	6084.7	18.16	20.81	6	6.7
United Kingdom	61984	65683.1	41076.4	42024.8	16.38	18.29	3.3	2.9

Sources: Giannakouris (2008) and Eurostat (2010a).

For most of the 1990s, net migration into the EU ranged between 0.5 and 1 million per year, but it has increased to between 1.5 and 2 million since 2002 (European Commission, 2007). Between 2001 and 2008, the number of foreign citizens living in EU member states has increased by 9.2 million persons or 42%, so that in January 2008 the total number of foreign citizens (including both intra-

<sup>17</sup> The data in the first six columns are projections made by Eurostat in their EUROPOP2008 convergence scenarios (Giannakouris, 2008). These population projections were made in 2008. As the figure shows the net migration rate had decreased in 2009. If this was not taken into account the actual population data for 2010, and, indeed, 2020, might be different from that shown in this table.

European migrants and immigrants from third countries) was 30.8 million or 6.2% of the total population (Vasileva, 2009).<sup>18</sup> Over a third of these foreign nationals, 11.3 million persons, are citizens from another EU27 member state (Vasileva, 2009). The countries which witnessed the largest increase in the share of non-nationals in their total population were Ireland (from 3.9% in 2001 to 12.6 % in 2008), Spain (from 2.9% to 11.6%) and Cyprus (from 8.8% to 15.9%) (Vasileva, 2009). Foreign citizens from other EU27 member states formed the main share of this increase<sup>19</sup>, though in Spain non EU27 citizens still formed the largest part of the foreign population. In other member states such as Romania, France, Greece, Italy, Lithuania, Portugal and Slovenia the increase is mainly due to non-EU citizens and in fact in most member states third country citizens still form a majority of the foreign population (Vasileva, 2009).<sup>20</sup> In January 2009 the total stock of foreign born citizens in the EU27 had increased from 30.8 million to 31.8 million on the previous year, while the increase was smaller than between 2007 and 2008. The economic crisis has thus not led to a decline in total immigrant stocks (Eurostat, 2010). As shown in table 1, the net migration rate was lower in 2009 than in 2008 for most, though not for all, member states. The current and expected shortages for certain skilled and highly skilled workers have led the EU council, commission and several of its member states, to argue for or promote an expansion of skilled immigration (see e.g. EMN, 2007, European Commission, 2007d, Council of the European Union, 2009). Considering among others the differences in their innovation systems and the resulting differences in labour market needs (as well as attractiveness), not all the EU member states receive the same numbers of (highly) skilled economic immigrants (Brücker et al, 2001, OECD, 2006-2010). Over time, the population of European member states will continue to age and many<sup>21</sup> highly skilled professionals will retire. At the same time the gradual transformation of European economies will lead to increasing demand for highly skilled professionals. CEDEFOP(2010) forecasts that the number of available jobs (at all skill levels) in the European Union member states will have grown by seven million by 2020 in addition to the 73 million job opportunities which arise from the need to replace retiring workers. It predicts that the majority of these new job opportunities – around 8.5 million – will be in knowledge and skill intensive occupations, such as technical and high level managerial professions (CEDEFOP, 2010). Increasing the number of EU nationals taking advanced training is one important strategy used to address these expected shortages, but the supply of highly skilled workers from national education systems is not likely to be sufficient to meet the growing demand (CEDEFOP, 2010). The immigration of highly

---

<sup>18</sup> Net migration (immigration minus emigration) ranged between 0.5 and 1 million per year for most of the 1990s and legal immigration into EU countries averaged 1.5 million per year of whom around 1.2 million originated from non EU countries. Illegal migration, meanwhile, was estimated by Europol to be around 500,000 a year in 2000 (Brucker et al, 2001). Over the past decade several member states, including Spain, France, Germany and the Netherlands, regularized specific groups of immigrants who did not have a legal residence permit (European Commission, 2007a).

<sup>19</sup> In the period 2004 to 2007, the relative size of the group of (Eastern European) EU8 immigrants entering Germany and Austria declined, while an increasing share went to the UK and Ireland. Italy and Spain were the main destination countries for Romanian immigrants, most likely in part because of cultural and linguistic proximity (Brücker et al, 2009).

<sup>20</sup> The number of foreign born citizens in some member states like France, Sweden, Germany, the Netherlands, and the UK is higher than the number of foreign nationals as many immigrants acquired the citizenship of the host country. Between 2001 and 2007 nearly 4.8 million foreign nationals received citizenship of an EU member state (Vasileva, 2009).

<sup>21</sup> The exact numbers and relative shares of (super) highly skilled workers which will retire in the coming years differ from country to country. Comprehensive projections for all European countries were not found, though a range of studies highlights the impending retirement of highly skilled individuals from the “baby boomer” generation (Economist Intelligence Unit, 2009, CEDEFOP, 2010). That there are differences between sectors and between countries can be surmised from Eurostat data on the age structure of highly skilled individuals working in the higher education and governmental research sectors. In Luxembourg, 66% and 42% of the researchers working in the governmental research institutes and higher education are below 35 years of age. In Latvia by contrast over half of the researchers in government research institutes is 55 years or more. In Latvia and Italy respectively 38% and 35% of the researchers in higher education are 55 years or more (Eurostat, 2010c, data is from 2007).

skilled professionals can be a complementary way of addressing the expected shortages<sup>22</sup> (Euractiv, 2007, Cerna, 2010).

At the “super skilled level”, a category which includes, for example, doctoral scientists, researchers, engineers, IT specialists and senior managers, immigrants are expected to make a contribution to scientific knowledge production, “high tech” innovation, and in general the development of clusters of expertise in European member states. At the super highly skilled and highly skilled level, unemployment levels in most European countries are relatively low<sup>23</sup>: many European countries expect to face a shortage of scientists and engineers as a result of a low student population in these disciplines, the approaching retirement of many workers and continued demand from the private and public sector (Gago, 2004, Cervantes, 2004, INSEAD, 2009). Maintaining and expanding an expert knowledge base in these fields is considered crucial for the development of a knowledge based economy to which many European member states aspire. Meeting the Barcelona objectives of investing 3% of GDP in R&D (Council of the European Union, 2002), for example, would have required an increase in the number of active researchers of around 700,000 by 2010 (Gago, 2004). The mobility of this group of workers between European countries has increased as barriers against mobility were lifted and programs were implemented to promote mobility. However, for most countries, with the possible exception of the UK and the Benelux countries, net in- and out flows of European scientists and engineers are thought to be more or less in balance – or even negative in some cases (e.g. the recently accessed 12 member states and Italy). In order to reach a substantial increase in super highly skilled workers to address current and expected shortages it may, therefore, be necessary to attract substantial numbers of scientists and engineers from third countries.

In general, highly skilled immigrants are expected to boost economic performance by preventing labour shortages. Such shortages already occur in some European countries among, for example, health professionals. Shortages in this sector may be due to planning difficulties, as is the case for medical doctors in some countries, or to difficult working conditions, as is the case for nurses (EMN, 2006, OECD, 2007, 2009). However, some immigrants with high levels of education have problems finding work despite their qualifications. This is the case especially for immigrants who arrive in the context of family reunification or among those seeking asylum. Even some highly skilled labour immigrants have problems finding employment in occupations which corresponds to their level of qualifications, though to a lesser extent than the other groups (OECD, 2009a). This may be partially due to a skills mismatch but often also to the fact that it can be difficult to get foreign qualifications accredited. Despite this risk of unemployment, European policy-makers generally tend to look favourably upon highly skilled immigrants as they expect them to have good potential for economic and social contributions as well as relatively high chances of successful integration in their host society (OECD, 2009a). Over the past decade several EU member states faced shortages in medium skilled jobs such as butchers, electricians and plumbers (OECD, 2009a). In the short term such shortages are expected to have been mainly met through intra European migration, which has increased considerably after the accession of the new European member states (EU10/EU12). However, according to Münz (2008), the number of third country immigrants working in medium skilled occupations in the EU also increased by around 50 per cent between 2000 and 2005. In general the shares of third country immigrants with either low levels of education or high levels of education are thought to be relatively high, though as shown in table two the shares of immigrants with upper secondary education is also substantial in all member states. In the longer term, the training of

---

<sup>22</sup> In addition to increasing the size of the active population through other means, that is increasing the participation rate of women and older workers, increasing the pension age etc.

<sup>23</sup> Among people with high level qualifications the unemployment rate in the EU27 is less than 4%. It is not expected to increase beyond the 4% level due to the crisis and to decrease slightly towards 2020. By contrast among people with low levels of qualifications the unemployment rate prior to the crisis was between 10% and 12% in the EU27 before 2007. The economic crisis is projected to have a high impact on the unemployment rate of this group, rising to over 18%. In the next ten years it is projected to decrease only slightly to rates of well over 16% in 2020 (CEDEFOP, 2010).

nationals in addition to other European citizens should offer a favourable alternative to third country immigration for medium skilled occupations. The CEDEFOP (2010) predicts that, by 2020, the demand for skilled manual workers (agricultural, trade and craft workers, machine operators, etc) will have declined by 4 million. There will be new employment opportunities as retiring workers need to be replaced, but it seems reasonable to expect that these vacancies can be filled with native born and other EU workers. The demand for non-manual skilled workers will remain more or less constant even if the nature of jobs in this sector will change and, as a consequence, changes may have to be made in the provision of education and training (CEDEFOP, 2010).

Apart from high and medium skilled labour shortages, EU member states have also experienced shortages for certain low skilled jobs in agriculture, construction, hospitality, cleaning, food processing, domestic help and care for the elderly. A large number of these jobs have been filled by immigrants because there were insufficient domestic workers (OECD, 2009a). By preventing labour shortages, low skilled immigration can, therefore, also contribute to economic growth. A potential alternative hypothesis is that the supply of relatively cheap immigrant labour reduces incentives for technological innovation and the improvement of working conditions and delays economic restructuring.<sup>24</sup> As was discussed in Section 2, public and political opinion towards permanent low skilled immigration from third countries tends to be relatively negative. Several European countries, therefore, rely primarily on intra-European mobility to fill labour market shortages in the low skilled segments. After the transition periods imposed by some member states have ended, they would be bound by European regulations not to limit these flows either. Some member states also experiment with temporary migration schemes which are open to low skilled workers from third or transition countries. The substantial number of illegal immigrants also tends to have found work in low skilled jobs. By 2020, the demand for workers in low skilled jobs is projected to have increased by around 2 million. Since the number of jobs for manual skilled workers is projected to decrease by double that amount over the same period (CEDEFOP, 2010) while unemployment levels are high in several member states, this expected demand might be met by better qualified workers and higher participation rates. If labour market participation and intra-European mobility would improve, the need for the further immigration of low skilled third country immigrants may be limited. If this does not prove possible, temporary or permanent immigration of these types of workers may be necessary.

### **A. Stocks and flows of immigrants at different skill levels**

In the 1950s and 1960s, North Western European countries including Germany, the Benelux and France adopted a relatively open approach to the immigration of low skilled workers. In this period they received (or in many cases recruited) large numbers of economic immigrants from Southern Europe and other Mediterranean countries such as Morocco and Turkey. Structural changes in these economies in the wake of the 1970 oil crises led to high levels of unemployment among both low skilled native and foreign born individuals. While many, especially Southern European, immigrants

---

<sup>24</sup> The information in this paragraph and on page 19 suggests that avoiding labour shortages in, for example, agriculture and construction thanks to low-skilled migration has allowed countries such as Spain or Greece to maintain their economic growth. One may wonder whether economic growth in these two sectors is linked to innovation in the first place. In agriculture investments in R&D are shown to have a link to economic growth (Alston et al, 2000) and innovation in business practices and marketing may also play a role in enhancing economic growth. While we have anecdotal evidence of highly skilled intra European immigrants playing a role in the Spanish agricultural sector, most immigrants working in this sector are low skilled and are not expected to play a large role in either process or product innovation. More detailed studies of innovation in this sector are needed to reveal whether this R&D is focused on process as well as product innovations. The construction sector is often believed to be characterized by relatively low levels of innovation, though there are also studies which argue that innovation is prevalent and that it has the potential for significant benefits to the company, industry and broader society (Slaughter, 1998). The European Commission argued already in the 1990s that innovation is important to making the European construction sectors more internationally competitive (European Commission, 1997). See Manseau & Seaden (2001) for more detailed information on innovation in the construction sectors of various European countries.

returned to their home country as had initially been expected, large numbers also remained and consequently brought their families. Since this time EU member states have implemented migration systems which limit low skilled labour immigration from third countries, although substantial flows of immigrants continued to arrive in the context of family reunification or as refugees (Brücker et al, 2001, Dobson et al, 2009).

As part of the European integration process, the barriers to the intra European mobility of workers have been removed (Brücker et al, 2001). EU nationals have the right to seek employment in other EU countries and cannot be discriminated against with regard to employment, occupation, remuneration, dismissal, and other employment conditions (European Commission, 2002). Intra-European mobility has also been facilitated by the harmonization of education systems, the mutual recognition of degrees and the coordination of social security schemes (European Commission, 2007b). Further, attempts have been made to reduce the formal obstacles to the establishment of companies, self employment and the provision of services in other EU countries. Despite these measures intra European mobility long remained modest, with around 1.5% of the population of European member states being nationals of another EU country in the early years of this century (Brücker et al, 2001). In this period, the majority of foreign nationals were citizens of third countries and in most member states this is still the case (Vasileva, 2009). In recent years, especially since the accession of 12 new member states, intra-European mobility has increased rapidly. Between 2002 and 2006 the number of EU27 citizens migrating to other European member states increased by 50% (Herm, 2008, OECD, 2010a). Several countries, especially Ireland, Spain and the United Kingdom (which partially or completely opened their labour market to the EU10 countries immediately after accession), have experienced large inflows of intra EU migrants. Most of these filled labour demand in low and medium skilled jobs, although in many cases this did not correspond to the migrants' education level (Herm, 2008, OECD, 2009a). Many highly skilled workers from the accession countries also migrated, but a considerable share went to North America instead of the EU-15 (OECD, 2009a). Meanwhile, the emigration of skilled and highly skilled workers posed challenges to the economic growth of EU10 member states as these countries faced labour shortages in several professions (Rutkowski, 2007, OECD, 2009a). Parts of these shortages have been met by immigration from third countries such as Russia, Ukraine and other member of the Commonwealth of Independent states (Schreiner, 2008). In order to address shortages, several of the new member states have also offered incentives to skilled expatriates to return home (Wieninternational, 2007, OECD, 2009a).

In 2006 the number of immigrants arriving in the EU was 3.5 million - almost 25% higher than in 2002. More than half, 1.8 million immigrants, were citizens of third countries, although they may have been living in other EU countries before migrating. The remaining 1.7 million were EU citizens of whom 0.5 million returned to their country of origin (Herm, 2008). Figure 1 shows the distribution of entry channels of legal immigrants for several EU member states in 2008<sup>25</sup> (OECD, 2010). Over 60% of permanent legal immigrants in Austria and Denmark are now in the free movement category (which refers to intra-EU migration<sup>26</sup>), with Belgium and the Netherlands also showing high shares. A relatively large share of permanent immigrants to Portugal, Spain, the UK and Italy are third country

---

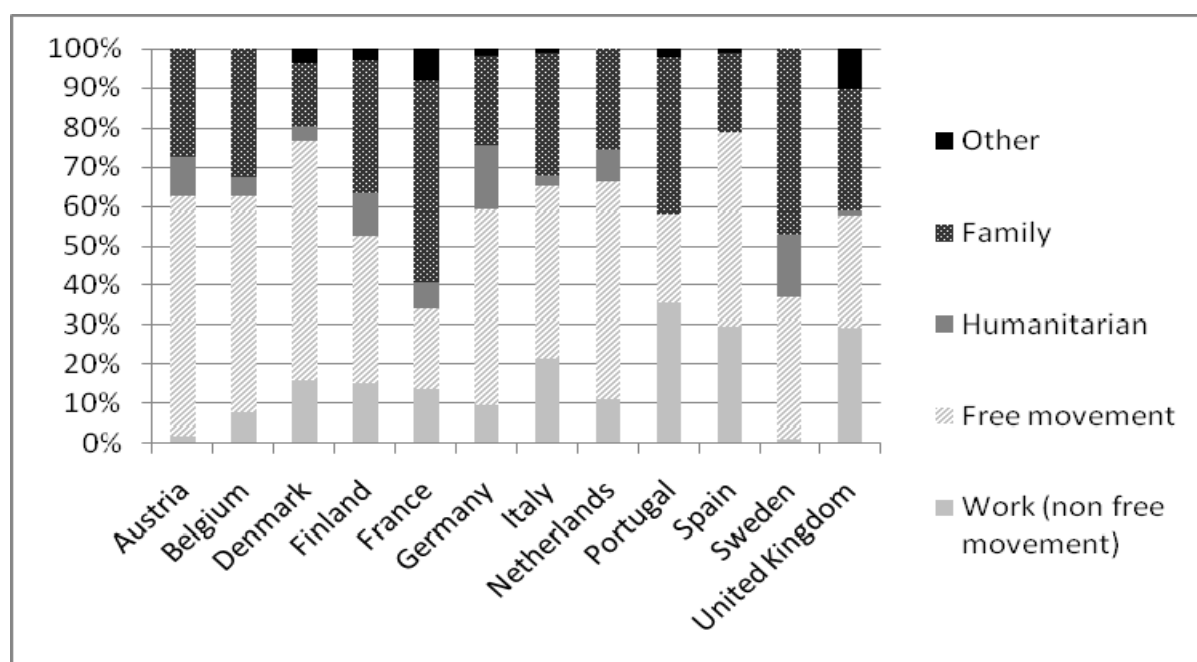
<sup>25</sup>In the period 2002-2006 the annual rates of entry varied from 6.5 per 1000 inhabitants in Austria, 3.4 in Belgium, 3.5 in Denmark, 2.6 in Finland, 2.8 in France, 2.9 in Germany and Italy, 3.7 in the Netherlands, 1.4 in Portugal, 6.1 in Sweden and 5.3 in the United Kingdom (OECD, 2009a). As is also shown in figure 1 the way immigrants enter EU member states varies from country to country. In the period 2002-2006 family reunification was important in all countries, but perhaps especially in Austria, the Netherlands, France and Sweden where it formed the largest category (even larger than the free movement category as, indeed, was still the case in France and Sweden in 2008). Other member states like Portugal, Italy and the UK had a high percentage of work-related immigration from third countries in this period and as shown in figure 1 still in 2008 (OECD, 2009a). This was also true for Spain and Ireland (OECD, 2006, 2010).

