The Future of International Migration to OECD Countries

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Foreword

In the OECD area, there were about 82 million migrants at the turn of the millennium, and immigration flows have remained high since then. Worldwide, there are about 191 million migrants and displaced persons and some 30-40 million unauthorised migrants. These figures have been steadily growing along with the number of host countries and countries of origin. Between 1990 and 2000, a net average total of some 2.5 million migrants moved from the less developed to the developed regions of the world every year. The largest inflows were in Northern America with an average of 1.4 million migrants annually, followed by Europe, which absorbed around 0.8 million each year.

It is hard, if not impossible to forecast the scale and direction of future migration, but the indications are that flows from the developing world to OECD countries will increase, or at least remain constant, in the coming decades. They will be influenced to a large extent by structural changes – technological, demographic, economic, environmental, political, labour-market–related, etc. – but also by shifts in developed countries' policy stance. Indeed, OECD migration policies will be faced with a double challenge: on the one hand, to exert some form of control over the flows with a view to facilitating the economic and social absorption of new arrivals, and on the other to reap and enhance the benefits that international migration can bring for the economy and society, especially in the light of ageing populations. In attempting to get to grips with this complex future, decision makers will need to be better informed about the factors likely to "push" emigration from developing countries, *e.g.* poverty, lack of employment prospects, environmental disasters, and civil strife. Equally, however, they will require a better understanding of the likely evolution of factors "pulling" migrants to OECD countries, such as higher living standards, education and employment opportunities, ageing populations, potentially significant skill shortages.

Surprisingly little in-depth research has been carried out to date to help decision makers in government, business and society at large better understand the complexities and wider consequences of future migration flows. At the end of 2007 the OECD's International Futures Programme (IFP), which reports directly to the OECD Secretary-General, and is charged with

identifying and developing emerging policy issues and strengthening cross-Directorate work in the Organisation, embarked on a 15-month project on the future of international migration through to 2030. The project was advised and financially supported by a steering group consisting of: Citizenship and Immigration Canada, Canada; Ministère de l'Immigration, de l'Intégration, de l'Identité nationale et du Développement Solidaire, France; Office fédéral des migrations, and Secrétariat d'Etat à l'économie (SECO), Switzerland; Ministère de l'Immigration et des Communautés culturelles, Province of Quebec, Canada; the Council of Europe Development Bank (CEB); the Russell Sage Foundation, United States; the Rockefeller Foundation, United States; and Manpower Inc., United Kingdom. Additional expert advice was sought from representatives of other international organizations, multinational enterprises and research institutions, and also government experts drawn from the fields of immigration, education, labour, foreign affairs, and local community affairs. These were brought together for a final experts' workshop which took place at OECD Headquarters in December 2008.

The aim of the IFP project was threefold: to explore the main factors determining the global migration landscape over the next 20-25 years, to discuss different scenarios to 2030 to help assess how migration flows might evolve in the coming years, and to work through some of the more important economic and social implications. In this way it was hoped to stimulate reflection among policy makers and businesses about the possible future context and consequences of international migration – a "big picture" perspective – and to assist them in their long-term strategic thinking on these issues. The IFP secretariat's intention was to establish where the gaps are in the assessment of future developments and identify where more work needs to be done in the field of international migration.

This publication presents a digest of the outcome of the work that the IFP secretariat undertook over the last 15 months. The work includes a broad overview of push and pull factors determining future migration flows; insights into likely developments in various non-OECD regions; and five different future scenarios developed in conjunction with foresight experts. A large number of pertinent tables and graphs are included.

The project was designed and directed by Barrie Stevens and Pierre-Alain Schieb. Anna di Mattia co-ordinated the project and also prepared and contributed to this publication. Research assistance was given by Ioana Valeanu. Rossella Iannizzotto and Anita Gibson provided secretarial and logistical support. Specialised departments in OECD, notably the Non-member Economies and International Migration Division of the Directorate for Employment, Labour and Social Affairs (ELS), the Education Department (EDU), and Club de Sahal (SAH) cooperated on this project. A complete list of steering group members can be found in Annex A.

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Executive Summary

This report is an expedition into a subject area on which surprisingly little work has been conducted to date, namely the future of global migration. It is an exploration of the future, but not a forecast. World migration patterns in the next 20 years or so will be shaped by many different, very powerful forces – economic, geopolitical, social, technological and environmental – all of which carry within them significant levels of uncertainty. It is therefore impossible and indeed inappropriate to develop a single view of what the world might look like in 2030.

For policy makers and decision makers more generally, it is much more useful to reflect on how the key drivers behind migration might develop in the coming years, what the most important underlying uncertainties are, and how they might combine to create a range of different possible long-term futures. These insights can then be used to test and challenge current thinking and help develop a robust range of policy options to address the different possible futures that may unfold. With this in mind, the "Future of International Migration to OECD Countries" project focused on compiling relevant future-oriented data and analysis around the key drivers and uncertainties underlying international migration trends, and on developing a range of scenarios that could prove useful to decision makers in considering the kind of strategies they might require to address the migration issues of the future.

In past decades, migrants have been moving for all kinds of reasons. The developed countries of the world, with their high incomes, significant employment potential, and generally well developed education and welfare systems, have seen considerable movement of migrants among their own countries, but increasingly they also exert a considerable attraction on people in the developing world seeking to improve their lot in life. Many developing regions, for their part, offer their citizens poor and often dangerous living conditions which induce them to leave their home country in search of better opportunities elsewhere. Whether they actually succeed in migrating then depends on the immigration policy practised by the receiving country. It is this complex interplay of economic, demographic, social and political factors which will ultimately determine the scale and direction of global migration flows in the next decades. So how will these various factors evolve in the future and how are they likely to affect migratory movements?

From developments in OECD countries attracting future migration flows…

A useful starting point is the OECD area because it is here that the analytical base and data sets with respect to economic and social developments are strongest, and where projections and foresight studies are most advanced. In addition to the higher standard of living in OECD countries, the ageing process in OECD countries, generated by slowing population growth and changing age pyramids, constitutes a powerful pull for migrants from the developing world. There will be latent demand to replace the declining numbers of young workers, replenish retirement funds and raise productivity, as well as latent demand for caregivers to look after the elderly. A primary offset to ageing and population decline could of course stem from increasing participation of women and elderly workers. Indeed, projections suggest that for the majority of the most developed OECD countries, increasing female participation will have a substantial positive impact on the size of the future workforce, even if in those countries with lower female participation rates (such as Korea, Japan, Southern Europe, Mexico) it will remain lower than average in the future. On the tertiary education front, two countervailing trends are at work in most OECD countries. On one side, many countries are attempting to attract more foreign students with a view to complementing the domestic decline in college-age youth, benefiting their education systems and integrating them more permanently into the workforce. On the other, the proportion of young people attending a tertiary education establishment is increasing, to such an extent that it could counterbalance population decline in the same age group. Projected increases in domestic tertiary education output are considerable and are likely to lead to reduced demand for highly skilled immigrants in some countries. And on the health front, there is a strong presumption that there are likely to be widespread shortages of healthcare workers in OECD countries in the coming years, generating latent demand for appropriately trained migrant personnel.

How might these various "pull" factors play out in the aggregate? They impact primarily on the level of migration and its composition. While economic differentials and demographic change act as attractors on future migrants more or less at all skill levels, domestic production of highly educated people may tend to attenuate the future demand for skilled immigrants, not least in the health sector. Countries that today depend largely on other developed countries for their migrant workforce are in future likely to turn increasingly to the developing countries to meet such needs, thereby fuelling keener global competition in the knowledge economy. In conclusion, as long as migrants are not actively prevented from doing so, they will continue to arrive in OECD countries. This presupposes that the potential pool of migrants will continue to increase and/or is significantly bigger than today's pool of migrants. Even

constant rates of emigration should lead to rising numbers of migrants and, in turn, increasing rates of immigration. So which factors will determine those emigration trends from non-OECD countries?

… to factors driving emigration from non-OECD countries…

Changes in the economic situation of developing countries are a key determinant of migration. At aggregate level, it is the income differential between developing and developed country that is important. Although overall projections of GDP growth to 2030 show growth rates in the developing world outstripping those of developed economies, per capita income trends show significant regional differences, reflecting in part continuing population pressures in some areas of the world. The Middle East, North Africa, Sub-Saharan Africa, Latin America and the Caribbean are not expected to make very much progress over the coming years in closing the per capita income gap with the OECD countries, suggesting that out-migration pressures from these regions are likely to persist for quite some time. However, it is far from clear that OECD countries will be the principal destinations. Per capita incomes in East Asia and the Pacific, for example, will most probably continue to rise, thereby strengthening the likelihood that at least some migratory flows will be diverted to such catch-up regions.

Demographic and social developments in sending countries will also play a key role in the future. The younger the population, the bigger the share of the population liable to emigrate. Projections suggest that, in terms of migration pressure, South East Asia and Africa will face big increases in youth populations; other regions such as China, Latin America and the Caribbean will experience population ageing which will lessen the incentives to migrate internationally; and other regions such as Eastern Europe will see their populations ageing and diminishing in numbers. Moreover, the supply of education will be increasing in most non-OECD countries, often in a very significant manner. Higher education enrolment scenarios to 2030 indicate that enrolments in tertiary education will increase in all non-OECD regions. The increase will be particularly strong in South Asia, where rates could triple, and in China and Latin America where they could roughly double. There could also be significant increases in Sub-Saharan Africa, North Africa and the Middle East, albeit from a much smaller base figure. In terms of the impact on future migrations flows, the effect could prove double-edged. On the one hand, the poor quality of education institutions in many non-OECD countries can serve to encourage out-migration, and the quantitative and qualitative improvements in educational infrastructure in future would no doubt reduce such an incentive for some. But on the other hand, an increasing education supply can also serve to encourage brain drain.