<sup>26</sup> The free movement category, refers to intra European migration. It is primarily labour migration like the "work" category which refers to labour immigrants from countries that do not take part in the European free movement regime.



immigrant workers. Family related reasons are important in all member states, but in particular, in France, Sweden and Portugal.<sup>27</sup>

**Figure 1. Permanent-type immigrant inflows by category of entry 2008**



Source: OECD (2010)

Before discussing the different types of migrant workers, Table 1 presents some data about the educational attainment of migrants living in several European member states. This data includes migrants who entered for family reunification and humanitarian reasons and does not make any distinction on the basis of citizenship. While the average educational attainment in EU countries increased over the previous decades, the main countries of origin lagged behind on this (it also increased but at a lower rate). In general and in most countries, the average educational attainment of third country immigrants is lower than those of the native born.<sup>28</sup> Table 1 compares the educational attainment, per share of the population, of native born people living in several European countries with those of immigrants born outside OECD countries in 2006.<sup>29</sup>

<sup>27</sup> Family related reasons appear to account for a relatively small share of total permanent immigration in the UK and Denmark. The OECD data for these countries also show a considerable number of accompanying family members of workers. Since these are probably included in the data on family related reasons in the other member states they have been included under the “family label” in figure 1 (OECD, 2010).

<sup>28</sup> By some measures the UK, Portugal and Spain may be exceptions as they have a relatively high share of well educated immigrants from non OECD countries in comparison to the native population. For the UK some analysts (OECD, 2009a) attribute this to the large number of third country nationals working in the financial industry in London, but considering that the number of people with upper secondary education is relatively high in comparison to the native born population one might wonder if this provides the full explanation.

<sup>29</sup> For the purpose of this table the OECD (2009a) considered Turkey and Mexico to be non-OECD countries because in terms of migration they are mainly countries of origin rather than destination. Data on immigrants born in other EU countries (or countries like the US, Canada, Australia and Japan, for that matter) are not shown in table 1

**Table 2. The educational level of non-OECD migrants aged 25-44 compared to that of the native born population**

	Native-born				Non-OECD foreign-born			
	1 <sup>st</sup> (%)	Low 2 <sup>nd</sup> (%)	Upper 2 <sup>nd</sup> (%)	3 <sup>rd</sup> (%)	1 <sup>st</sup> (%)	Low 2 <sup>nd</sup> (%)	Upper 2 <sup>nd</sup> (%)	3 <sup>rd</sup> (%)
Austria	0.0	11.3	69.7	19.0	0.0	38.3	49.2	12.5
Belgium	5.8	14.3	40.6	39.3	27.0	16.3	32.3	24.4
Denmark	0.3	12.5	48.8	38.4	13.4	18.2	34.2	34.2
France	4.4	17.5	44.7	33.5	18.1	22.2	29.4	30.4
Greece	12.9	14.4	45.7	27.0	22.7	26.0	39.0	12.3
Italy	4.2	34.5	45.7	15.6	13.8	35.4	40.4	10.4
Netherlands	3.6	16.8	46.1	33.6	17.5	18.3	45.5	18.6
Portugal	47.8	17.6	18.0	16.5	24.4	23.4	33.6	18.6
Spain	6.3	33.1	21.6	39.0	23.7	15.7	37.5	23.1
Sweden	0.2	7.5	58.3	34.0	12.6	10.4	46.5	30.6
UK	0.1	25.2	41.0	33.7	1.4	20.2	48.8	29.6

Source: OECD (2009)

Before the accession of the 12 new member states the average educational attainment of intra EU migrants was higher than that of the native born population. There were exceptions, however, since countries like Luxembourg and France also attracted many low skilled workers from Southern Europe (Brücker et al, 2001). Since the accession of the new member states, intra European migration of low skilled workers increased markedly; even if the education levels of these immigrants were comparable to the native population, most found work in low skilled jobs (Herm, 2008, OECD, 2009a, Brücker et al, 2009).

### *(Super) highly skilled*

Any insight into the stocks of super highly skilled immigrants in the EU27 countries depends on the definitions adopted for the classification of immigrants in this skill group and on the extent that this data is collected in national or European censi and surveys.<sup>30</sup> The first group considered are the so-called Human Resources in Science and Technology Core (HRSTC)<sup>31</sup> on whom Eurostat data for 14 Member states (see table 2) in 2006 indicate that 4.4% (1.129 million) were non national. Of these 4.4%, 2.4% had EU-27 citizenship and 2% held the citizenship of third countries (Mogu rou & Di Pietrogiacomo, 2008). The absolute and relative number of foreign HRSTC varies strongly between EU member states. The highest shares of foreign HRSTC are found in Luxembourg and Austria. The countries with the highest share of third country HRSTC are: the United Kingdom, Cyprus, and Austria (Mogu rou & Di Pietrogiacomo, 2008). The table also shows that in several countries, e.g. the

<sup>30</sup> Unfortunately there is no direct European equivalent of the US NSF's Science and Engineering indicators. This paper will be limited to providing indications of the size of several groups which would, under some definitions, be classified as super highly skilled. Limiting itself to data for these groups it excludes many immigrants which would be considered super highly skilled in other definitions such as (some) high level managers and financial experts.

<sup>31</sup> "Human Resources for Science and Technology Core (HRSTC) are people who [have]: a) successfully completed third-level education in an S&T field of study and those who are b) not formally qualified as above, but are employed in an S&T occupation where the above qualifications are normally required." (Mogu rou & Di Pietrogiacomo, 2008). The 14 Member States shown in table 2 had 25.8 million HRSTC, which is 75% of the total number of 34.5 million HRSTC in the EU-27 as a whole (Mogu rou & Di Pietrogiacomo, 2008).

UK, France, the Netherlands, Sweden and Austria, a large number of HRSTC born in third countries have acquired citizenship. This is also true, though to a more limited extent, for foreign born HRSTC from other EU27 member states (Mogu  rou & Di Pietrogiacommo, 2008). Between 2000 and 2006, the number of HRSTC from other EU-27 member states and third countries increased with an annual 8.6 percent and 11.3 per cent respectively<sup>32</sup>. Growth was particularly strong in Spain with average annual growth rates of 23.9 and 29.4 per cent respectively (Mogu  rou & Di Pietrogiacommo, 2008).

**Table 3. Foreign and foreign born Human Resources in Science and Technology Core in EU member states (2006)**

Country	Total HRSTC (1000)	Number of EU-27 foreign nationals (1000)	EU-27 foreign nationals as share of total HRSTC (%)	EU-27 foreign born as share of total HRSTC (%) <sup>33</sup>	Number of third country nationals (1000)	Third country nationals as share of total HRSTC (%)	Third country foreign born as share of total HRSTC (%)
Austria	443	34	7.7	10.6	13	2.9	5.4
Belgium	919	45	4.9	5.1	8	0.9	4.7
Cyprus	65	3	4.6	7.7	2	3.1	6.2
Czech Republic	537	4	0.7	1.5	4	0.7	0.7
Denmark	676	13	1.9	2.5	11	1.6	3.6
Finland	550	3	0.5	0.9	2	0.4	1.1
France	4567	63	1.4	2.7	69	1.5	6.7
Germany	6416	162	2.5		104	1.6	
Greece	754	5	0.7	1.2	4	0.5	1.2
Luxembourg	45	22	48.9	46.7	1	2.2	4.4
The Netherlands	1640	33	2	2.7	12	0.7	5.8
Spain	3519	94	2.7	3	75	2.1	4.6
Sweden	1005	30	3	5.2	15	1.5	5.9
United Kingdom	4704	110	2.3	3.2	188	4	9.2
Total 14 MS	25840	621	2.4		508	2	

Source: JRC-IPTS based on Eurostat data in Mogu  rou & Di Pietrogiacommo (2008)

Another interesting group of highly skilled workers consists of doctoral candidates, which is partially a subset of HRSTC. In 2005, 21 EU member states<sup>34</sup> had a total of 487,000 doctoral candidates - 5.8 % of these were nationals from another member state and 14.1% were third country nationals. The United Kingdom (11,500), France (5,400) and Spain (3,100) had the highest number of doctoral candidates from other EU countries. In the UK as well as in Austria and Belgium, non native EU-27 nationals accounted for over 12% of the total doctoral candidate population (Mogu  rou & Di Pietrogiacommo, 2008). The UK (24,100), France (23,000), and Spain (11,300) also received most third country doctoral candidates. Together they accounted for almost 85% of all the 68,900 third country

<sup>32</sup> In the nine member states for which trend data is available: Belgium, Greece, Spain, Cyprus, Luxembourg, the Netherlands, Austria, Sweden, and the United Kingdom

<sup>33</sup> Foreign born HRSTC workers may have acquired citizenship of their host country. As a result the absolute and relative numbers of foreign born HRSTC is higher than the numbers of non-national HRSTC as is also shown in the table 2 (Mogu  rou & Di Pietrogiacommo, 2008).

<sup>34</sup> Not all member states reported data on their number of doctoral students to Eurostat and these figures are thus based on only 21 member states.

doctoral candidates hosted by the 21 countries reporting data. For comparison's sake, these three countries account for slightly less than 52% of the total number of doctoral candidates (Mogu rou & Di Pietrogiacommo, 2008).<sup>35</sup>

The preceding paragraphs and the information in Tables 1 and 2 gave an indication of the stocks of (super) highly skilled immigrants.<sup>36</sup> Apart from the immigration of people who acquired tertiary education in their country of origin, another channel for highly skilled immigration is offered by retaining international students after the end of their education. This topic is discussed in more depth in Section 4. While highly educated immigrants in general have a lower risk of unemployment than immigrants with low levels of education, the employment rate of foreign born residents with tertiary levels of education is considerably lower than those that are native born. This figure is influenced in particular by the relatively low employment ratio of highly educated female immigrants (OECD, 2009a). In many cases immigrants with higher levels of education start in low skilled jobs which they may eventually change for higher qualified jobs, following on from, say, acquisition of the host country's language, the accreditation of qualifications, or when appropriate openings appear (OECD, 2008a, 2009).

### *Low skilled*

While highly skilled migrants are a considerable group of migrants who are of strategic importance because of their contribution to the development of the (knowledge) economy of their host country, they are not the largest group of labour immigrants in quantitative terms. As shown in Table 1, the share of the number of persons born in non OECD countries with only primary or lower secondary education ranged from 21.6 % in the UK to 49.2 % in Italy. In most EU member states immigrants occupy a large share of low skilled occupations (OECD, 2009a). The relative share of jobs held by immigrant workers varies strongly between EU member states. In the EU-10, shares tend to be relatively low (with 0.3 % in Poland, 0.6% in the Slovak Republic, 1.8% in Hungary, and 1.9 % in the Czech Republic). Shares are highest in Luxembourg (45.4 %), Austria (16.1%) and Spain (15.9%), while in Belgium, France, Germany, Ireland, the Netherlands, Sweden and the United Kingdom shares are between 10 and 15%. In Denmark, Greece, Italy and Portugal, shares are lower than 10%. However, in all aforementioned countries the share of low skilled occupations held by immigrants is substantially higher except in Poland and the Slovak Republic (OECD, 2009a). The employment-population ratio of immigrants with only primary education is higher than that of native born residents with the same level of education in many EU member states though not in Belgium, Denmark, Germany, the Netherlands and Sweden (OECD, 2009a).<sup>37</sup> Recent immigrants have a relatively higher rate of employment than natives who have recently entered the labour market in most aforementioned European member states except France and the Netherlands. When considering only low skilled

---

<sup>35</sup> Mogu rou & Di Pietrogiacommo (2008) also made estimates of the share of foreign post-doctoral researchers in various fields in 2004. In the life sciences, engineering and social sciences the share of foreign nationals was 42%, 28% and 22% respectively. 18%, 11% and 9% came from other EU countries and the remaining shares thus originated in third countries.

<sup>36</sup> Not all of these people would necessary be granted the status of highly skilled immigrant in the selective immigration policies discussed in section IV. The governments of member states tend to adopt criteria related to income or past earnings and the nature of the job that will be carried out for the granting of this status. At the same time not all of those who are considered highly skilled immigrants in these programs will have been included in the data on HRSTC. People like economists, financial experts, lawyers, and high level managers etc may not all be included in HRSTC, while some of them would be considered highly skilled immigrants according to the aforementioned programmes. If one would, therefore, take education level as the criterion then the number of highly educated migrants is expected to be higher than the HRSTC figures.

<sup>37</sup> There are various potential explanations for this. These immigrants may be more willing to take up unattractive jobs than members of the lowest skilled segment of the population. Possibly they have relatively higher skills and abilities, or different attitudes which are not taken into account by formal educational qualifications. That this observation holds in most member states, except in those member states with relatively high levels of welfare provisions, might also suggest a potential explanation.

occupations, this difference between recent immigrants and low skilled native born labour market entrants is even higher, or at least this is the case in EU15 member states (OECD, 2009a). In general, however, the employment rate of lower educated workers, whether they are native or foreign born, is lower than that of workers with higher levels of education (OECD, 2008a, Eurostat, 2010b). The high share of low educated immigrants working in low skilled manual occupations is related to their relatively high rates of unemployment (OECD, 2009a).

### *Temporary employment*

In many European member states (such as Belgium, the Czech Republic, Finland, Greece, Hungary, the Netherlands, Portugal, Spain and the UK) a relatively large share of immigrants are in temporary employment (OECD, 2009a). Temporary workers particularly risk becoming unemployed in times of economic downturns. This will be discussed in more depth in the next section.

### *Self employment*

In some countries; such as Belgium; France; most Scandinavian; and Central and Eastern European countries, immigrants make up a relatively large share of the self-employed.<sup>38</sup> Some of these immigrants may have entered the host country on business visas bringing in their own capital or business ideas.

Others may have started a company after entering the country through other means (OECD, 2009a). The significant rate of self-employment could be a reflection of the relatively high entrepreneurial drive of immigrants mentioned in section II. Another hypothesis is that people who originate in some countries tend to be less risk averse or have experience of self employment in their home country. Self employed immigrants may also want to take advantage of the ties with their home countries or exploit other migrant specific opportunities. These could include ethnic network resources which allow them to provide goods and services to the migrant population in their host country or specific skills which, for example, allow for the setting up of restaurants serving the food of their home country. However, self employment has also been argued to form an alternative to unemployment or relatively low paid work for immigrants who have difficulties finding regular employment (Andersson and Wadensjo, 2004, Constant and Zimmermann 2005, OECD, 2007, 2009a).

## **B. Immigrants filling shortages in strategic areas of the economy**

Over the past decade the recruitment of low skilled migrants to fill labour shortages in sectors like construction and agriculture has contributed to economic growth, especially in Southern European countries (OECD, 2007, 2009a). In both Spain and Greece the construction sector accounted for a large share of immigrant employment (around 20 and 30% respectively) and of GDP growth<sup>39</sup> in the

---

<sup>38</sup> In some countries and sectors like construction the high level of immigrant self employment may be a reflection of “false self-employment”. This refers to relationships which are in fact dependent employment, but are declared as a purchase of services from a self-employed person. This may be done to relieve the employer from responsibilities (deduction of taxes and social security contributions). Self employment may also offer immigrants an easier immigration route. The exact scope of this phenomenon is hard to assess (OECD, 2004, 2009).

<sup>39</sup> Between 1998 and 2007, the gross added value of the construction sector in Spain grew at an average annual rate of 5.9%, exceeding the 3.8% growth in gross domestic product (GDP). The construction sector reached a 10% share of national GDP, twice the overall figure for the euro-zone. The construction sector was responsible for 25% of all new jobs created in 1998–2007. In 2007 the sector employed over 2.6 million people, accounting for 13.9% of all employees. In the first quarter of 2008, unemployment in the Spanish construction sector rose by 114,000 workers. This was an increase of 65% over the same quarter in 2007 (Eiro 2008). Around 20% of immigrants were employed in the construction sector (OECD, 2009) and the decrease in immigrant employment between 2008 and 2009 in Spain was even greater than for that of the native population (OECD, 2010). Between the 4th trimester of 2007 and the 4th trimester of 2009 the number of foreign

past decade (OECD, 2009a).<sup>40</sup> In general, legally resident migrant workers are not overrepresented in European agricultural sectors. An exception to this is in Spain, where the share of migrant workers in the agricultural sector is relatively high<sup>41</sup> and would be even higher if illegal immigrants were taken into account (OECD, 2009a). In, for example, Finland, Germany, Poland, Spain, and the UK, there are special (temporary) schemes for the recruitment of seasonal agricultural workers from transition or third countries (OECD, 2008a, 2009a).

Even though the manufacturing industries have shed many jobs in the past 40 years, manufacturing still accounts for 30% of immigrant employment in Germany and for more than 20% in Italy and Austria (OECD, 2009a). In other EU member states, the service sector accounts for 60% or more of immigrant employment and, in some countries such as Sweden and the United Kingdom, even up to 80% (OECD, 2009a). A relatively large number of immigrants work in sectors such as food processing, security activities, wholesale, hotels and restaurants, industrial cleaning and domestic help as well as care for the elderly (OECD, 2009a). Recent regularisation programs of illegal immigrants in several Southern European countries have shown that most illegal immigrants eligible for regularization (which was in some cases limited to certain professions) worked in providing “private household services” while considerable numbers also worked in construction and agriculture<sup>42</sup> (OECD, 2009a). This may indicate that there was an unmet demand for workers in these sectors which was not met through legal immigration channels. Alternatively, employers may prefer to hire illegal immigrants either because they cannot demand the same working conditions or for other reasons (see also OECD, 2009a).<sup>43</sup>

The recruitment of skilled migrants is important for, say, health professionals. The demand for these workers differs between European member states. For example, Greece and Italy had a shortage of nurses in 2005. On the other hand, these member states had too many medical doctors (EMD, 2006). Austria is facing an increasing demand for healthcare workers, particularly with the care of the elderly. This is also the case in Germany, the Netherlands and Sweden. Shortages in these countries are expected to become more pressing with the aging of the domestic population and domestic health professionals (EMD, 2006). The EU10 member states are experiencing severe shortages as a significant proportion of their healthcare workers move to EU15 member states. The immigration of third country health care workers is relatively low in most member states. In Austria, for example, only 2% of the health care workers in hospitals came from third countries in 2004. The United Kingdom is an exception, as around 7% of its health care workers came from outside the EU (EMD, 2006). Around one third of medical doctors working in the UK in 2003 were foreign trained. The

(Contd.) \_\_\_\_\_

nationals in the construction sector receiving unemployment benefits increased by 158,900. While in 2009, 21.2% of unemployed foreign nationals had previously worked in the construction sector only 11.9 % of unemployed Spanish had previously worked in this sector (Pajares, 2010).

<sup>40</sup> Also in Ireland there was a large construction boom. Non-EU migrants were not overrepresented in this sector but immigrants from the Eastern European member states were. Between the 4<sup>th</sup> quartile of 2008 and the 4<sup>th</sup> quartile of 2009 employment in the Irish construction sector dropped by 37% (CSO CNHS in Loyal 2010).

<sup>41</sup> Of the almost 3 million foreign nationals with registered contracts in Spain in 2009, approximately 570 thousand (19%) work in the agricultural sector and 15 % in construction (MTIN, 2010a). Between the 4th trimester of 2007 and the 4th trimester of 2009 the number of unemployed foreign nationals in the agricultural sector increased by 22,800 (Pajares, 2010). Note that it is difficult to get a complete insight into the number of immigrants working in the Spanish agricultural sector. While the largest part of agricultural workers is ascribed to the “Regimen Especial Agrario”, another part is ascribed to the so-called “Regimen Especial de Trabajadores Autonomos” and a final, smaller part is ascribed to the so-called “Régimen General” (MTIN, 2010b).

<sup>42</sup> In Spain 32% of applicants during the last regularization worked in domestic household services, 21% worked in construction and 15% in agriculture (OECD, 2009a).

<sup>43</sup> According to the OECD (2009) there are also many instances in which employers register illegal immigrants as workers in which case the lower wage costs may not be a motivation. Legal migration channels may not provide sufficient workers or such channels might be more costly. The extent to which governments impose penalties on employers hiring illegal workers and the enforcement of such rules may influence the behaviour of employers *vis-à-vis* the hiring of illegal immigrants.

share was 27 % in Ireland in 2005, and 11 % in Denmark. In the other European countries these shares are lower. The share of foreign trained nurses appears to be considerably lower though still high in, for example, Ireland with 14% (OECD, 2007). Third country health professionals, possibly even more so than other highly skilled workers, can face difficulties in getting their qualifications recognized in many member states.

### C. Immigration trends during the economic downturn

This subsection explores some of the trends in migration flows and the demand for migrant labour, experienced by the EU during the recent economic crisis. Section IV will give more details of the policy response. In general, economic downturns tend to result in a sharp decrease in the number of labour immigrants entering host countries and also during the present crisis several European member states have seen a decline in the inflow of economic immigrants from both within the EU and from third countries (OECD, 2009a). Other forms of immigration, e.g. through family reunion and asylum seeking are not expected to be equally strongly affected by economic developments (Papademetriou et al, 2009). As was shown in Figure 1, these so-called non-discretionary flows make up a large part of total immigration in the European member states. The economic downturn may, therefore, only have a limited effect on total net migration flow.

While complete statistics on the general inflows of immigrants in the EU member states are not yet available for 2009 and 2010, it is clear that the inflow has reduced sharply in the case of Spain (Ferrero-Turrión, 2010). In contrast to intra-European migration the general entry of third country immigrants into the UK labour market appears not to have decreased as a result of the economic downturn – though there have been fewer immigrants from some regions of origin (Sumption, 2010). Total net migration to the UK was 44 per cent lower in 2008 than it had been in 2007 (Koehler et al, 2010). Net migration to Italy in the first nine months of 2009 was 21 per cent lower than in the first nine months of the preceding year (Koehler et al, 2010). In Belgium the number of working visas offered in 2009 was 30 per cent lower than in 2008 (Koehler et al, 2010). Also in Latvia there are indications that the inflow of immigrants has slowed (or even declined) (Koehler et al, 2010). In Ireland there has even been a (small) decrease in the total stock of foreign citizens over 15 years of age (Koehler et al, 2010)<sup>44</sup>.

The change in net migration can in some countries be lower than expected due to the return migration of native born expatriates (Dobson et al, 2009). An increase of emigration of native born residents from some EU15 member states may also occur (and appears to do so in the case of, for example, Ireland and Greece (Loyal, 2010, Koehler et al, 2010), but it is unlikely to be large because the crisis has also affected the other main destination countries such as the United States. Indeed, emigration from both the EU15 and North America had decreased in 2009 (CBS, 2010). Illegal immigration is thought to be strongly labour motivated. Data from Frontex, and sources reporting on irregular migration into Spain and Greece, indicate a considerable decrease in entries in early 2009 (Fix et al 2009). However, the size of the population of illegal migrants is likely to have increased in many countries, not so much because of new entrants but because labour immigrants lost their legal status because they could not find new employment after losing their jobs and decided to remain in their host country nonetheless (Koehler et al, 2010).

Intra-EU migration is considered to be very responsive to changes in economic conditions. It is strongly labour motivated and because there is no visa process, immigrants face no barriers to return to their host country when economic conditions improve. It was expected that large numbers of immigrants from EU10 countries would return home especially from Ireland and the UK, as these received a large number of immigrants before the crisis hit (Economist, 2008c, Papademetriou et al,

---

<sup>44</sup> It is important to realise that data on the stock of foreign residents can be influenced by other factors than emigration and return. For example, the uptake of citizenship of the host country may also play a role.

2009). However, while unemployment of migrants from the EU10 in EU15 member states increased considerably between 2007 and 2009, the absolute stocks of immigrants from these countries in the EU15 did increase between 2008 and 2009. The same is true for immigrants from Bulgaria and Rumania. Also in the UK no decline in the number of immigrants from the newly accessed EU12 member states was visible (OECD, 2010a). However, according to Fix et al (2009) half of the Polish labour immigrants in the UK had returned to their home country by the end of 2008 and Sumption (2010) shows that the number of Eastern Europeans joining the UK labour market almost halved between 2007 and 2009.<sup>45</sup> In Ireland the population of Eastern European migrants is said to have declined by 15-20 per cent since its highest point at the end of 2010 (QNHS in Sumption 2010).

In comparison to intra European migrants, third country immigrants have fewer incentives and face greater barriers to return (Papademetriou et al, 2009, see also Koehler et al, 2010). It tends to be more expensive (in relative as well as absolute terms) for these immigrants to return home than for their EU counterparts – partially because of transport costs (Papademetriou et al, 2009). Even in the context of the economic crisis the economic and labour market situation in their home country has often remained worse than in their host country (Papademetriou et al, 2009, Awad, 2009, Koehler, 2010). Another barrier against the return of third country immigrants is that, in contrast to their EU counterparts, they tend not to have the guarantee that it will be possible to return to their host country when the economy picks up again (Papademetriou et al, 2009, Awad, 2009). For similar reasons illegal immigrants are likely to try to remain in their European host countries<sup>46</sup> (Papademetriou et al, 2009, Koehler et al, 2010). Worldwide, the recession does not appear to have led to massive return migration (Awad, 2009).

With exceptions such as highly skilled immigrants working in the financial service sectors of cities like London, there are many highly skilled workers who work in sectors (health care, engineering, IT, and scientific research) where labour shortages continued during the economic crisis.<sup>47</sup> Native workers cannot be retrained for jobs in these sectors in a quick and easy manner (Economist, 2009, OECD, 2009a, Papademetriou et al, 2009, Awad, 2009). Current or expected future shortages may furthermore make employers reluctant to let such highly skilled workers go (OECD, 2010a). In some European member states (e.g. the Netherlands and Germany), governments set up programs which allowed employers to retain their (skilled) workers through the economic crisis, e.g. by allowing company researchers to be temporarily outsourced to public sector research organizations or through (subsidized) temporary cuts in working hours.<sup>48, 49</sup>

---

<sup>45</sup> Statistics of the UK home office (2010a) also indicate that there was a considerable drop in initial and approved applications to the worker registration scheme for (Eastern European) EU8 nationals. The number of approved WRS applicants in the fourth quarter of 2009 was 26,650, compared to 28,835 in the fourth quarter of 2008 and 50,830 in the fourth quarter of 2007. The number of approved applicants from Poland especially showed a large drop. See also Awad (2009) and Fix et al (2009) for a discussion of earlier statistics from the UK home office.

<sup>46</sup> Legal temporary or unemployed migrants who are not able to renew their permits may decide to overstay their visas, thus leading to an increase in the number of illegal migrants (OECD, 2009a).

<sup>47</sup> For example in Spain, despite high unemployment levels, two thousand work authorizations for highly skilled workers were approved in 2009 which is a similar number to the preceding years, suggesting that the demand for highly skilled workers continues (Ferrero-Turrión, 2010).

<sup>48</sup> In, for example, the UK, the increase in unemployment was also less severe than expected in part because employers “hoarded” skilled workers even at the cost of lower productivity. The downside of this is that employment growth in the recovery is less strong than that it would otherwise have been (Sumption, 2010).

<sup>49</sup> In part as a result of these measures Germany’s increase in unemployment was among the lowest of OECD countries. Many firms which had been suffering shortages of (highly) skilled workers before the crisis were unwilling to fire qualified employees. Immigrants were furthermore not particularly hard hit in terms of increasing unemployment levels in part because most lay-offs were made among medium and highly skilled workers and most immigrants do not fall within these categories. On the other hand there was a relatively higher increase of long term unemployment among immigrants because they had more problems to reintegrate in the labour market. Germany had relatively very low levels of labour immigration before the crisis and as a result inflows were not much affected by the crisis (Burkert, 2010)



Exact statistical information on spending on innovation in private sector firms in Europe is still not available. However, the “innobarometer 2009 study” indicated that while over a third of European enterprises in sectors, where innovation was considered likely by the analysts, reported an increase in spending on innovation in the period 2006-2008 only 12 % expected an increase in their innovation budgets for 2009. 28 % expected a decrease even though only 9 % reported a decrease between 2006 and 2008 (Gallup, 2009).<sup>50</sup> The reduction in spending on innovation has its effect on labour demand (in the short term): companies lay-off workers involved in R&D and recruitment of new highly skilled workers may be limited. Reports on the severity of the crisis may also reduce the attractiveness of (the hardest hit) European member states to prospective immigrants.

Now that the economy in some member states (most notably Germany) is picking up after the crisis some employers are already reporting skill shortages again (Economist, 2010a, 2010b). In other member states, such as Spain, economic recovery and improving employment levels are expected to take more time. Also in other member states the austerity programs that are meant to reduce government expenditure and the levels of public debt which have risen sharply during the crisis could have an effect on the long term demand for highly skilled workers (including immigrants). The clearest examples of measures with a direct effect on the demand for highly skilled personnel are cuts or limited additional expenditures in public R&D and public programs to promote innovation in enterprises (in, for example, Spain<sup>51</sup> and the UK<sup>52</sup>).

Governments can also consider spending on R&D and innovation as a strategy for getting out of the crisis and becoming more economically competitive, a successful approach taken by Finland in the early 1990s. In recent years several European governments have announced increased investment in public R&D (e.g. Germany, EU Commission, Finland, France and Sweden) as well as specific R&D investment, regulations or public procurement to promote innovation in e.g. ICT and “green technologies” (e.g. Germany) (OECD, 2009b).

In the long term the demand for highly skilled workers will remain, unemployment levels for this category of workers will remain low (CEDEFOP, 2010) and there will also be a demand for highly skilled immigrants in some sectors. In the short term the economic crisis is thought to have led to a reduced demand and even lay-offs for skilled workers in some sectors. Since in most member states highly skilled immigrants also require a work offer in order to be admitted this has led to a temporary reduction in the inflow of highly skilled immigrants (though it is too early in time to give exact statistical information on the changes in migration flows over the past few years). It is, furthermore, expected that the inflow of international students is strongly affected by economic conditions in countries of origin, many of which have also been affected by the economic crisis (Papademetriou et al, 2009).<sup>53</sup> Again these numbers are likely to pick up again during the recovery.

---

<sup>50</sup> On the other hand more than half of the surveyed companies (in sectors where innovation was deemed likely) expected to maintain expenditures at 2008 levels in 2009 (Gallup, 2009). A decrease was most often seen in “catching up” countries: Bulgaria, Hungary, Latvia, Lithuania, Malta, Poland, Romania and Slovakia (Gallup, 2009, Pro Inno Europe, 2009) The innobarometer survey (Gallup, 2009) included companies in sector where the analysts expected relatively high levels of innovation. Kannerva and Hollanders (2009) in Pro Inno Europe (2010) indicate that innovation in companies in other sectors is (even) more likely to decrease as a result of the downturn.

<sup>51</sup> The Spanish government made cuts in science and R&D spending in 2009 and 2010 and announced further cuts in the 2011 budget (El País, 2010a, 2010b). The latter budget is still under discussion and there are also reports that science funding will be spared in this round (El País, 2010c).

<sup>52</sup> While the overall spending reviewed proposed a freezing of the budget for science over the coming four years, which came as a relief to the academic community, the Business, Innovation and Skills Department faces a cut of 25 % with the higher education budget being cut by 40%. While part of this loss in funding may be addressed by charging higher fees, a reduction in teaching staff in the higher education sector appears likely as well (Guardian, 2010, THES, 2010).

<sup>53</sup> It may be too early to tell what effect the crisis has had on the inflows of foreign and international students. The UNESCO Institute of Statistics does not yet offer data for 2009. Between 2007 and 2008 several of the major receiving countries in Europe (such as France, Germany and the UK) saw a decline in the number of foreign students. Other countries such as

Papademetriou et al (2009) hypothesized that during a period of economic downturn, unemployed highly skilled third country immigrants are more likely to return home in comparison to their low skilled counterparts.<sup>54</sup> On the other hand, highly skilled immigrants tend to have more options in looking for new employment than low skilled immigrants, because it is easier for them to move to a different sector or to temporarily take up work below their level of education in countries where they are allowed to take up this strategy (Papademetriou et al, 2009).