With respect to "diaspora" or network effects, two trends are likely to stand out. In sending countries where networks with OECD countries are already well established, their impact on outward migration is set to remain strong. In contrast, where networks have still to be developed, migration effects will take some time to feed through. A differentiated picture also emerges with respect to the impact of environmental factors on future migration movements. While it is generally accepted that natural disasters and chronic environmental degradation due to climate change will lead to population movements, the magnitude and direction of those movements is far from certain. The presumption at present is that environmentally induced population displacements in emerging and developing countries are most likely to lead to movements within the country or region rather than to permanent migration towards OECD countries. And finally, while projecting geopolitical and political stability factors into the longer term future tends to be a particularly hazardous exercise, it would seem that, in a short-to-medium term perspective, political stability will remain a major concern for a number of countries and regions, with at least some migration flows into neighbouring OECD countries to be expected.

In sum, then, a combination of economic, demographic, social, environmental and political factors are at work which, on balance, is likely to see a continuing build-up of migratory pressures in non-OECD regions. Whether strong migration flows actually materialize depends of course on the migration policies in place in the destination countries.

… to a range of possible global migration scenarios for the future

Combining the various pull and push forces prevailing in OECD and non-OECD countries should provide some important indications of how global migration flows are likely to evolve through to 2030. Given the uncertainties in all of the areas driving future migration patterns – demographic, economic, geopolitical, social, technological, environmental etc. – it is not possible to predict the future; but it is useful to develop a range of possible futures. These can be captured through scenarios. The starting point for the scenarios was the identification of two main forces expected to have most influence in shaping international migration futures. The choice fell on the level of growth in OECD economies and the level of social development in non-OECD countries. Four sets of key parameters were also identified: a range of social, economic and political descriptors; the leading "pull" factors attracting migrants to OECD countries; the leading "push" factors driving people to leave their home country; and so-called "wild cards" or low-probability, high-impact events. Finally, nine underlying patterns of change were made out: demographic shifts, the changing economic landscape, political complexity, expanding business agendas, science-led innovation and growth, an ageing society, talent shortages, global internet expansion, and environmental risks.

These different components were integrated into five scenarios. *Progress for All* is based on the hypothesis that growth and development have delivered advancement in social welfare across the planet. There is strong demand and intense competition for skilled and unskilled labour across the OECD and developing economies and a high circular flow of migrants results, particularly among skilled labour. *OECD Long Boom* posits that strong innovation-fuelled growth is not matched by the BRICs who are beset by internal challenges. However, many other developing nations achieve advancement. There is strong demand for skilled and unskilled migrants from the OECD but there is less competition for talent from non-OECD countries. *Uneven Progress* suggests that while the OECD and BRIC countries continue to develop, the gap with emerging nations and LDCs grows. There is intense competition between nations in these groupings, particularly for skilled migrants. In *Globalisation Falters*, a series of global economic slowdowns dramatically reduce demand for all but the most specialist of skilled labour. Finally, *Decoupled Destinies* describes a decoupling as OECD nations struggle with the increasing cost of recovery from a series of punishing downturns. The developing nations however are propelled by an influx of long-term investment capital. While there is low demand for specialist skills in the OECD, opportunity improves both domestically and in other developing nations across the non-OECD universe.

What stands out is that, in all of these scenarios, demand for migrants persists through the coming years, albeit at different levels. This is overwhelmingly the case with OECD countries (largely explained by the requirements of ageing populations and older, shrinking workforces) and applies in several of the scenarios also to the BRICs and other emerging economies.

Overall findings…

The main, global-level findings of the project can be summed up briefly as follows:

- Worldwide, migration flows are very likely to rise or at least remain constant over the next twenty years or so much in line - on aggregate – with trends of the last 30 years.
- In many non-OECD regions, a set of economic, demographic, social, environmental and political factors are producing a combination which, on balance, is likely to underpin a continuing build-up of migratory pressures.
- The broad expectation is that demand for migration into the OECD area is likely to rise or at least stay constant, especially, perhaps, in those OECD countries in which population ageing and economic attractiveness make for a powerful combination of pull factors.