The unemployment level of low skilled individuals has increased rapidly during the economic crisis and immigrants are expected to be among the hardest hit.<sup>55</sup> As for highly skilled immigrants the demand for low skilled immigrants and their relative labour market performance during the economic downturn depends in part on the sector in which they are employed (OECD, 2009a, 2010, Awad, 2009). In several EU member states (e.g. Finland, the Netherlands, Luxembourg, France, Spain, Portugal, Italy and Greece) most immigrants are employed in sectors which suffered first and the hardest from the economic downturn such as construction, wholesale, restaurants, hotels and tourism (OECD, 2009a). In other countries (e.g. Sweden, Denmark, Belgium, Germany and Austria) the shares of immigrants working in different sectors is similar to the distribution of native born workers. As mentioned previously, in Sweden and Denmark, for example, immigrants account for 30% of workers in the health and social services sectors. These sectors tend not to react (quickly) to changes in economic conditions and as a result they do not experience a sharp rise in unemployment in the short term (OECD, 2009a). In fact employment in educational services, the health sector and residential care activities increased during the period of the economic downturn, which is expected to have provided work opportunities for immigrants as well. In the UK, Germany and Spain, immigrant employment increased in residential care activities and in Italy in domestic services (OECD, 2010a). Also other economic sectors will continue to face shortages for low skilled labour. New or recent low skilled migrants may also benefit from these opportunities,<sup>56</sup> because unemployed native or established migrant workers may not be willing or able to move to regions where there are jobs because of, for example, informal barriers to intra-European mobility for low skilled immigrants or because of family

(Contd.)

---

Spain, the Netherlands and Sweden showed an increase in the number of foreign students (UIS, 2010). The OECD reports similar data in terms of increases and decreases with the exception of the data for the UK and Sweden, where it reports an increase in the number of non-citizen students in the former and a decrease in the latter (OECD, 2010b). The category of international students in the OECD refers to non-resident students in a reporting country, as well as those who have prior education outside the reporting country. This footnote provides data on non-citizen students in reporting countries as it is more compatible with the UNESCO data.

<sup>54</sup> Papademetriou et al (2009) expect this to be the case because, for this type of immigrant, the costs of returning home are lower in relative terms and because they tend to be young and single and, therefore, do not have strong family ties in their host country which could impede return. In several European member states their visas restrict them to work for a specific employer so that when they become unemployed they may be forced to return. In other member states, such as the United Kingdom, they are not able to remain in the country for some time after becoming unemployed to look for alternative employment.

<sup>55</sup> Among people with low levels of qualifications the unemployment rate prior to the crisis was between 10 and 12% in the EU27 before 2007. The economic crisis, it is predicted, will have a high impact on the unemployment rate of this group, rising to over 18%. In the next ten years it is projected to decrease only slightly to rates of well over 16% in 2020 (CEDEFOP, 2010). Still there are differences in the relative extent to which immigrants suffered unemployment as a result of the economic downturn. As mentioned elsewhere, in Germany immigrants did not suffer disproportionately from the crisis (though indirectly they may have because of the relatively large increase in long term unemployment) (Burkert, 2010). In the UK, Eastern European immigrants did relatively better than native workers in terms of maintaining employment (Sumption, 2010). In Ireland, by contrast, this group suffered more than the native population (Loyal, 2010) and the same can be said of Spain (Ferrero-Turrión, 2010).

<sup>56</sup> While native European workers have only recently left some sectors (such as agriculture), the changing economic situation due to the downturn, may lead them to return to forms of employment which they found unattractive in the recent past (Awad, 2009). For example, in Spain, Ferrero-Turrión (2010) mentions emerging evidence that non immigrant Spanish workers have been willing and available to work in this sector since the crisis. Return to, for example, health care is more problematic because of the need for training. Still, people who have previously worked in the health care sector, but moved out might return. If this happens the reported increased demand for labour in the health care sectors of some countries during the downturn may not lead to an increase in immigrant employment (Awad, 2009).

or social ties. They may also be uninterested in the jobs on offer for financial or social reasons. Welfare provisions, capital savings or family and social support networks may reduce the economic need to move to regions in which labour demands exist or to accept unattractive employment offers in their home region – though in some member states, refusing work can mean the loss of unemployment benefits (Papademetriou and Terrazas, 2009, Visa, 2010).

The large share of immigrants in temporary employment provides part of the explanation for the sharp rise in immigrant unemployment in the first phase of the crisis (OECD, 2009a). Selective lay-offs may also have contributed to the relatively sharp increase in immigrant unemployment (Dumont, 2009, OECD, 2009a, Fix et al, 2009). Recent immigrants may suffer from the limited availability of temporary work because they are often an entry point for more permanent positions (OECD, 2009a). There are studies which suggest that immigrants who suffer unemployment in the period after arrival have a relatively worse labour market performance over the longer term as well: work is one of the best ways to integrate socio-economically in the host society, migrants may be “scarred” by prolonged spells in unemployment, and employers may prefer new and younger entrants to people who have been unemployed for some time. Previous crises have shown that it can be difficult to reintegrate immigrant workers who have suffered unemployment for prolonged periods (OECD, 2009a, 2010).<sup>57</sup>

Changes in the demand for immigrant workers and the restrictions imposed by member states are likely to have led to a reduction in some types of labour migration in the short term. A long and severe recession may also have considerable long term consequences on migration flows. Labour demand tends to increase only several years after economic recovery. Because higher unemployment levels make it easier for employers to recruit from the domestic labour force, this has an effect on the demand for immigrant labour (Papademetriou et al, 2009, OECD, 2009a). Economic downturns also tend to be accompanied or followed by economic restructuring or increase existing trends (in economic restructuring). The size of some sectors and industries will decline with, as a result, a reduced demand for immigrant workers in particular occupations. Other sectors and industries will expand in importance, leading to a changed demand for (immigrant) labour (Papademetriou et al, 2009, OECD, 2009a). As the CEDEFOP (2010) estimates also indicate, the demand for various types of migrant workers will change in the longer term. If the economic recovery proves to be “jobless” due to economic restructuring, unemployment levels will remain high for a longer period of time and, consequently, the demand for economic migrants relatively weak (Global Migration Group, 2009a, Euractiv, 2010). When economic conditions improve, however, labour immigration is likely to pick up again. The continued demand for both low and highly skilled labour, the aging population and the need to remain internationally competitive, are likely to lead to considerable flows of economic immigrants to European member states in the coming decade (Papademetriou et al 2009).

#### **IV. Policy/institutional evaluation: what features of the system affect economic growth/competitiveness, and how?**

In the first section we outlined the functions the migration system should perform in order to yield a positive impact on economic development in the host system. These functions include; the attraction of migrants which can contribute most to economic development; and the selection of those migrants which generate the most economic and social return to the host system. The system should also help to retain these migrants. Whether it is desirable to allow for the diffusion of migrants across the member states of the European Union is probably a factor which depends on the perspective taken, as some

---

<sup>57</sup> Self employed immigrants, (which some member states have in substantial numbers as mentioned elsewhere in this paper) are also likely to be affected by the economic crisis. Their companies tend to be fairly small which often means they do not have easy access to credit. Further, many immigrant enterprises are concentrated in sectors such as wholesale, restaurants and hotels, which initially suffer during economic downturns. The provision of goods or services to other immigrants may also become more difficult since many of these customers have less to spend due to higher unemployment levels (OECD, 2009a).

member states may benefit more than others from the lack of intra-European barriers to mobility. The migrants who are retained in a member state need to be absorbed and integrated into their host system. Finally, the system may need to have mechanisms to foster the return of migrants to their home system in situations where retention is not desirable.

### A. Selection and admitting

As a result of the free movement provisions of European regulations, the governments of member states do not have many options of limiting intra-European migration (Brücker et al, 2001, European Commission, 2002).<sup>58</sup> At least this will be the case after the end of a transition period imposed by some of the EU15 on immigrants from recently accessed member states (Euractiv, 2009). The extent to which European migration systems are successful in the selection and admission of immigrants is, therefore, especially relevant for immigration from third countries. According to the community preference principle employers who offer a new job have to give preferential treatment to EU citizens and third country nationals with a residence permit over new immigrants from third countries (Brücker et al, 2001, European Commission, 2002). Over the past decade governments from several European member states have been changing their immigration legislation to allow for the selection and admission of immigrants with desirable skill sets. The three main approaches towards selecting and admitting migrant workers are 1) quota systems which are used in, for example, Austria, Greece, Italy, Portugal and Spain, 2) labour demand approaches which are used in, for example, Belgium, Ireland, Sweden, The Netherlands and the United Kingdom, and 3) point based systems which are used in, for example, the United Kingdom, Denmark, the Netherlands and the Czech Republic (EMN, 2007, OECD, 2010a, MPSV, 2009).

Countries which apply a quota system regulate the entrance of third country workers by placing a numerical cap on the number of work permits issued (OECD, 2006, EMN, 2007). In countries which adopt a labour demand approach employers play an important role in selecting which immigrants receive the necessary permits. If a position cannot be filled by the principle of community preference (i.e. after proof of advertising the position on the local and European labour market), employers can extend job offers to third country nationals (EMN, 2007). Countries with a point based system offer an easy entry channel for migrants who meet a certain number of points based on, for example, previous earnings, qualifications, previous work experience in or outside the host country, age and language requirements<sup>59</sup> (EMN, 2007, OECD, 2008a, 2010).

Several of the countries following the labour demand approach allow for the exemption of labour market tests for a select number of professions which are considered to be in shortage (such lists of professions tend to be subject to change) (EMN, 2007, OECD, 2009a). The quota systems and point based systems also make use of such shortage lists. The number of job vacancies tends to be used as an indicator of how to construct these shortage lists. Since this indicator provides only limited insight into the situation in the labour market, several countries (e.g. Denmark, France, Finland, Italy, Spain and the UK) also use inputs from social partners. The views and interests of unions and employers, however, do not necessarily match and this may cause difficulties in times of economic weakness (OECD, 2009a).

---

<sup>58</sup> Excepting some limitations on employment in national public service, there is to be no discrimination on the basis of nationality between EU citizens as regards employment, remuneration and other conditions of work and employment (Brücker et al, 2001, European Commission, 2002).

<sup>59</sup> The criteria for the point based systems are not the same in each country. They may also be subject to change. For example, when the UK introduced a general point based system for several groups of immigrants, criteria for highly skilled migrants in tier 1 of the PBS, instead of the previous Highly Skilled Migration Program (HSMP), were changed so that e.g. previous work experience, significant achievements or having a skilled partner no longer contributed to an immigrant's number of points. As discussed in section V further changes have been made recently to limit the inflow of immigrants via this program.

*(Super) highly skilled immigrant*<sup>60</sup>

In recent years several governments have made special provisions in their migration programs for (super) highly skilled immigrants. Belgium, Ireland, the Netherlands and the UK, are examples of countries in which employers can hire highly skilled workers when there is a labour market shortage, directly from third countries without having to advertise first among the native or EU/EEA workforce. These highly skilled workers do need to meet some requirements such as having minimum earning levels. Some countries have introduced special categories of visa and work permits to facilitate entry procedures for specific groups of highly skilled migrants. Examples of this include the scientist visa in France and the Green card for IT professionals in Germany (in the period 2000-2004).<sup>61</sup> (Mahroum, 2001, Boswell et al, 2004, EMN, 2007). In 2007, Spain created an office (Division of large employers) responsible for allocating work and residence permits for highly skilled immigrants such as IT experts, scientists, university professors, business executives and renowned artists (Ferrero-Turrión, 2010). The UK and the Netherlands have broader programs for highly skilled immigrants who can enter, if they meet certain criteria or by reaching a number of points.<sup>62</sup> In the case of the Tier 1 program of the UK PBS<sup>63</sup>, highly skilled immigrants can enter without a fixed employment offer and accept work in any sector and for any employer or be self employed. In most programs of other member states a prior job offer is required (EMN, 2007, OECD, 2007, 2008).

Since the turn of the present century there has been an increasing policy debate on EU-wide coordination for the selection of highly skilled third country immigrants (Euractiv, 2008). Such an approach should increase the attractiveness of the EU for this group of immigrants as well as the degree of retention. This EU wide policy development<sup>64</sup> resulted in the so-called European “blue card directive” which entered into force in May 2009 and which should be incorporated into national legislation by 2011 (Council of the European Union, 2009). The EMN reports that most European member states are progressing on the implementation of this directorate (EMN, 2010d, 2010e). The blue card offers highly skilled third country nationals a one-track procedure to apply for a work permit either from within the EU or from outside. The selection criteria include a work contract, professional qualifications and a minimum salary level. Successful applicants will receive a special residence and work permit for several years with the possibility of renewal. The blue card may also be issued for shorter periods in order to cover the work contract plus three months (Euractiv, 2008, Collett, 2008, 2009, Council of the European Union, 2009).

In addition to the EU blue card, the Commission is now proposing regulations to allow for short term mobility of highly skilled workers in the context of intra-company transfers to and within the

---

<sup>60</sup> Within the context of this project a second paper was prepared which deals with the US situation. Interested readers will find information on the American instruments to select and admit highly skilled immigrants which can be compared with the EU instruments.

<sup>61</sup> Boswell et al (2004) distinguished between these programs which aim to attract qualified workers to address shortages in a specific sector at a relatively short notice (and, therefore, tend to have a temporary character) from the more general point based systems which aim to facilitate entry, residency and work for highly skilled workers with high potential regardless of the sector in which they aim to find work.

<sup>62</sup> The Czech Republic set up a point based system in 2003: the Active Selection of Qualified Workers Project. This scheme aims to stimulate permanent immigration of young qualified people from selected countries, including Ukraine. Criteria for obtaining points include previous work experience in the Czech Republic, educational attainment and language skills. Unlike the tier 1 part of the UK PBS, the Czech green card requires a fixed job offer (Papademetriou, 2007, OECD, 2008a, MPSV, 2009).

<sup>63</sup> The UK’s point based system (PBS) has five tiers. The first tier corresponds to the previous Highly Skilled Migration Program (HSMP). If highly skilled immigrants do not have sufficient points they can apply for the second tier program. This does tie them to a specific employer (EMN, 2007, OECD, 2007, 2008).

<sup>64</sup> Ireland, the UK and Denmark are not covered by the directive. The national governments of the member state who have not made an exception can continue to offer more favorable conditions if they choose and are allowed to maintain quotas on the number of immigrants they admit.

EU.<sup>65</sup> <sup>66</sup> This would concern highly skilled specialists and managers who have knowledge that is specific to the multi-national company in which they work and for whom it is difficult to find substitutes among native workers. Allowing for the transfer of these workers, who are typically employed by multinational companies, may also lead to increased investment flows, the strengthening of management effectiveness, the expansion of EU exports and, in general, an improvement in the economic competitiveness of the EU (European Commission, 2010a).

### *Business immigrants*

Several European member states, such as Germany, Estonia, Ireland, Italy, the Netherlands and the UK have special programs or provisions in their migration policies for third country nationals who want to set up their own company after entering the country. Applicants in most of these countries must meet certain criteria such as, having access to the necessary funding, an evaluation of the quality of their business ideas and the type of business they propose, these should have an economic interest for their host country such as contributing to the development of the knowledge economy and they should not have an adverse effect on domestic competition, etc (Mahroum 2001, EMN, 2007). In most countries, immigrants who enter under a normal work permit are not allowed to set up their own business, but in, for example, Italy, they are allowed to do so. Also in Italy third country immigrant entrepreneurs can apply for business permissions from abroad, but in that case there is an annual quota and they also have to meet certain criteria (EMN, 2007).

### *Low skilled immigrants*

Most EU member states draw primarily on intra European migration to meet their demand for low and medium skilled immigrants. Due to previous experiences with the long term consequences of low skilled migration from third countries they were, and are, reluctant to admit more of these immigrants than were already arriving through routes over which they have little discretionary power. In addition to large numbers of low and medium skilled immigrants from the new member states, Southern European countries like Italy and Spain also admitted considerable numbers of immigrants from third countries. For those sectors, such as agriculture, in which additional labour demand is concentrated in particular seasons, some member states have set up seasonal work programmes. For example the UK has a quota based Seasonal Work Programme which is open only to Romanian and Bulgarian citizens.<sup>67</sup> Germany has a seasonal work programme open for citizens of the recently accessed Eastern European EU8 member states (OECD, 2008a, 2009). The Spanish “contingente” program offers third country nationals, from countries with which bilateral agreements are signed, the possibility of working in Spain for no more than 9 months, after which they have to return to their country of

---

<sup>65</sup> The Commission proposes to create a general fast track procedure for these third country temporary highly skilled immigrants. It also aims to offer attractive residence conditions and an easier system for intra-EU mobility and a legal status and similar working conditions as employees of EU companies. EU member states would maintain the authority to decide on the number of immigrants accepted through this scheme. The commission also proposes measures to ensure that this type of highly skilled third country immigration remains temporary (European Commission, 2010a).

<sup>66</sup> Since 1999, the EU has laid out its plan for the coordination of migration and asylum procedures in five year plans which are named after the city in which they were signed: Tampere, the Hague and Stockholm. These five-year programs contain political priorities, proposals, and deadlines, making them a roadmap for concrete proposals from the commission rather than strict policy documents. The Stockholm plan covers the period 2009-2014. The blue card, the proposed regulations on intra-company transfers is another element of the part of the plan which deals with labour migration. Other regulations that are or will be proposed deal with harmonized regulations on paid trainees and seasonal workers. One of the most significant and far-reaching elements of the Stockholm plan is the commitment to give third-country nationals "rights and obligations comparable to those of EU citizens" by 2014 (Collett, 2010).