- It is expected that global competition for labour will intensify, notably for top talent, highly qualified and semi-skilled individuals -- and perhaps even for unskilled workers.
- In an increasingly multi-polar world, political stability will remain a major concern for a good number of countries and regions; coupled with an increasingly disruptive impact on the environment from climate change, it is to be expected that there will be an upward trend in migrants seeking to cross borders in search of less risk-laden locations. It is uncertain, however, what share of such migrants will head to OECD member states as their preferred destination and how many of those will gain entry.
- The findings reconfirm, depending of course on migration policies, that migration flows to OECD countries are unlikely to be sufficient to offset the economic effects of population ageing and decline.

… and policy challenges for OECD governments

There are a range of policy challenges OECD governments can expect to have to address in the coming twenty years or so. Circumstances will of course vary from OECD country to OECD country and will depend on which particular future materialises. But some issues identified over the course of the project stand out as challenges that will very likely prove common to a good number of OECD governments under most future settings. Among the "top-level" challenges will be the need for governments to:

- Adjust their policies to a global labour market context in which they may find themselves in increasingly intense competition with other OECD countries and emerging economies for knowledge workers, as all seek to maintain and improve productivity levels;
- Consider how in a globally more competitive environment they can put in place measures to maintain academic excellence, retain top talent, and dissuade businesses from moving both their investment and top quality human resources abroad;
- Address growing concerns voiced by developing countries about "cherry-picking" of their best talent and "brain drain" to OECD and BRIC countries even where, as seems to be the case, labour migration is becoming increasingly employer-driven;
- Think through more systematically the ripple effects of large-scale immigration on such key areas as labour markets (*e.g.* impact on wages and salaries) and local communities (*e.g.* implications for housing, health care provision and schooling);

- Strike a viable balance in demonstrating and communicating to their citizens the need for continued or increased immigration across the full range of skilled and unskilled labour while at the same time ensuring that appropriate policies for the monitoring and control of migration and integration of immigrants are in place;
- Devise ways to encourage educational institutions in OECD countries to develop and expand education and training capacities to help migrants adjust, integrate and upgrade their skills, for example outreach and university marketing programmes targeted specifically at foreign students, language training, and curricula tailored to foreign students' needs;
- Increase opportunities for migrant students to work so as to help finance their studies and gain specific, host-country work experience, and facilitate the transition from student to worker with a view to retaining students after graduation;
- Facilitate the establishment of educational and training programmes and campuses in developing world locations so that students may obtain the appropriate qualifications which heighten their job chances on the home labour market and increase their chances of finding work in OECD countries;
- Determine the right balance among domestic retirement age, female participation, permanent immigration and temporary immigration, in order to redress peaks and troughs of domestic skill supplies;
- Respond constructively to sympathetic public sentiment towards in particular poor migrants fleeing areas affected by political/military conflict or severe environmental damage, especially in the light of existing international agreements governing refugees.

One of the objectives of the project on The Future of International Migration to OECD Countries was to identify broad policy issues and not to explore the full range of specific measures that would need to be implemented in order to address them. For national and regional policy makers the challenge is now to review each of the scenarios, assess the local implications for the strengths and weaknesses of the push and pull factors, determine the critical areas of likely demand for each skill level, and consider a range of appropriate policy options.

Chapter 1

The Future of International Migration: Introduction and Overview

compiled by

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From end-2007 to end-2008 the OECD International Futures Programme conducted a project on "The Future of International Migration to OECD Countries". The project comprised a series of preparatory meetings and workshops with interested stakeholders from government, international organisations, business, foundations and the research community (see Annex A). It generated a rich set of papers which explored the factors driving international migration to 2030, both from an OECD country perspective and from a developing and emerging economy viewpoint, and which was supplemented by contributions from academic experts focussing on developments in the main non-OECD regions.

This opening chapter provides an overview of this extensive body of work, summarising the main findings of the project and offering regional insights from papers which, for reasons of space, could not be published separately in this volume.

Rationale, purpose and approach

International migration already figures prominently on the policy agenda of many OECD countries. This is in part a reflection of the fact that at the turn of the millennium there were some 82 million migrants in the OECD area. There are indications, however, that over the next few decades migratory flows to the developed world will continue and perhaps even accelerate, setting migration on course to become an even more prominent item among the national and international policy issues likely to dominate the public debate in the coming years. One key element in this will be demographics, but other factors, in particular economic aspects, will also be at work.

Accurate forecasting of future migratory flows is simply not possible with current knowledge and tools. Yet decision makers in government, business and society at large would be better equipped to address the opportunities and risks if they had a better understanding of the complexities and the wider context of future migration flows. The objective of this project, therefore, was to make a modest contribution to improving that understanding. It explored the main factors shaping the global migration landscape over the next 20 to 25 years, examined the key drivers underlying future migratory movements, and developed scenarios with a view to identifying some of the most important issues that public and private actors will need to address in the near-to-medium term if international migration is to be constructively harnessed for the good of long-term social and economic development.

A variety of theories of migration exist. These range from neoclassical economic theories that posit differences in net economic advantages (mainly wages), and dual labour market concepts, to "new economics of migration" theories, social network approaches, world systems theories and economies

of scale theories. (An overview of different migration theories can be found in Box 2.1.) Underlying many of these approaches, albeit in different forms and with different emphasis, is the notion of "pull" and "push" factors. While these approaches normally embrace mainly economic, demographic and policy drivers, researchers have over time added social, environmental and political factors. A frequent criticism of the push-pull approach is that it oversimplifies by ignoring inter-linkages and feedback effects, understating the dynamics of ageing relations, and failing to integrate conceptual advances such as network theories. However, in the absence of a robust and comprehensive alternative theory, the IFP team decided to employ the push-pull approach since it did at least offer a manageable strategic entry into what is a highly complex discussion. The focus was put on a limited set of push-pull factors related to: economy, labour market, demography, welfare, education, networks, remittances, environment, geopolitics and governance.

Counter-intuitively perhaps, migration policy does not figure as a key driver or major uncertainty in this exercise. The reason is that the steering group wished to examine the economic, social and environmental drivers and uncertainties from the viewpoint of the policy maker who will need to respond to such future developments. With this in mind, both the overview chapter and the scenario chapter end with a reflection on the main challenges that migration trends to 2030 will pose to policy makers.

The future evolution of "pull" factors in OECD countries

In his chapter on the development of immigration pull factors over the long term, Lindsay Lowell underscores the importance of economic factors. On the one hand, projections of economic growth through to 2025 and beyond suggest converging growth rates across the OECD area. On the other hand, those projections also recognise the considerably faster rates of expansion and rising income levels expected in many emerging and developing regions of the world. It is thought that migration begins to slow once wage differentials between countries are no greater than 30% to 40%. Hence, putting the two trends together suggests that as many as half of the more developed OECD economies will no longer maintain such a wage gap over traditional less developed source nations.

In contrast, today's ageing process in OECD countries, generated by slowing population growth and changing age pyramids, constitutes a powerful pull. There will be latent demand to replace the declining numbers of young workers, replenish retirement funds and raise productivity, as well as underlying demand for caregivers to look after the elderly. A primary offset to ageing and population decline could of course stem from increasing participation of women and elderly workers. Indeed, projections suggest that

for the majority of the most developed OECD countries, increasing female participation will have a substantial positive impact on the size of the future labour force, even if those countries with lower female participation rates (such as Korea, Japan, Southern Europe, Mexico) will remain lower than average in the future.

Social networks interconnect migrants between the source and the host country. However, measuring the power of such network effects is very difficult, and projecting such effects twenty years out even more so. In simple terms, network effects may be weak or strong. They may be weak where the primary incentive to migrate is short-lived as the individual's wage differential shrinks, so that the network effect becomes secondary to long-run migration in cases where it is swamped by much more powerful factors. Conversely, the network effects may be strong where they perpetuate migrant flows independently of other pull factors by structuring job markets and contributing to a culture of migratory expectations in source countries.

On the tertiary education front, two countervailing trends are at work in most OECD countries. On one side, many countries are attempting to attract more foreign students with a view to complementing the domestic decline in college-age youth, benefiting their education systems and integrating them more permanently into the workforce. On the other, the proportion of young people attending a tertiary education establishment is increasing, to such an extent that it could counterbalance population decline in the same age group. Projected increases in domestic tertiary output are considerable and are likely to lead to reduced demand for highly skilled immigrants in some countries. And on the health front, there is a strong presumption that there are likely to be widespread shortages of healthcare workers in OECD countries in the coming years, generating latent demand for appropriately trained migrant personnel.

How might these various pull factors play out in the aggregate? Lowell confirms that they impact primarily on the level of migration and its composition. While economic differentials and demographic change act as attractors on future migrants more or less at all skill levels, domestic production of highly educated people may tend to attenuate the future demand for skilled immigrants, not least in the health sector. Countries that today depend largely on other developed countries for their migrant workforce are likely to turn increasingly to the developing countries to meet such needs in the medium to long term, thereby fuelling keener global competition in the knowledge economy.

Combining and weighting the various factors, Lowell identifies nine OECD countries likely to exert a strong pull on future migration. Australia, Finland, Austria, Japan and the Netherlands rank high on both economic and demographic pull, while Luxembourg, Ireland, Denmark and the United States figure prominently only on the economic pull scale. How this

eventually translates into actual immigration in future depends of course on many factors, not least on immigration policy.