<sup>67</sup> The UK also has a sector based scheme for low skilled workers in food processing and hospitality. Immigrants from Bulgaria and Romania filled up most of the quotas for this program (Salt, 2009).

origin.<sup>68</sup> Returned workers have an easier route to return to Spain and have a greater chance of getting a permanent work permit after several years (MTIN, 2009a). The European Commission recently proposed a new directive to harmonize the European regulations for third country seasonal workers and to guarantee their rights for proper working conditions (European Commission, 2010b).

## B. Attraction

European governments share their special interest in attracting highly skilled immigrants with other OECD governments, like the United States, Canada and Australia. In fact, the European Union as a whole is not very successful in attracting the highly skilled when compared to the United States.<sup>69</sup> Countries of origin are also trying to retain or promote the return of their highly skilled nationals. In the context of the global competition which ensues from this, it is, therefore, not only important the extent that the EU and its member states are able to select migrants, it is also important to know whether it manages to attract the most talented immigrants in the first place. This section will discuss the factors that influence whether the European member states succeed in attracting super highly skilled and highly skilled immigrants from third countries.

The first element that is important for the performance of this function ties in with the previous section. The prevailing migration procedures can have considerable influence on the extent to which potential highly skilled immigrants decide on whether to select a particular destination country. Several European Member states have, therefore, set up special immigration tracks for this particular group, as was already discussed in the previous section. Some of the member states, such as Greece, Ireland, Italy, the Netherlands and the UK, offer highly skilled immigrants simplified and faster procedures for entering the country and remaining there (EMN, 2007). The introduction of the blue card will facilitate the enlargement of the pool of highly skilled immigrants from which the various member states can draw. However, the EU member states also compete among themselves for highly skilled labour both from within and outside the EU.

One of the central strategies used by member states to become more attractive for highly skilled immigrants from third countries, as well as from other member states is to offer favourable tax regimes. For approximately ten years, the Dutch government has offered highly skilled foreign

---

<sup>68</sup> In 2009, as a response to the lower demand for labour immigrants following the economic crisis, Spain lowered the annual quota for non-seasonal workers to 901 compared to 15,731 in 2008 (Koehler et al, 2010).

<sup>69</sup> While the EU receives 85% of unskilled labour migration in comparison to 5% for the US, the US absorbs 55% of the immigrant engineers, technicians and ICT specialists, while the EU only receives only 5% (Euractiv, 2008). As was shown in table 2, the relative share of EU27 and third country immigrants among the highly skilled population varies strongly between EU member states. Luxembourg, Austria, Belgium, Cyprus and the UK have a relatively large share of non-resident HRSTC workers. Many of these (especially in Luxembourg) are intra EU migrants. The UK has the highest relative share of third country HRSTC. In absolute terms the UK, France and Spain receive most doctoral candidates from other EU countries and third countries, which may be another indicator for the relative attractiveness of these systems to, at least this type of, highly skilled foreign nationals. In the UK, Austria and Belgium doctoral candidates from other EU countries make up relatively large shares of their doctoral candidate population. France, the UK and, to a lesser extent, Belgium and Spain see doctoral students from outside the EU make up relatively large shares of their total doctoral candidate population (Mogu rou & Di Pietrogiacommo, 2008). Among European member states, the UK is probably the most attractive destination for highly skilled immigrants due to the relatively open nature of its economy and labour market, its migration system, the visibility of its universities, its language etc. Sweden, Belgium and the Netherlands are also relatively attractive, though probably to a lesser extent than the UK was, at least until the economic downturn. Countries such as France and Spain are expected to receive large numbers of (super) highly skilled immigrants in part for cultural (and linguistic) reasons. Other big economies, such as Germany, also receive large numbers of highly skilled immigrants at least in absolute terms, but relatively these three countries are considered less attractive destinations than the UK. Other countries, such as, for example, Italy or Greece are in general less attractive destinations for highly skilled immigrants. These countries tend to offer less employment opportunities. Language and openness of the labour market to foreign nationals may also be limiting factors. The immigration systems in place and the provisions provided for (super) highly skilled immigrants also influence the relative attractiveness of the European member states.

nationals working in the Netherlands a 30% discount on income tax for a period of 10 years. One of the motivations for this incentive was to bring net salaries to a similar level as those paid in the United Kingdom and thus increase the Netherlands' relative attractiveness to knowledge immigrants (Mahroum, 2001, EMN, 2007). Other countries adopted similar strategies: e.g. Austria, Belgium, Denmark, France, Finland, Spain and Sweden, all offer groups of highly skilled immigrants tax incentives for a certain period of time in an attempt to remain competitive (EMN, 2007, Mahroum, 2001, OECD, 2007-2010).<sup>70-71</sup> Germany, Greece, Estonia, Ireland, Italy and Latvia, by contrast do not have a special taxation regime for highly skilled third country workers (EMN, 2007). An EU wide harmonization of income taxes for domestic workers or highly skilled immigrants appears unlikely in the near future and this may be one reason why some of the member states will continue to attract more highly skilled immigrants than others. Factors which are not directly related to income such as real estate prices, climate, culture, child support and health care services, may also influence the relative attractiveness of member states to highly skilled immigrants (Mahroum, 2001).

Another approach to attract highly skilled immigrants could be through special recruitment programs. Most EU member states do not have such programs<sup>72</sup> (EMN, 2007). As described previously several member states do offer highly skilled immigrants special advantages within the framework of larger visa or work permit schemes. These can be targeted at highly skilled migrants in general, such as in the UK or the Netherlands, or they can cater for specific niches in their labour market, such as IT experts in France and in Germany's Green Card Initiative (2000-2004), and academics in, for example, Estonia and France (Mahroum, 2001, EMN, 2007). Germany, the UK, several Italian provinces and, previously, France and Sweden, have (or had) signed bilateral agreements with other European countries concerning the recruitment of health workers (EMN, 2006, OECD, 2007). The UK is the only European country which has also signed bilateral agreements with third countries to recruit doctors and nurses (EMN, 2006, OECD, 2007).

In general, the migration system aims to limit and regulate the inflow of immigrants and select candidates applying for immigration. In the case of highly skilled immigrants several countries have attempted to reduce existing barriers and even provide incentives such as the favourable rules on taxation. This may also make these respective countries more attractive to third country immigrants. In the end, however, migration choices will be heavily influenced by the availability of attractive employment opportunities in the companies and research organisations in a country. This could turn into a positive - or negative - feedback loop. Dynamic innovation systems which offer many opportunities for highly skilled immigrants are likely to be relatively attractive. Highly skilled migrants themselves are thought to boost innovation and economic growth. Partially as a result, such host countries may become more attractive to highly skilled immigrants. The presence of highly skilled immigrants in a host system may also make this system more attractive for others because it becomes more multicultural. The presence of migrant communities may also bring other externalities and chain migration, as a result of information flows to prospective migrants about employment opportunities, will likely play a role in highly skilled migration for clusters of expertise. The structure of the labour

---

<sup>70</sup> In Great Britain virtually all non UK citizens - referred to as non domiciled residents - can claim back a considerable share of their income tax contribution while working in the country, though changes have been made in recent years (Mahroum, 2001, Economist, 2008b).

<sup>71</sup> These favourable tax regimes for highly skilled foreign nationals are not always uncontroversial. In Spain, for example, it is said to be mainly benefit foreign football players and has, therefore, been dubbed the "Beckham law" (Cinco Días, 2009, ABC, 2009).

<sup>72</sup> In the UK, the Netherlands, Italy and some Danish regions, organizations in, for example, the health care sector use recruitment agencies to recruit foreign workers (OECD, 2007, EMD, 2006). The representatives of member states or recruitment agencies may also take part in job fairs or pursue other channels to bring their country to the attention of prospective highly skilled immigrants. Denmark has, for example, set up a special centre at its embassy in India to attract highly skilled immigrants (OECD, 2009a).



market,<sup>73</sup> including the degree of labour market protection, wage differentials, degree of meritocracy and the general openness to immigrant workers, can also have an effect on the attractiveness to highly skilled immigrants. Countries in which they are likely to earn substantially higher salaries in absolute or relative terms may be more attractive than countries which adopt a more egalitarian model of income distribution. Some European member states are, therefore, likely to be more attractive and thus benefit more from the inflow of highly skilled immigrants than others. The US, on average, has a greater appeal to the super highly skilled than the EU for this reason. Non economic factors may also play a role in the relative attractiveness of the European member states for highly skilled immigrants. The perception potential immigrants have of destination countries can be influenced by many factors, including, for example, the relative visibility of their universities and companies, language, but also indirect variables such as news reports about public attitudes towards immigrants.

An alternative strategy of attracting highly skilled immigrants is to attempt to retain international students. The advantage of this route for highly skilled migration is that the skills acquired during higher education are likely to be more adapted to the host country, in addition to being recognised by employers directly. Furthermore, going through higher education in the host country is also likely to bestow them with a certain degree of cultural capital. These factors are likely to lead to higher chance of success in the host country's labour market (OECD, 2009a, 2010). Several European member states have taken measures to increase their attractiveness to international students and, following global trends, the numbers of international students have increased considerably over the past decade. Indeed, on average the number of international students in OECD countries has doubled from 2000 to 2007 (OECD, 2010a). A large share of international students comes from other EU member states, but the number of students from third countries has also increased rapidly. In particular, the UK but also France, Germany and the Netherlands host large numbers of third country students. While most international students leave their host country after completing their studies, a considerable share could be retained: between 15 and 30% for Austria, Belgium, France, Germany and the Netherlands (OECD, 2010a). Several member states have adapted their migration policies in a way which allows students to look for work during (e.g. the Czech Republic, France and Sweden) and/or after the completion of their studies (e.g. Finland, Germany, Ireland, The Netherlands, Spain and the UK) (OECD, 2007, 2010, EMN, 2010b).

### **C. The retention of talented workers**

The retention of talented workers relies in part on the extent to which these immigrants can attain permanent residence in their host country and in part on the extent with which they are able to move between employers once they have entered the country.

The duration of residence permits for highly skilled migrants tends to be related to the duration of their employment contract (e.g. in Belgium and the Netherlands). In the Netherlands highly skilled migrants with a permanent contract are granted a five year residence permit which can be renewed after this period expires. In contrast, residence permits of regular (labour) migrants have a one year duration (EMN, 2007). In general, all migrants, including highly skilled immigrants, can apply for permanent residency in EU member states after five years of continuous legal residence (Council of the European Union, 2003a). In Germany third country immigrants with good qualifications (such as engineers and IT specialists) who fill vacancies in shortage areas, can apply immediately for an unlimited settlement permit (Mahroum, 2001, EMN, 2007).

---

<sup>73</sup> It is not unlikely that (super) highly skilled immigrants on average prefer societies with flexible, competitive and meritocratic labour markets with high wage differentials which allow them to maximize their socio-economic gains. For example, Austria is considered to be not very attractive to highly skilled immigrants, in part because wages and career progression generally follow a pronounced seniority scale (EMN, 2007).

European member states take different approaches to immigrants who have become unemployed. In, for example, Greece highly skilled immigrants are expected to leave immediately after their contract is terminated. In other countries, such as the Netherlands, highly skilled third country immigrants can remain for several months after the termination of their contract to look for other work (EMN, 2007). Because the tier 1 of the UK's point based system (PBS) is not tied to a specific employer, immigrants entering through this scheme can stay in the UK to look for work. This is expected to facilitate the retention of this first group of highly skilled workers in the UK. The residence status of other UK immigrants is, instead, fixed to a specific employer (EMN, 2007, OECD, 2007, 2008).

Subject to some limitations a long term resident in an EU member state also has the right to live and work in another member state<sup>74</sup> (Council of the European Union, 2003a). The European blue card will, after its full implementation, not only allow blue card holders to change employers after 18 months, it will also allow them to look for employment in European countries other than the country to which they first migrated (Euractiv, 2008, Collett, 2008, 2009, Council of the European Union, 2009). This will increase the opportunities of highly skilled migrants and reduce their risks of unemployment as well as forced return to their country of origin. It is, therefore, likely to increase the attractiveness of the European Union to highly skilled migrants as well as to increase its ability to retain them.

Whether a migrant chooses to remain in the host country may depend in part on his/her family situation. In most EU member states, except the UK, Ireland and Denmark, the right to family reunification applies to all legally resident foreign nationals, though member states have the possibility to demand that the immigrant has been legally resident for a period of up to two years (Council of the European Union 2003b). In general, highly skilled third country immigrants are allowed to bring their dependent family members (EMN, 2007).<sup>75</sup> In, for example the Netherlands, Belgium, Germany, Ireland, Sweden and the United Kingdom, the spouse of the highly skilled immigrant is allowed to work as well (EMN, 2007). In Spain<sup>76</sup> and the UK, spouses and children have access to free education and health services in the same way as national citizens (EMN, 2007).

Attempts to foster the long term retention of talented migrants often also involves attempts to foster integration in the host country. For the UK's points based system, sufficient knowledge of the English language is a requirement. This is expected to contribute to labour market success and integration. Italy provides prospective immigrants with government sponsored language and culture courses which provide them with better chances of being included in the national entry quota (EMN, 2007, OECD, 2006, 2008). The Netherlands requires prospective immigrants to take a test about their knowledge of the host country's language and culture, although this does not apply for highly skilled labour immigrants in the "knowledge migrant category" who meet certain conditions. This examination abroad is to be followed by further civic integration after entry. The Netherlands as well as, for example, Denmark, Germany, the Czech Republic, Austria and France, provide (compulsory or voluntary) integration and/or language courses to immigrants who are already legally resident (EMN, 2007, OECD, 2006, 2008, 2010). In Denmark, local government bodies who are responsible for the integration of migrants, receive a considerable sum of money for each immigrants who successfully passes the exam (OECD, 2010a). In the UK and Denmark, migrants who apply for naturalisation also

---

<sup>74</sup> The "free movement of labour" does not apply to citizens from third countries as residence and work permits cannot be transferred to other EU countries. They are allowed to move for a period of up to three months, if they have a residence permit. Since 2003 long term residents have been allowed to work in other member states beyond the three month period even if member states retain the right to limit the number of residence permits and the possibility of giving preference to EU nationals for employment purposes (Brücker et al, 2001, European Commission, 2002, European Council, 2003).

<sup>75</sup> In some countries such as Greece and Ireland, the right to directly bring dependents initially applies only to some subgroups of highly skilled workers. The other subgroups can only apply for family reunification after some years of legal stay providing they have a stable and regular income (EMN, 2007)

<sup>76</sup> In the case of Spain this actually applies to all immigrants including those who do not have a legal residence status (Romero-Ortuño, 2004).

have to show knowledge of the language and society. Programs<sup>77</sup> to foster the integration of long term residents are expected to have a positive effect on both the integration of the immigrant in the host society as well as on his/her long term labour market performance.

The naturalisation of long term resident immigrants offers the most permanent form of retention. The rate at which naturalisation occurs differs considerably between host countries as well as between immigrants from different countries of origin. Sweden and the Netherlands have the highest rate of naturalisation. Over the past decade the rate of naturalisation in the EU has increased. In particular Belgium and Sweden have seen a large increase after changes in their legislation made naturalisation easier (OECD, 2010a)<sup>78</sup>. Highly educated immigrants have higher rates of naturalisation than immigrants with lower levels of education<sup>79</sup> and the acquisition of citizenship appears to have a positive effect on the labour market performance of immigrants (OECD, 2010a). This may lead to other member states promoting or facilitating the route to citizenship in the future.<sup>80</sup>

Attempts to retain highly skilled third country workers and students bring up the question of the potential costs of permanent migration to their country of origin. The EU Commission and some member states may want to limit the negative impact of the "brain drain" on countries of origin as this could hamper their development (EMN, 2007, European Parliament, 2008, Collett, 2010). The circulation of highly skilled migrants may bring certain advantages to countries of origin including the transfer of skills. Also, in the case of permanent migration, there may be benefits that partially off-set the loss of these highly skilled workers such as remittances. While most European countries do not have a policy to promote the return of legally resident, highly skilled immigrants there are some organisations which offer support to those who wish to do so (EMN, 2007). For example, the UK does follow ethical recruitment principles when attracting health professionals and has a bilateral agreement with South Africa which is designed to lead to the return of health professionals (EMN, 2006, OECD, 2007).

An additional motivation to take into account the needs of countries of origin is that bi- or multi-lateral agreements between host and sending countries could improve the management of migration flows by facilitating temporary migration and helping to counteract illegal immigration. The EU is increasing its cooperation with third countries in the area of migration management (European Commission, 2007c, Cassarino, 2009, Collett, 2010). There are also several countries which have set up programs to foster the return of unemployed (low skilled) immigrants as will be discussed in the next section.

---

<sup>77</sup> See also EU commission (2007) for an overview of measures taken by EU member states to foster integration of third country immigrants.

<sup>78</sup> The Finnish government recently proposed amendments to its Nationality Act which would reduce the time foreign nationals would need to have spent in Finland before being eligible for naturalization. In addition those who can show an adequate knowledge of Finnish or Swedish would be allowed naturalization a year earlier (Ministry of the Interior, 2010 in EMN, 2010b).

<sup>79</sup> In most Western European countries between 40% and 68% (the latter is the case in France) of low educated migrants have not taken up citizenship. The Scandinavian countries show different shares as 33%, 26% and 19% of low educated immigrants in Denmark, Sweden and Norway had not taken up citizenship. Among highly educated immigrants these shares range between 00 and 23. Again the Scandinavian countries show different rates of naturalization as 26, 27 and 53% of highly educated immigrants in Denmark, Sweden and Norway respectively had not taken up citizenship. These are data from 2007 in OECD (2010a).

<sup>80</sup> In general, however, naturalization has become more difficult or at least tied to more formal demands such as citizenship tests across the EU as a whole even if it has become easier in some individual member states (Bauböck and Wallace Goodman, 2010)

## V. Assessing the impact of the economic crisis and looking forward.

The economic downturn and the (in many cases) jobless recovery have changed some assumptions about the contribution of immigrants at different skill levels. Economic conditions and employment figures are unlikely to improve quickly. As a result the need for labour migration will be relatively low as employers will find it easier to recruit necessary workers at various skill levels from the part of the resident population in unemployment (Papademetriou et al, 2009, OECD, 2009a, Global Migration Group, 2009a, Euractiv, 2010).

An aging population, rapid technological change, and economic restructuring will nonetheless continue to lead to shortages in some parts of the labour market in both the short and longer term (OECD, 2009a). Economic crises often reinforce or speed up existing trends in economic restructuring which may have its effects on short and longer term labour demands (OECD, 2009a). While absolute labour demand may remain at low levels, the demand for different types of workers may be changing. CEDEFOP's (2010) long term projections of labour market demand indicate that there will be additional demand for especially highly skilled, but also low skilled labour. Further, even in a context of high unemployment levels such as the present, there will continue to be shortages in some occupations and some regions. Only part of this demand can probably be met through the increased training of the domestic population, by increasing labour market participation and by facilitating intra-European mobility. International competitiveness considerations and the aforementioned demographic changes may, therefore, continue to provide strong incentives for allowing and even for promoting some types of third country labour immigration when the economy picks up. On the other hand, a lack of immigrants to take up vacancies might necessitate technological innovation, economic restructuring or improvements in working conditions. The decision to allow for substantial inflows of low skilled labour migration from third countries to work in some sectors, may, therefore, be tied to long term policy strategies, concerning the type of economic activities in which European member states can realistically hope and wish to compete with countries in other parts of the world.

The growing population of especially low skilled potential immigrants in countries of origin, in combination with persisting income inequalities and the information on employment and migration opportunities, that flows from existing migrant communities to their home countries, are likely to ensure that substantial numbers of low skilled immigrants will continue to come to the EU, either through legal or illegal channels (Papademetriou et al 2009). Considering the differences in migration systems as well as the differences in employment opportunities, which arise in part from the variations in their innovation systems, it is likely that not all European member states will receive highly and low skilled immigrants to the same extent.

In the short term, the number of immigrants entering through migration programs, which demand a job offer, is declining due to the economic difficulties and high levels of unemployment. Employers are less likely to offer such contracts and, as a result, the number of permits has declined (OECD, 2009a). In response to the economic downturn, the governments of several European member states have also taken additional measures to limit the inflow of immigrants.<sup>81</sup> Some, such as Spain, Italy, Slovenia and Portugal, have tried to regulate the inflow of immigrant by adjusting numerical limits.

---

<sup>81</sup> The degree to which a government can quickly change its policies to match the changing economic conditions depends in part on the nature of the immigration system in place. In most member states migration policies are linked to labour market indicators such as vacancy rates. Numerical limits or occupations on shortage lists tend to be reviewed on a regular basis, with implications for the quotas or targets in place. Changes made in shortage lists, numerical limits, or the criteria applied in labour market tests, can have a quick impact on the influx of labour immigrants (OECD, 2009a). Migration policies may also be subject to *ad hoc* legislative measures which vary in terms of the delay with which they are actual implemented (OECD, 2009a).

Another related approach, taking by, for example, Italy, Spain<sup>82</sup>, Ireland and the UK, is to adjust their job shortage lists. For example, Ireland and the United Kingdom has also strengthened their labour market tests. Austria, Belgium, Denmark and Germany have extended the transition period for the recently accessed (Eastern European) EU member states – and the UK has done the same for Bulgaria and Rumania. Italy has taken additional measures to reduce non-discretionary flows. Spain, the Czech Republic and Denmark, promote the return of (unemployed) immigrants by offering them financial incentives, an approach with which the UK is also experimenting for one group of prospective immigrants (members of a group of immigrants awaiting entry at the other side of the Channel). Finally some member states are said to have limited the possibilities of changing status and renewing permits (Fix et al, 2009, Plewa, 2009, Awad, 2009, OECD, 2009a, 2010, Loyal, 2010, Sumption, 2010, Cerna, 2010, Koehler et al, 2010, EMN, 2010d)<sup>83</sup>. On the other hand, some governments, such as Spain, have taken a more flexible approach towards the renewal of residence permits to avoid migrants losing their regular status due to unemployment (MTIN, 2010b). In Ireland the time unemployed immigrants can look for a new job was doubled from 3 to 6 months in August 2009 (Loyal, 2010, Koehler et al, 2010)). Sweden is an exception as it relaxed its migration policies for third country immigrants in 2008 and did not change them again in response to the crisis<sup>84</sup> (EMN, 2010a). Due to the economic crisis proposals for changes in the Finnish immigration system were delayed until 2009 (with implementation envisaged in 2011)<sup>85</sup> (EMN, 2010b). Estonia has also postponed changes in its immigration systems for this reason (EMN, 2010d).

Also, not all migration channels for low skilled immigrants will necessarily be affected.<sup>86</sup> The existing temporary and seasonal migration programs are likely to be continued, even if the number of immigrants allowed entry may be reduced, because there are insufficient local takers for, say, agricultural work, even in times of high unemployment (OECD, 2009a). In the longer term, countries like Spain which have received large numbers of low skilled immigrants in the past decade are expected to make more fundamental and long term policy changes than those countries which were already imposing stricter rules of entry at an earlier stage (Papademetriou et al, 2009). Future changes to migration regimes in other member states could include additional temporary schemes for low skilled immigrants, as these could allow for the management of migration in a way that better takes into account variations in economic conditions.<sup>87</sup> In order to mobilize the relatively large number of

---

<sup>82</sup> The Spanish “Catalogue of Shortage Occupations”, which is based on unmatched demands of the Public Employment Services, is the Spanish government’s main instrument to adjust labour immigration. Until 2007 it contained a long list of occupations, but since 2008 the list has become shorter and shorter. At present, it consists only of a few occupations in the health sector. In short, the labour market has stopped attracting foreign workers and, therefore, the inflow has almost stopped (MTIN, 2010b). Estimates of the number of foreign nationals who are offered jobs in Spain while residing abroad (“contracción en origen”) show a decline from 70,444 in 2007 to 4,429 in 2009 (MTIN in Ferrero-Turrión, 2010). Still the number of immigrants in Spain continued to increase between 2008 and 2010, though at a slower rate, (mainly) due to family reunification and existing migration networks (MTIN in Ferrero-Turrión, 2010, Koehler et al, 2010).

<sup>83</sup> See Koehler et al (2010) for an overview of developments in immigration policies and measures in the period in which the economic crisis took place.

<sup>84</sup> Inflows of third country immigrants did not change much after this change in regulation, probably in part due to lower demand for migrant workers as a result of the economic slowdown (migration is demand driven). When the economy picks up again, more immigrant workers may start to arrive to Sweden (EMN, 2010a).

<sup>85</sup> These proposed changes are meant to ease the immigration process and/or the implementation of the migration regulations (EMN, 2010b).

<sup>86</sup> Due to the crisis, salaries for low skilled jobs have decreased. In some countries this has led to a demand for low skilled labour immigrants because native workers are uninterested in taking these low paid jobs (EMN, 2010d).

<sup>87</sup> Temporary migration programs for low skilled immigrants have not always, in the past, had the expected outcome, i.e. considerable number of immigrants settled in their host country permanently. The set up and implementation of any new programs would have to take into account these previous experiences from various European member states to help ensure that the outcomes of these programs meet their objective. As discussed in section 2, the OECD (2008, 2009) expects that employers will not be happy with temporary programs if the labour needs are of a permanent nature as repeated training of new immigrants would add to their costs.

unemployed among existing migrant populations and second generation migrants, investments in additional training opportunities may offer some relief in several Western European member states. It is unclear to what extent immigrants have been able to benefit from the economic stimulus measures and training provisions put in place in the European member states as part of the European Economic Recovery Plan (Koehler et al, 2010).

It may not always be possible to find high and medium skilled workers with the desired skill set among workers, who have become unemployed, because retraining domestic workers for work in, for example, the health sector can take a considerable amount of time. For such sectors, shortages may continue to be addressed through labour immigration, until the domestic education system produces sufficient numbers of graduates (OECD 2008b in OECD, 2009a). In the medium and long term, the need for medium skilled workers is expected to decrease in the EU member states (CEDEFOP, 2010). New demand, which results in part from the retirement of existing workers, can probably be met by the native born population complemented by intra-EU migration. The demand for highly skilled immigrants is expected to increase in the medium and long term, but the supply of highly skilled workers from countries of origin may not be sufficient to meet all the demand in the developed world. The programs discussed in section four to promote the entry and retention of (super) highly skilled immigrants should be seen in this light. Point based systems (such as those in the UK and the Netherlands) appear most suited to increase the available stocks of highly skilled immigrants in host countries (Papademetriou, 2007). Because they allow highly skilled immigrants to move between employers they are also likely to help retain these migrants for their host systems. Likewise the EU blue card system may help to increase the attractiveness of Europe as a whole as well as its ability to retain these individuals.<sup>88</sup> The internationalization of European higher education systems and the increase in the number of international students in European universities can also play an important role in attracting and retaining highly skilled immigrants. Some member states manage better at attracting and retaining these students than other member states, which is partially related to their language, the reputation of their higher education system, the absorptive capacity of their innovation system, as well as to the migration system they have put in place. The formation of a more integrated European education system, in combination with harmonised migration regulations, that would allow third country students to remain and work in any of the European member states, could help to increase the retention of these students in the European Union (Parkes & Angenendt, 2010). A lack of sufficient numbers of suitably trained highly skilled workers and entrepreneurs can form a real impediment for long term international competitiveness and economic growth. It remains unclear whether European member states are and will be able to attract sufficient numbers and the most talented (super) highly skilled immigrants to meet their economic demands and goals. For various reasons, discussed at earlier stages in this paper, the US may continue to be more attractive to (super) highly skilled immigrants and both the EU and its member states will have to continue to increase their efforts to attract a sufficiently large share of these workers.

According to an ILO report, measures taken by several European governments to restrict immigration in the wake of the economic crisis also aim to reduce the inflow of highly skilled immigrants, in part to prevent labour market competition (Cerna, 2010). Both the UK and the Netherlands have, for example, raised their income requirements for highly skilled immigrants with the aim to reduce the intake.<sup>89</sup> On the other hand there are also countries which have extended their channels for the immigration of highly

---

<sup>88</sup> Some analysts doubt the commitment of EU member states to pooling sovereignty over the issue of highly skilled migration in the context of the economic crisis (Parkes & Angenendt, 2010). In the medium and long term, harmonising regulations appears a very important strategy for enhancing the attractiveness of the union to this group of immigrants, who it needs for its economic development.

<sup>89</sup> The recent changes in the UK's points-based system were designed to reduce the number of highly skilled third country migrants by half (Global Migration Group, 2010). In July 2010 the UK imposed a further numerical limit on the monthly numbers of tier 1 permits approved to new applicants. This intermittent measure will be in effect until at least March 2011 (UK Home Office, 2010).

skilled workers. E.g. Germany adopted the labour migration control act which gives highly qualified workers from both the new Member states (EU-12) and third countries the right to seek permanent residency. These immigrants also have greater possibilities to bring in their family members (Koehler et al, 2010). In general it appears that the crisis has had little effect on policies and measures related to highly skilled migration to the EU member states (EMN, 2010d).

The economic crisis has not ended the need for highly skilled immigrants and the EU member states thus have to take into account medium and long term considerations (OECD, 2009a). During the recovery phase the demand for highly skilled immigrants is likely to increase again. However, it may not always be possible to quickly respond to this due to previous policy changes (Awad, 2009, Cerna, 2010). The short term response to the economic crisis could, therefore, hamper medium and long term policy needs. Such needs could, for example, include smaller and more targeted inflows for particular sectors (OECD, 2009a, Papademetriou et al, 2009). In general, the policy responses to the economic downturn in terms of labour migration needed to find a midway between adapting the rules to the changing labour market conditions and keeping channels for labour migration open for those parts of the economy where recruitment difficulties are structural and where demand continued to exist or was likely to reemerge when the economy would pick up again (OECD, 2009a, 2009b). Especially when it comes to (super) highly skilled immigrants and entrepreneurs it was important for governments to take into account the long term economic benefits these immigrants can bring when adapting their policies. In general, it appears that the governments of European member states have been well aware of the longer term need for labour immigration. While temporary measures were taken to restrict inflows (e.g. reduction in the numerical limits that are tied to labour demand) few actual policy changes were made in migration regimes in response to the economic crisis. Existing policy trends, such as measures to allow for highly skilled immigrants for sectors in which there exist structural shortages as well as short term migration for low skilled immigrants have, if anything, been reinforced by the crisis (EMN, 2010d, Koehler et al, 2010). As a consequence it will be possible to respond relatively quickly to a changed demand for labour migration. European governments thus appear to have been well aware of the need for highly skilled immigrants to address expected future shortages and to have taken this into account when implementing their short term response to the changed situation that arose from the economic crisis.

## Bibliography

- ABC, 2009, La reforma de la “Ley Beckham” divide el congreso y subleva a los clubs de futbol. ABC 05/11/2009. <http://www.abc.es/20091105/deportes-futbol/reforma-beckham-divide-congreso-20091105.html>
- Alston, J.M., Marra, M.C., Pardey, P.G., & Wyatt, T.J. 2000. Research returns redux: A meta-analysis of the returns to agricultural R&D. *Australian Journal of Agricultural and Resource Economics*, 44(2):185-215.
- Andersson, P., Wadensjö, E. 2004. Self-Employed Immigrants in Denmark and Sweden: A Way to Economic Self-Reliance? IZA Discussion Paper No. 1130, Institute for the Study of Labor (IZA), April 2004. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=542822](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=542822)
- Awad, I. 2009. The global economic crisis and migrant workers: impact and response. *International Migration Programme*, Geneva: ILO. [http://www.ilo.org/public/english/protection/migrant/download/global\\_crisis.pdf](http://www.ilo.org/public/english/protection/migrant/download/global_crisis.pdf)
- Bauböck, R., Wallace Goodman, S., Naturalisation, EUDO CITIZENSHIP Policy Brief No. 2, European Union Democracy Observatory on Citizenship, San Domenico di Fiesole: Robert Schuman Centre for Advanced Studies. [http://eudo-citizenship.eu/docs/policy\\_brief\\_naturalisation.pdf](http://eudo-citizenship.eu/docs/policy_brief_naturalisation.pdf)
- Borjas, G.J. (1995) The Economic Benefits from Immigration, *The Journal of Economic Perspectives*, 9(2): 3-22.
- Boswell, C., Stiller, S., Straubhaar, T. 2004. *Forecasting Labour and Skills Shortages: How Can Projections Better Inform Labour Migration Policies?* Hamburg: Hamburg Institute of International Economics. [http://www.hwwi.org/fileadmin/hwwi/Publikationen/Dossier/Demografie/Boswell\\_Stiller\\_Straubhaar\\_Forecasting\\_Labour\\_and\\_Skills\\_Shortages.pdf](http://www.hwwi.org/fileadmin/hwwi/Publikationen/Dossier/Demografie/Boswell_Stiller_Straubhaar_Forecasting_Labour_and_Skills_Shortages.pdf)
- Brücker, H., Epstein, G.S., McCormick, B., Saint-Paul, G., Venturini, A., Zimmermann, K.F., 2001, *Managing Migration in the European Welfare State*. Trieste: Fondazione Rodolfo DeBenedetti. [http://www.frdp.org/upload/file/paper1\\_23jun01.pdf](http://www.frdp.org/upload/file/paper1_23jun01.pdf)
- Brücker, H., Baas, T., Beleva, I., Bertoli, S., Boeri, T., Damelang, A., Duval, L., Hauptmann, A., Fihel, A., Huber, P., Iara, A., Ivlevs, A., Jahn, E.J. Kaczmarczyk, P., Landesmann, M.E., Mackiewicz-Lyziak, J., Makovec, M., Monti, P., Nowotny, K., Okolski, M., Richter, S., Upward, R., Vidovic, H., Wolf, K., Wolfeil, N., Wright, P., Zaiga, K., Zylicz, A. 2009. *Labour mobility within the EU in the context of enlargement and the functioning of the transitional arrangements*. European Integration Consortium: IAB, CMR, fRDB, GEP, WIFO, WIIW. Vienna: WIIW. <http://publications.wiiw.ac.at/?action=publ&id=details&publ=LMS1>
- Burkert, C., Migration, integration and the Labour Market after the recession in Germany, in Papademetriou, D.G., Sumption, M., Terrazas, A. (eds) *Migration and immigrants two years after the financial collapse: Where do we stand?* Washington (DC): Migration Policy Institute
- Cassarino, J.P. 2009. EU Mobility Partnerships: Expression of a New Compromise, *Migration information source*, September 2009. <http://www.migrationinformation.org/Feature/display.cfm?ID=741>
- CBS. 2010. Crisis remt migratie en verhuizingen. Persbericht, woensdag 10 februari 2010. Den Haag: Centraal Bureau voor de Statistiek. <http://www.cbs.nl/nl-NL/menu/themas/bevolking/publicaties/artikelen/archief/2010/2010-006-pb.htm>