Lowell concludes that, as long as migrants are not actively prevented from doing so, they will continue to arrive in OECD countries. This presupposes that the potential pool of migrants will continue to increase and/or is significantly bigger than today's pool of migrants. As the following sections demonstrate, that is the case and will remain the case for many years to come. Even constant rates of emigration should lead to rising numbers of migrants and, in turn, increasing rates of immigration. The question of which factors will determine those trends in source countries is addressed in similarly systematic fashion in Chapter 3, on "push" factors.

The future evolution of "push" factors in emerging and developing countries

In her chapter on push factors at work in non-OECD countries, Anna di Mattia uses two "stylised" descriptions of the origins of today's immigrants to OECD countries. First, they tend to originate from countries in close proximity. By way of illustration, almost half of emigrants from Latin America in the 1990s arrived in the United States, and the main OECD destinations of Tunisians and Moroccans is France, Italy and Spain. Second, they tend to come from middle-income rather than the poorest developing countries. For example Africa, the continent with the largest number of least developed countries, exhibits low rates of emigration to OECD countries. Indeed, a large proportion of migration in the developing world remains intraregional and does not cross into OECD countries.

Changes in the economic situation of developing countries are a key determinant of migration. These work however at two levels, namely at aggregate level and in terms of the distribution of economic opportunities within the developing country. At aggregate level, it is the income differential between developing and developed country that is important. Although overall projections of GDP growth to 2030 show growth rates in the developing world outstripping those of developed economies, per capita income trends show significant regional differences, reflecting in part continuing population pressures in some areas of the world. The Middle East, North Africa, Sub-Saharan Africa, Latin America and the Caribbean are not expected to make very much progress over the coming years in closing the per capita income gap with the OECD countries, suggesting that out-migration pressures from these regions are likely to persist for quite some time. As Anna di Mattia points out, however, it is far from clear that OECD countries will be the principal destinations. Per capita incomes in East Asia and the Pacific, for example, will most probably continue to rise, thereby strengthening the

likelihood that at least some migratory flows will be diverted to such catch-up regions. And at the level of domestic income distribution, much of the impact on emigration patterns will depend on whether rising national income leads to greater inequality and the emergence of a middle class, or whether it serves to lift large swathes of the population out of poverty, thereby possibly increasing out-migration in the short term.

Demographic developments in sending countries will also play a key role in the future: the younger the population, the bigger the share of the population most liable to emigrate. This holds in two respects. First, the increase in the youth population expands the pool of likely migration candidates, and second, burgeoning cohorts of young people may lead to overcrowding on the labour market and a significant worsening of their economic prospects. Demographic projections suggest that, in terms of migration pressure, South East Asia and Africa will face big increases in youth populations; other regions such as China, Latin America and the Caribbean will experience population ageing which will lessen the incentives to migrate internationally; and other regions such as Eastern Europe will see their populations ageing and diminishing in numbers.

The supply of education will be increasing in most non-OECD countries, often in a very significant manner. Anna di Mattia presents a number of higher education enrolment scenarios to 2030, the most plausible of which indicates that enrolments in tertiary education will increase in all non-OECD regions. The increase will be particularly strong in South Asia, where rates will triple, and in China and Latin America where they will roughly double. There will also be significant increases in Sub-Saharan Africa, North Africa and the Middle East, albeit from a much smaller base figure. In terms of the impact on future migrations flows, the effect could prove double-edged. On the one hand, the poor quality of education institutions in many non-OECD countries can serve to encourage out-migration, and the quantitative and qualitative improvements in educational infrastructure in future would no doubt reduce such an incentive for some. But on the other hand, an increasing education supply can also serve to encourage brain drain. On balance, it is likely that development of schooling opportunities will go hand in hand in with expanding opportunities to use the acquired skills on the domestic labour market, thus mitigating to some extent outflows of skilled workers.

The future impacts of several other factors are explored. On the "push" side of network effects, two trends are likely to stand out. In sending countries where networks with OECD countries are already well established, their impact on outward migration is set to remain strong. In contrast, where networks have still to be developed, migration effects will take some time to feed through. A differentiated picture also emerges with respect to the impact of environmental factors on future migration movements. While it is

generally accepted that natural disasters and chronic environmental degradation due to climate change will lead to population movements, the magnitude and direction of those movements is far from certain. The presumption at present is that environmentally induced population displacements in emerging and developing countries are most likely to lead to movements within the country or region rather than to permanent migration towards OECD countries. However, environmentally induced migration is a relatively new field of research requiring firmer empirical and theoretical foundations. And finally, projecting geopolitical and political stability factors into the longer term future tends to be a particularly hazardous exercise. Anna di Mattia's conclusion in a short-to-medium term perspective is that for a number of countries and regions political stability will remain a major concern, with potential migration flows into neighbouring OECD countries to be expected.