- CEDEFOP. 2010. *Skills supply and demand in Europe: medium-term forecast up to 2020*. Thessaloniki: CEDEFOP European Centre for the Development of Vocational Training. Luxembourg: Publications Office of the European Union.  
[http://www.cedefop.europa.eu/EN/Files/3052\\_en.pdf](http://www.cedefop.europa.eu/EN/Files/3052_en.pdf)
- Cerna, L. 2010. *Policies and practices of highly skilled migration in times of the economic crisis*. Geneva: International Labour Office  
<http://www.ilo.org/public/english/protection/migrant/download/imp/imp99.pdf>
- Cervantes. M. 2004. Scientists and engineers, Crisis, what crisis? *OECD observer*.  
[http://www.oecdobserver.org/news/fullstory.php/aid/1160Scientists\\_and\\_engineers.html](http://www.oecdobserver.org/news/fullstory.php/aid/1160Scientists_and_engineers.html)
- Champion, A. 2008. The Changing Nature of Urban and Rural Areas in the UK and other European Countries. United Nations Expert Group Meeting on Population Distribution, Urbanization, Internal Migration and Development. New York, 21-23 January 2008.  
[http://www.un.org/esa/population/meetings/EGM\\_PopDist/P07\\_Champion.pdf](http://www.un.org/esa/population/meetings/EGM_PopDist/P07_Champion.pdf)
- Cinco Dias. 2009. La nueva 'ley Beckham' tendrá en cuenta el sueldo "previsible" Cinco Dias. 06/11/2009. [http://www.cincodias.com/articulo/economia/nueva-ley-Beckham-tendra-cuenta-sueldo-previsible/20091106cdscdieco\\_5/cdseco/#](http://www.cincodias.com/articulo/economia/nueva-ley-Beckham-tendra-cuenta-sueldo-previsible/20091106cdscdieco_5/cdseco/#)
- Collett, E. 2008. The Proposed European Blue Card System: Arming for the Global War for Talent? *Migration information Source*, January 2008.  
<http://www.migrationinformation.org/Feature/display.cfm?id=667>
- Collett, E. 2009. Blue Cards and the global battle for talent. *European Policy Centre Commentary*, May 2009.  
[http://www.epc.eu/documents/uploads/41255650\\_Blue%20Cards%20and%20the%20global%20battle%20for%20talent.pdf](http://www.epc.eu/documents/uploads/41255650_Blue%20Cards%20and%20the%20global%20battle%20for%20talent.pdf)
- Collett, E. 2010. The European Union's Stockholm Program: Less Ambition on Immigration and Asylum, But More Detailed Plans. *Migration information resource*, January 2010.  
<http://www.migrationinformation.org/Feature/display.cfm?ID=768>
- Constant, A., Zimmermann, K.F. 2006. The making of entrepreneurs in Germany: are native men and immigrants alike? *Small Business Economics*, 26: 279–300
- Constant, A., Zimmermann, K.F. 2005. Immigrant Performance and Selective Immigration Policy: A European Perspective. *National Institute Economic Review*. 194(1):94-105
- Council of the European Union. 2002. Presidency conclusions of the Barcelona European Council of 15 and 16 March 2002. Brussels: Council of the European Union  
[http://www.consilium.europa.eu/ueDocs/cms\\_Data/docs/pressData/en/ec/71025.pdf](http://www.consilium.europa.eu/ueDocs/cms_Data/docs/pressData/en/ec/71025.pdf)
- Council of the European Union. 2003. Council Directive 2003/109/EC of 25 November 2003 concerning the status of third-country nationals who are long-term residents. Brussels: Council of the European Union.  
[http://europa.eu/legislation\\_summaries/justice\\_freedom\\_security/free\\_movement\\_of\\_persons\\_asylum\\_immigration/l23034\\_en.htm](http://europa.eu/legislation_summaries/justice_freedom_security/free_movement_of_persons_asylum_immigration/l23034_en.htm)
- Council of the European Union. 2003b. Council Directive 2003/86/EC of 22 September 2003 on the right to family reunification. Brussels: Council of the European Union.  
[http://ec.europa.eu/justice\\_home/fsj/immigration/family/fsj\\_immigration\\_family\\_en.htm](http://ec.europa.eu/justice_home/fsj/immigration/family/fsj_immigration_family_en.htm)
- Council of the European Union. 2005. Council Directive 2005/71/EC of 12 October 2005 on a specific procedure for admitting third-country nationals for the purposes of scientific research. Brussels: Council of the European Union.  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32005L0071:EN:NOT>

- Council of the European Union. 2009. Council Directive 2009/50/EC of 25 May 2009 on the conditions of entry and residence of third-country nationals for the purposes of highly qualified employment. Brussels: Council of the European Union <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:155:0017:0029:EN:PDF>
- Dobson, J., Latham, A., Salt, J. 2009. *On the move? Labour migration in times of recession What can we learn from the past?* London: Policy Network <http://www.policy-network.net/uploadedFiles/Publications/Publications/On%20the%20move%20-%20Labour%20migration%20in%20times%20of%20recession.pdf>
- Dumont, J.C. 2009. International Migration and the Financial Crisis: Understanding the Links and Shaping Policy Responses, Paper presented at the eighth coordination meeting on international migration, New York: United Nations. November 16-17, 2009. [http://www.un.org/esa/population/meetings/eighthcoord2009/OECD\\_Dumont.pdf](http://www.un.org/esa/population/meetings/eighthcoord2009/OECD_Dumont.pdf)
- Economist. 2008a. Immigration and the economy, Gross domestic problem? The pie has got bigger, but more people are taking a slice. *The Economist*. April 3, 2008. [http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story\\_id=E1\\_TDJGGTNV](http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story_id=E1_TDJGGTNV)
- Economist. 2008b. Not now, Darling - Britain has botched the taxation of its rich foreigners. *The Economist*. March 13, 2008 [http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story\\_id=E1\\_TDRVPVNV](http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story_id=E1_TDRVPVNV)
- Economist. 2008c. Migration, A turning tide? Many of the past decade's migrants to Europe and America are beginning to go home again. *The Economist*, June 26, 2008. [http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story\\_id=E1\\_TTGTQDGN](http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story_id=E1_TTGTQDGN)
- Economist. 2008d. Poles depart, The largest wave of immigration in British history is petering out, and may soon reverse. But east European migrants have left a lasting mark, *The Economist*, August 28, 2008. [http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story\\_id=E1\\_TNDTDDJV](http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story_id=E1_TNDTDDJV)
- Economist. 2008f. Educating migrant children, Huddled classes. How migrants fare in school, and what schools can learn from them, *The Economist*. September 11, 2008. [http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story\\_id=E1\\_TNNDRGPT](http://www.economist.com/research/articlesBySubject/displaystory.cfm?subjectid=894664&story_id=E1_TNNDRGPT)
- Economist. 2009. People protectionism. *The Economist*. 1 July 2009. <http://www.economist.com/node/13938782>
- Economist Intelligence Unit, 2009, Estimating potential labour shortage and supply in the European
- Economist, 2010a, From hoarding to hiring, *The Economist*, Oct 7th 2010, [http://www.economist.com/node/17173957?story\\_id=17173957](http://www.economist.com/node/17173957?story_id=17173957)
- Economist, 2010b, GERMANY ECONOMY
- Economic Area, A report for the Home Office Migration Advisory Committee. London (UK). <http://www.ukba.homeoffice.gov.uk/sitecontent/documents/aboutus/workingwithus/mac/estimate-potential-labour-short/estimate-potential-labour-short?view=Binary>
- Edquist, C., Johnson, B. 1997. Institutions and Innovations in Systems of Innovation, in Edquist, C. ed. *Systems of Innovation, Technologies, Institutions and Organizations*. London: Pinter.
- Eiro, 2008, Sharp downturn in construction sector, european industrial relations observatory online. . <http://www.eurofound.europa.eu/eiro/2008/10/articles/es0810039i.htm>.

- El País, 2010a, CC OO denuncia el recorte en I+D y pide volver al nivel de 2008, El País 15 October 2010, [http://www.elpais.com/articulo/sociedad/CC/OO/denuncia/recorte/I/D/pide/volver/nivel/2008/elpepusoc/20101015elpepusoc\\_20/Tes](http://www.elpais.com/articulo/sociedad/CC/OO/denuncia/recorte/I/D/pide/volver/nivel/2008/elpepusoc/20101015elpepusoc_20/Tes)
- El País, 2010b, El recorte acumulado en I+D ahoga el avance de la ciencia, El País 13 Oct 2010, [http://www.elpais.com/articulo/sociedad/recorte/acumulado/I/D/ahoga/avance/ciencia/elpepisoc/20101013elpepisoc\\_3/Tes](http://www.elpais.com/articulo/sociedad/recorte/acumulado/I/D/ahoga/avance/ciencia/elpepisoc/20101013elpepisoc_3/Tes)
- El País, 2010c, Garmendia dice que el Presupuesto salva la I+D pese al ajuste, El País 06 Oct 2010, [http://www.elpais.com/articulo/sociedad/Garmendia/dice/Presupuesto/salva/I/D/pese/ajuste/elpepisoc/20101006elpepisoc\\_7/Tes](http://www.elpais.com/articulo/sociedad/Garmendia/dice/Presupuesto/salva/I/D/pese/ajuste/elpepisoc/20101006elpepisoc_7/Tes)
- EMN. 2006. *EMN Synthesis report: Managed Migration and the Labour Market – The Health Sector*. Brussels: European Migration Network  
<http://emn.sarenet.es/Downloads/prepareShowFiles.do;jsessionid=AF381B05C095CDDC32086D3DDF388527?directoryID=71>
- EMN. 2007. *EMN Synthesis Report: "Highly-Skilled Workers": Conditions of Entry and Residence of Third Country Highly-Skilled Workers in the EU*. Brussels: European Migration Network  
<http://emn.sarenet.es/Downloads/prepareShowFiles.do;jsessionid=AF381B05C095CDDC32086D3DDF388527?directoryID=103>
- EMN. 2010a. Satisfying Labour Demand through Migration, country report Sweden. European migration network.  
<http://www.migrationsverket.se/download/18.6332790112ab7633e5f800010380/EMN+study+Satisfying+Labour+Demand+through+Migration.+Final.+SE+EMN+NCP.Eng..pdf>
- EMN. 2010b. Satisfying Labour Demand through Migration, country report Finland. European migration network.
- EMN. 2010c. Satisfying Labour Demand through Migration, country report Slovak Republic. European migration network (Draft, forthcoming).
- EMN, 2010d. Personal communication with the service provider of the European Migration Network. Madrid-Brussels. 5 November 2010.
- EMN. 2010e. Satisfying Labour Demand through Migration, synthesis report. European migration network. (Draft, Forthcoming).
- ETF. 2010. Legal migration and its skills dimension. *Inform.* June, 2010.  
<http://www.etf.europa.eu/etfblog.nsf/>
- Euractiv. 2007. The EU's labour-shortage 'time bomb'. *Euractiv.com*. June 2007.  
<http://www.euractiv.com/en/social europe/eu-labour-shortage-time-bomb/article-164261>
- Euractive. 2008. An EU 'Blue Card' for high-skilled immigrants? *EurActive.com*. April, 2008.  
<http://www.euractiv.com/en/social europe/eu-blue-card-high-skilled-immigrants/article-170986>
- Euractiv. 2009. Free movement of labour in the EU 27. 20. *EurActive.com*. August, 2009.  
<http://www.euractiv.com/en/social europe/free-movement-labour-eu-27/article-129648>
- Euractiv. 2010. Economists predicting jobless recovery. *EurActive.com*. January, 2010.  
<http://www.euractiv.com/en/enterprise-jobs/economists-predicting-jobless-recovery/article-188958>
- European Commission. 1997. The Competitiveness of the Construction Industry. Brussels: European Commission. (97) 539 final.
- European Commission. 2002. Communication from the Commission, Free movement of workers – achieving the full benefits and potential, COM(2002) 694. Brussels: Commission of the European Communities. [http://eur-lex.europa.eu/LexUriServ/site/en/com/2002/com2002\\_0694en01.pdf](http://eur-lex.europa.eu/LexUriServ/site/en/com/2002/com2002_0694en01.pdf)

- European Commission. 2007a. Third Annual Report on Migration and Integration: an overview of policy developments on integration of third country nationals at EU and national level COM(2007) 512 final. Brussel: European Commission.  
[http://ec.europa.eu/home-affairs/policies/immigration/docs/com\\_2007\\_512\\_en.pdf](http://ec.europa.eu/home-affairs/policies/immigration/docs/com_2007_512_en.pdf)
- European Commission. 2007b. Communication from the Commission - Mobility, an instrument for more and better jobs: The European Job Mobility Action Plan (2007-2010), COM/2007/0773 final. Brussel: European Commission.  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52007DC0773:EN:NOT>
- European Commission. 2007c. Communication from the Commission on circular migration and mobility partnerships between the European Union and third countries, COM(2007) 248 final. Brussel: European Commission  
<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0248:FIN:EN:PDF>
- European Commission. 2007d. A Comprehensive European Migration Policy. MEMO/07/188 on 14/05/2007.<http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/07/188&format=HTML&aged=0&language=EN&guiLanguage=en>
- European Commission. 2009. Impact of the current economic and financial crisis on potential output, Occasional Papers 49. Brussel: European Commission.  
[http://ec.europa.eu/economy\\_finance/publications/publication15479\\_en.pdf](http://ec.europa.eu/economy_finance/publications/publication15479_en.pdf)
- European Commission. 2010a. European Commission proposes scheme for intra-corporate temporary transfer of non-EU skilled workers. *Europa Rapid Press Release*. July, 2010.  
<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/931&format=HTML&aged=0&language=EN&guiLanguage=en>
- European Commission. 2010b. European Commission proposes common entry and residence conditions for third-country seasonal workers. *Europa rapid press release*. July, 2010.  
<http://europa.eu/rapid/pressReleasesAction.do?reference=IP/10/930&format=HTML&aged=0&language=EN&guiLanguage=en>
- European Commission, 2010c, Europe 2020,  
<http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf>
- European Parliament, 2000, Lisbon European Council 23 and 24 March 2000, Presidency conclusions, [http://www.europarl.europa.eu/summits/lis1\\_en.htm](http://www.europarl.europa.eu/summits/lis1_en.htm)*
- European Parliament. 2008. MEPs support the European "Blue Card" proposal for highly-skilled immigrants. *press release*. November, 2008.  
<http://www.europarl.europa.eu/sides/getDoc.do?language=EN&type=IM-PRESS&reference=20081117IPR42214>
- Eurostat. 2010a. Population projects. Statistics explained.  
[http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Population\\_projections](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Population_projections)
- Eurostat. 2010a. European demography EU27 population 501 million at 1 January 2010, *Eurostat newsrelease*. July, 2010. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_PUBLIC/3-27072010-AP/EN/3-27072010-AP-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_PUBLIC/3-27072010-AP/EN/3-27072010-AP-EN.PDF)
- Eurostat, 2010b, Unemployment statistics. Statistics explained  
[http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php?title=File:Unemployment\\_rates\\_by\\_education.PNG&filetimestamp=20100601134150](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php?title=File:Unemployment_rates_by_education.PNG&filetimestamp=20100601134150)
- Eurostat, 2010c, Researchers in the European countries, Statistics explained.  
[http://epp.eurostat.ec.europa.eu/statistics\\_explained/index.php/Researchers\\_in\\_the\\_European\\_countries#cite\\_note-4](http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Researchers_in_the_European_countries#cite_note-4)

- Ferrero-Turrión, R., Migration and Migrants in Spain: After the Bust, in Papademetriou, D.G., Sumption, M., Terrazas, A. (eds) *Migration and immigrants two years after the financial collapse: Where do we stand?* \_ Washington (DC): Migration Policy Institute
- Fix, M., Papademetriou, DG., Batalova, J., Terrazas, A., Lin SY., Mittelstadt, M. 2009. *Migration and the Global Recession*. Washington DC.: Migration Policy Institute. <http://www.migrationpolicy.org/pubs/MPI-BBCreport-Sept09.pdf>
- Freeman, C. 1987. *Technology and Economic Performance: Lessons from Japan*. London: Pinter.
- Gallup, 2009, Flash Eurobarometer 267 the Gallup organisation, Innobarometer 2009 Analytical Report, [http://ec.europa.eu/public\\_opinion/flash/fl\\_267\\_en.pdf](http://ec.europa.eu/public_opinion/flash/fl_267_en.pdf)
- Gago JM, Ziman, J., Caro, P., Sjøberg, S., Davies, G., Constantinou, C., Parchmann, I., Rannikmäe M. 2004. *Report by the High Level Group on Increasing Human Resources for Science and Technology in Europe*. Brussels: European Commission. [http://ec.europa.eu/research/conferences/2004/sciprof/pdf/final\\_en.pdf](http://ec.europa.eu/research/conferences/2004/sciprof/pdf/final_en.pdf)
- Giannakouris, K. 2008. Ageing characterizes the demographic perspectives of the European Societies, Eurostat 72/2008. *Eurostat Statistics in Focus, Population and Social Conditions*. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-SF-08-072/EN/KS-SF-08-072-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-08-072/EN/KS-SF-08-072-EN.PDF)
- Global Migration Group. 2009a. *Migration and the economic crisis*. Summary report of a seminar organized jointly with IOM, UNFPA and the MacArthur Foundation. New York. May 21, 2009. [http://www.globalmigrationgroup.org/pdf/FINAL\\_Summary\\_report\\_21May.pdf](http://www.globalmigrationgroup.org/pdf/FINAL_Summary_report_21May.pdf)
- Global Migration Group. 2009b. GMG Fact-Sheet on the Impact of the Economic Crisis on Labour Migration and Migrant Employment. Geneva: ILO [http://www.globalmigrationgroup.org/pdf/ILO\\_Fact-sheet\\_3\\_final.pdf](http://www.globalmigrationgroup.org/pdf/ILO_Fact-sheet_3_final.pdf)
- Glover, S. Gott, C. Loizillon, A., Portes, J., Price, R., Spencer, S., Srinivasan, V., Willis, C. 2001. *Migration: and economic and social analysis*, RDS Occasional Paper no. 67, London: UK Home Office. <http://rds.homeoffice.gov.uk/rds/pdfs/occ67-migration.pdf>
- Guardian, 2010. Spending review 2010: key points at a glance, The Guardian 20 October 2010, <http://www.guardian.co.uk/politics/2010/oct/20/spending-review-2010-key-points#Business>
- Hekkert, M.P., Suurs, R.A.A., Negro, S.O., Kuhlmann, S., Smits, R.E.H.M. 2007. Functions of Innovation Systems: a new Approach for analysing Technological Change. *Technological Forecasting and Social Change*. 74: 413-432
- Herm, A., 2008. Recent migration trends: citizens of EU-27 Member States become ever more mobile while EU remains attractive to non-EU citizens, Eurostat 98/2008. *Eurostat Statistics in Focus, Population and social conditions*. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-SF-08-098/EN/KS-SF-08-098-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-08-098/EN/KS-SF-08-098-EN.PDF)
- House of Lords, 2008, *The Economic Impact of Immigration*, Select Committee on Economic Affairs, 1<sup>st</sup> Report of Session 2007–08, London (UK). <http://www.publications.parliament.uk/pa/ld200708/ldselect/ldeconaf/82/82.pdf>.
- Hunt, J., Gauthier-Loiselle, M. 2010. How Much Does Immigration Boost Innovation? *American Economic Journal: Macroeconomics*. 2(2): 31-5
- INSEAD. 2009. Who Cares? Who Dares? Providing the Skills for an Innovative and Sustainable Europe. Background report for the European Business Meeting. [http://www.insead.edu/discover\\_insead/docs/WhocaresWhodares.pdf](http://www.insead.edu/discover_insead/docs/WhocaresWhodares.pdf)
- Jacobsen, K. 2002. Can refugees benefit the state? Refugee resources and African statebuilding. *The Journal of Modern African Studies*, 40:4:577-596

- Lanzieri, G. Corisin, V. First demographic estimates for 2005, Eurostat 1/2006. *Eurostat. Statistics in Focus, population and social conditions*. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-NK-06-001/EN/KS-NK-06-001-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-NK-06-001/EN/KS-NK-06-001-EN.PDF)
- Lemaitre, G. 2005. The comparability of international migration statistics, problems and prospects. *Statistics Brief OECD*. Paris: OECD. <http://www.oecd.org/dataoecd/60/44/36064929.pdf>
- Loyal, S., 2010. Migrants and Migration in Ireland: adjusting to a new reality in Papademetriou, D.G., Sumption, M., Terrazas, A. (eds) *Migration and immigrants two years after the financial collapse: Where do we stand?* Washington (DC): Migration Policy Institute
- Lundvall, B.-Å. 1988. Innovation as an interactive process: from user–producer interaction to the national system of innovation. In *Technical Change and Economic Theory*, ed Dosi, G. Freeman, C., Nelson, R., Silverberg, G., Soete, L. London: Pinter.
- Lundvall, B.-Å. ed. 1992. *National Systems of Innovation*. London: Pinter
- Kanerva, M. and H. Hollanders, 2010 "The Impact of the Economic Crisis on Innovation - Analysis based on the Innobarometer 2009 survey".
- Koehler, J. Laczko, F., Aghazarm, C., Schad, J. 2010. Migration and the Economic crisis in the European Union: Implications for Policy. IOM Thematic Studies. <http://www.labourmigration.eu/research/report/12-migration-and-the-economic-crisis-implications-for-policy-in-the-european-union>
- Mahroum, S. 2001. Europe and the Immigration of Highly Skilled Labour. *International Migration*. 39 (5):27-43
- Manseau, A. Seaden, G. (eds). 2001. *Innovation in Construction: An International Review of Public Policies*. CIB series. London: Spon Press
- Mayda, A. 2006. Who is against immigration? A cross-country investigation of individual attitudes towards immigrants. *Review of Economics and Statistics*. 88(3): 510-530
- Ministry of the Interior, 2010, The amendment of the Nationality Act has been submitted to the Constitutional Law Committee for consideration. press release 10 June 2010 <http://www.intermin.fi/intermin/bulletin.nsf/PFBD/8B89DEE47819A504C225773E0032A060> Government proposal 80/2010vp
- MPI. 2008. The recession-proof race for highly skilled migrants, *Migration information source*. December, 2008. <http://www.migrationinformation.org/Feature/display.cfm?id=712>
- Mogu rou, P. Di Pietrogiamomo, M.P. 2008. *Stock, Career and Mobility of Researchers in the EU*, JRC Scientific and Technical Reports. Seville: JRC IPTS
- MPSV. 2009. Green Cards in the Czech Republic. Prague: Czech Ministry of Labour. [http://portal.mpsv.cz/sz/zahr\\_zam/zelka](http://portal.mpsv.cz/sz/zahr_zam/zelka)
- MTIN. 2009a. Migration policy in Spain. [http://www.osce.org/documents/eea/2009/02/36457\\_en.pdf](http://www.osce.org/documents/eea/2009/02/36457_en.pdf)
- MTIN, 2009b. Bolet n estad stico de extranjer a e inmigraci n. N mero 21 Agosto 2009. Madrid: Ministerio de Trabajo y inmigraci n. [http://extranjeros.mtin.es/es/InformacionEstadistica/Boletines/Archivos/Boletin\\_21.pdf](http://extranjeros.mtin.es/es/InformacionEstadistica/Boletines/Archivos/Boletin_21.pdf)
- MTIN, 2010a, Anuario de Estad sticas del Ministerio de Trabajo e Inmigraci n 2009 CEX 03 Contratos registrados de trabajadores extranjeros, seg n sexo, por sector y secci n de de actividad [http://www.mtin.es/estadisticas/ANUARIO2009/CEX/cex03\\_top\\_HTML.htm](http://www.mtin.es/estadisticas/ANUARIO2009/CEX/cex03_top_HTML.htm)
- MTIN, 2010b, Personal communication with Observatorio Permanente de la Inmigraci n, Ministerio de Trabajo e Inmigraci n, November 2010.

- Münz, R. 2008. Migration, Labor Markets, and Integration of Migrants: An Overview for Europe. SP discussion paper no 0807, social protection and labor. Washington (DC): World bank. <http://siteresources.worldbank.org/SOCIALPROTECTION/SP-Discussion-papers/labor-Market-DP/0807.pdf>
- Nelson, R.R. ed. 1993. *National Innovation Systems: a Comparative Study*. New York: Oxford University Press.
- Niebuhr, A. 2010. Migration and innovation: Does cultural diversity matter for regional R&D activity?, *Papers in Regional Science*. 89(3): 563–585
- NRC, 2010, Nyfer: immigratie kost samenleving 7,2 miljard per jaar, NRC Handelsblad 19 mei 2010, [http://www.nrc.nl/binnenland/article2547528.ece/Nyfer\\_immigratie\\_kost\\_samenleving\\_7,2\\_mid\\_per\\_jaar](http://www.nrc.nl/binnenland/article2547528.ece/Nyfer_immigratie_kost_samenleving_7,2_mid_per_jaar).
- OECD. 2003. *International Migration Outlook: SOPEMI 2003*. Paris: OECD
- OECD. 2004. *OECD Employment Outlook*. Paris: OECD.
- OECD. 2006. *International Migration Outlook: SOPEMI 2006*. Paris: OECD
- OECD. 2007. *International Migration Outlook: SOPEMI 2007*. Paris: OECD
- OECD. 2008a. *International Migration Outlook: SOPEMI 2008*. Paris: OECD
- OECD. 2008b. The looming crisis in the health workforce – how can OECD countries respond? Paris: OECD.
- OECD. 2009a. *International Migration Outlook: SOPEMI 2009*. Paris: OECD
- OECD, 2009b, Keep doors open to migrant workers to meet long-term labour needs, *OECD report*. 30 June 2009. [http://www.oecd.org/document/39/0,3343,en\\_2649\\_201185\\_43195111\\_1\\_1\\_1\\_1,00.html](http://www.oecd.org/document/39/0,3343,en_2649_201185_43195111_1_1_1_1,00.html)
- OECD, 2009c. Policy Responses to the Economic Crisis: Investing in Innovation for Long-Term Growth, OECD report June 2009. <http://www.oecd.org/dataoecd/59/45/42983414.pdf>
- OECD. 2010. *International Migration Outlook: SOPEMI 2010*. Paris: OECD
- OECD. 2010b. Foreign / international students enrolled. OECD Stat Extracts <http://stats.oecd.org/Index.aspx?DatasetCode=RFOREIGN>
- Ortega, F., and Polavieja, JV. 2009. Labor Market Exposure as a determinant of attitudes toward immigration, IMDEA working paper series in Economics and Social Sciences 2009/14. <http://ideas.repec.org/p/iza/izadps/dp4519.html>
- Pajares, M., 2010, Inmigración y Mercado de Trabajo informe 2010, Documentos del Observatorio Permanente de la Inmigración, Ministerio de Trabajo e Inmigración, [http://extranjeros.mtin.es/es/ObservatorioPermanenteInmigracion/Publicaciones/archivos/Inmigracion\\_Mercado\\_de\\_Trabajo\\_OPI25.pdf](http://extranjeros.mtin.es/es/ObservatorioPermanenteInmigracion/Publicaciones/archivos/Inmigracion_Mercado_de_Trabajo_OPI25.pdf)
- Parkes, R. Angenendt, S. 2010. After the Blue Card EU Policy on Highly Qualified Migration, three ways out of the impasse. Discussion paper. Berlin: Heinrich Böll Stiftung. [http://www.migration-boell.de/downloads/migration/HBS\\_Discussion\\_Paper\\_-\\_EU\\_Policy\\_on\\_Highly\\_Qualified\\_Migration.pdf](http://www.migration-boell.de/downloads/migration/HBS_Discussion_Paper_-_EU_Policy_on_Highly_Qualified_Migration.pdf)
- Papademetriou, D.G. 2007. Selecting Economic Stream Immigrants through Points Systems. *Migration information source*. May, 2007. <http://www.migrationinformation.org/Feature/display.cfm?id=602>

- Papademetriou, D.G. Terrazas, A. 2009. *Immigrants and the current economic crisis: research evidence, policy challenges and implications*. Washington DC: Migration Policy Institute, [http://www.migrationpolicy.org/pubs/lmi\\_recessionJan09.pdf](http://www.migrationpolicy.org/pubs/lmi_recessionJan09.pdf)
- Papademetriou, D.G. Sumption, M. and Somerville, W. 2009. *Migration and the Economic Downturn: What to Expect in the European Union*. Transatlantic Council on Migration. Washington (DC): Migration Policy Institute. [http://www.migrationpolicy.org/transatlantic/EU\\_Recession\\_backgrounder.pdf](http://www.migrationpolicy.org/transatlantic/EU_Recession_backgrounder.pdf).
- Papademetriou, D.G., Sumption, M., Terrazas, A. (eds) *Migration and immigrants two years after the financial collapse: Where do we stand?* Washington (DC): Migration Policy Institute
- Plewa, P. 2009. Update 1G: The 2008/2009 financial crisis: A false start for Czech foreign worker admissions? *Age of Migration Update*. <http://www.age-of-migration.com/uk/financialcrisis/updates/1g.pdf>
- Pro Inno Europe, 2009, European innovation scoreboard 2008, Comparative analysis of innovation Performance, PRO INNO Europe paper N°10 <http://www.proinno-europe.eu/page/european-innovation-scoreboard-2008>
- Pro Inno Europe, 2010, European innovation scoreboard 2009, PRO INNO Europe paper N°15 <http://www.proinno-europe.eu/page/european-innovation-scoreboard-2008>
- Romero-Ortuño, R. 2004. Access to health care for illegal immigrants in the EU: should we be concerned? *European Journal of Health Law*. 11: 245-272.
- Rutkowski, J. 2007. *Labor Markets in EU8+2: From the shortage of jobs to the shortage of skilled workers*. World Bank EU8+2 Regular Economic Report. Washington, D.C.: The World Bank. [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1021686](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1021686)
- Salt, J. 2009. *International Migration and the United Kingdom*. Report of the United Kingdom SOPEMI correspondent to the OECD. [http://www.geog.ucl.ac.uk/research/mobility-identity-and-security/migration-research-unit/pdfs/Sop09\\_Final\\_ONSCmnts\\_SE.pdf](http://www.geog.ucl.ac.uk/research/mobility-identity-and-security/migration-research-unit/pdfs/Sop09_Final_ONSCmnts_SE.pdf)
- Schreiner, J. 2008. *Labor Markets in Central, Eastern and Southeastern European EU Member States: General Trends and Migration Effects*. Focus on European Economic Integration 01/08. Vienna: Oesterreichische Nationalbank. [http://www.oenb.at/en/img/feei\\_2008\\_1\\_schreiner\\_tcm16-86780.pdf](http://www.oenb.at/en/img/feei_2008_1_schreiner_tcm16-86780.pdf)
- Slaughter. E.S. 1998. Models of Construction Innovation. *Journal of Construction Engineering and Management*. 124 (3): 226–231
- Sumption, M., Foreign Workers and Immigrant Integration: Emerging from Recession in the United Kingdom, in Papademetriou, D.G., Sumption, M., Terrazas, A. (eds) *Migration and immigrants two years after the financial collapse: Where do we stand?* Washington (DC): Migration Policy Institute
- THES, 2010, CSR 2010: A curate's egg, *Times Higher Education Supplement* 21 October 2010, <http://www.timeshighereducation.co.uk/story.asp?sectioncode=26&storycode=413961&c=2>
- UIS. 2010. Table 18 international flows of mobile students at the tertiary level (ISCED 5 and 6) <http://stats.uis.unesco.org/unesco/TableViewer/tableView.aspx>
- UK Home Office. 2010a. Control of Immigration: quarterly statistical summary, United Kingdom October-December 2009. London: UK Home Office. <http://rds.homeoffice.gov.uk/rds/pdfs10/immiq409.pdf>
- UK Home Office. 2010b. Immigration limit for Tier 1 (General) of the points-based system. London UK Home office. <http://www.ukba.homeoffice.gov.uk/sitecontent/newsfragments/27-intro-limit-for-t1-pbs>



UN, 2001, *Replacement Migration, Is It a Solution to Declining and Ageing Populations ?*, Population Division, Department of Economic and Social Affairs, United Nations Secretariat, New York

(US), <http://www.un.org/esa/population/publications/ReplMigED/Cover.pdf>

Vasileva, K. 2009. Citizens of European countries account for the majority of the foreign population in EU-27 in 2008, Eurostat 94/2009. *Statistics in Focus, Population and social conditions*. [http://epp.eurostat.ec.europa.eu/cache/ITY\\_OFFPUB/KS-SF-09-094/EN/KS-SF-09-094-EN.PDF](http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-SF-09-094/EN/KS-SF-09-094-EN.PDF)

Visa, L., 2010, Los parados huyen del campo, *El Pais*, August 02, 2010. [http://www.elpais.com/articulo/cataluna/parados/huyen/campo/elpepiespcat/20100802elpcat\\_1/Tes?print=1](http://www.elpais.com/articulo/cataluna/parados/huyen/campo/elpepiespcat/20100802elpcat_1/Tes?print=1)

Wieninternational. 2007. Massiver Facharbeitermangel bremst Aufschwung in neuen EU-Ländern. *Wieninterntional.at*. December 18, 2007. <http://www.wieninternational.at/de/node/6437>

Zimmermann., KF, ed. 2005. *European Migration, What do we Know*. Oxford: Oxford University Press

Zimmermann., KF. 2005. Introduction: What we Know about European Migration, in *European Migration, What do we Know*. ed. Zimmermann, KF. Oxford: Oxford University Press