In sum, then, a combination of economic, demographic, social, environmental and political factors are at work which, on balance, are likely to see a continuing build-up of migratory pressures in non-OECD regions.[1]

Spotlight on migration prospects in individual regions and countries

The findings from the quite highly aggregated "push factor" work suggest that additional interesting insights might be gained from a more differentiated approach to the future of migration which focuses on individual regions and particularly populous countries.

In the course of the project, a number of regional notes were commissioned from leading experts to help shed light on the diversity of situations and future migration trends in different parts of the non-OECD world. The aim of the regional notes was to provide a largely qualitative, personal assessment of the likely evolution in factors in the principal non-OECD regions which could influence outflows of people either in the form of intra-regional migration or, of particular significance to this exercise, to OECD countries, through to 2025/2030. More specifically, the experts were asked to give some consideration to the most likely trajectory that outward migration might take in the years ahead, together with some speculation about possible "wild cards" (unexpected events or developments which could impact significantly on pressures to migrate to OECD countries).

A regional note on India/Pakistan/Bangladesh was written by Prof. Binod Khadria, (Jawaharlal Nehru University, New Delhi). Sub-Saharan Africa was covered by Laurent Bossard (OECD Club de Sahel). Jeff Ducanes and Manolo Abella (ILO Regional Bureau, Bangkok) submitted a note on China and South East Asia/Asia Pacific. A note on North and East Africa was prepared by Flore Gubert and Christophe Jalil Nordman (DIAL, IRD, France). Jorge Martinez Pizzaro (CEPAL, Chile) drafted a note on Latin America. The Russian

Federation and Eastern and South East Europe were covered by Prof. Dietrich Thränhardt (Universität Münster, Germany). Prof. Philippe Fargues (European University Institute, Italy) provided information on the Middle East and North Africa. These papers can be found on the OECD/IFP webpage (www.oecd.org/futures). This section draws heavily on their contributions.

India, Pakistan and Bangladesh[2]

At least one-fifth of humanity lives in South Asia, the large majority in India, Bangladesh and Pakistan. In contrast, the region accounts for only around 6% of the world's gross national income measured at purchasing power parity corrected exchange rates. India will register a massive increase in the absolute size of working age population (15 to 64 years) in 2030 over 2005 due to a growth of about 33%, and Pakistan and Bangladesh too will have massive rates of growth of about 50% and 40% respectively in 2030 over their respective populations in 2005, increasing the pressure to emigrate.[3]

While the male-female distribution is expected be more or less the same in all three countries by 2030, India has been projected to enjoy what is called a "demographic dividend" in terms of youth population dominating the age-structural-transition. The flagship of India's "demographic dividend" has so far been the software IT skills embodied in the relatively younger contingents of Indian "knowledge workers" – increasingly dominating the home turf in the migration-related business-process-outsourcing (BPO) industry and the global arena through its diaspora presence in the services sector.[4] There is, however, some inconsistency in the logic of a demographic dividend being realized in India in the 21st century which is due to contradictions in *(a)* the numbers, and *(b)* the quality, of human resources. According to December 2006 revised projections of the Registrar General and Census Commissioner of India for the period 2001-2026, the population of India is expected to rise from little over 1 billion in 2001 (1.029 billion) to 1.4 billion in 2026 (1.400 billion), registering an increase of 36% in 25 years.[5] Within this, and for a shorter period till 2016, India's youth population in the age group of 20 to 29 is estimated to increase by 64 million in the shorter span of 15 years – from 174 million in 2001 to 238 million. The RGI pointed out that in the total population increase of 371 million during first quarter of the 21st century, the share of workers in the age group of 15 to 59 in the total increase would be 83%. This is what is being touted as the "Demographic Dividend" of 21st-century India, a term that glosses over the fact that there are likely to be huge discrepancies between the north and the south within India.

With respect to the quality of human resources in the labour market, according to Ashish Bose, one of India's leading demographers, one might ask whether this kind of age-structural change related to an upsurge in youth and working age population might in fact rather prove to be a "demographic

burden" for India instead of a demographic dividend. According to Bose, absorbing the vast increase in youth numbers will be a real challenge to all governments at the Centre and in the States in terms of their political survival. Vast masses of unemployed numbers and unemployable youth will affect not only the productivity of labour but also threaten the rule of law (an indicator on which India performs better than Bangladesh or Pakistan) – one of the three elements the domestic private sector investment as well as the Foreign Direct Investment would always like to be assured of, the other two being infrastructure, and availability of skills. Of the total unemployed population of 45 million in 2001, over 10% were unemployed graduates (GOI, 2001, Census of India). The number is estimated to have risen from 4.8 million in 2001 to 5.3 million in 2007.

Thus, paradoxically, India faces a high rate of graduate unemployment co-existing with huge skill shortages, particularly because of non-suitability of a large proportion of the graduates for the available jobs (NASSCOM 2005a, 2005b). The present graduate unemployment rate of 17.2% in India is significantly higher than the overall rate of unemployment. And a higher proportion of nearly 40% of the graduates are underemployed, *i.e.* not productively employed.

At the higher end of the skill spectrum, while in 1991 India had a total of 10 million workers in "professional, technical and related" fields to be classified as Human Resources in Science and Technology (HRST in short), according to *India Science Report 2005,* this rose to 27 million in 2004 (NCAER, 2005) – an increase of two and a half times over a period of one and a half decades.[6] As a proportion of the country's total workforce, this is a doubling from 3.6% in 1991 to 7.3% in 2004. However, while the numbers as well as the proportion of HRST have gone up steadily since 1991, the same cannot be said about the utilization of these resources. In 2004, only about 35% of those holding HRST jobs were educationally qualified for those jobs. Indeed, this ratio has not improved with the passage of time. In 1991, the ratio was just 2 percentage points below 35; in 2004 it rose to just 2 percentage points above 35. The share of India's work force possessing neither a diploma nor a graduate degree is currently estimated at around 327 million. In other words, around 89% of the country's work force has an educational qualification of only high school or below. The overall stock of graduates in India was estimated to be only around 22 million in 2003-04. Total enrolment in higher education was 10 million, whereas the outturn each year was 2.5 million.

The 2005 NASSCOM Strategic Review (2005a) and the NASSCOM-McKinsey Report (NASSCOM, 2005b), released by India's National Association of Software and Services Companies (NASSCOM), both important documents, identified a huge shortage in both the IT-related and BPO-related skills in India. The reports said that only about 25% of technical

graduates were suitable for employment in the offshore IT sector, and as little as 10% to 15% of general college students for the BPO industries. The reports estimated that by 2010 the two industries would have to employ an additional one million workers near five Tier-I cities in India (New Delhi, Bangalore, Hyderabad, Chennai and Mumbai). But the phenomenon of skill shortages goes further than IT. In the education sector, for example, there is thought to be a 25%-40% shortage of faculty members in disciplines such as engineering, management, economics, and computer science. And talent shortages have also been identified in sectors such as health, insurance, heavy engineering, civil aviation, oil and gas (Manpower, 2008).

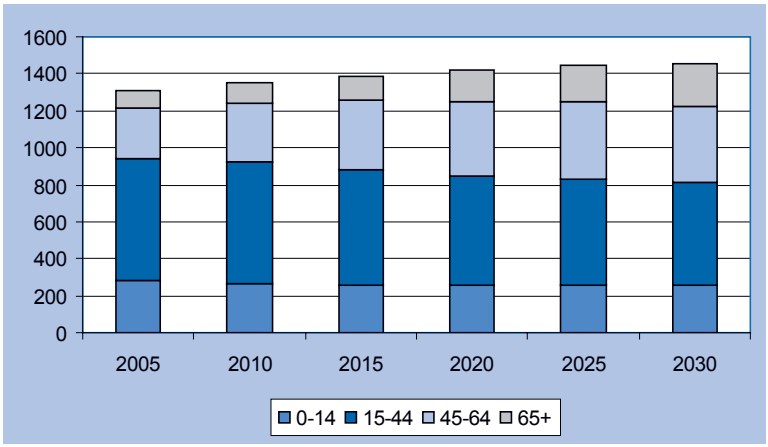
Given these weaknesses within the Indian higher education system, India has become a virtual "supermarket" (as the Indian media call it) for internationally renowned educational institutions in other countries to shop in India and import "semi-finished human capital"[7] – the best and the brightest of Indian students (*The Hindu*, 26 November 2000). These students from a large middle-class find it better to get educated abroad in order to avail themselves of better job opportunities in India on their return (Khadria, 2006c). Indeed, India is already a top source of exported labour. It is estimated that between five and six million Indian migrants are working internationally. Traditionally, the United States, United Kingdom and Canada have been the major destinations for highly skilled Indian migrants, with the Gulf States the main destination of unskilled and semi skilled workers. This is changing rapidly. European countries, Japan, Australia, New Zealand, Singapore, Malaysia and increasingly the Gulf States are all attracting Indian professionals (Manpower, 2008).

Between 2008 and 2030 the economy of South Asia is expected to grow at an average of close to 5% per annum. India is likely to exceed the average for the region as a whole. However, such growth rates can only be sustained if adequate supplies of skilled and semi-skilled manpower are available. The projected increases in population could easily lead to a pattern of emigration followed by return, thereby propagating temporary migration – particularly of the younger cohorts – from South Asia as a whole to the OECD, unless the higher education sectors of India, Pakistan, Bangladesh absorb them for quality education and equip them with the skills that their own labour markets require. This is what the 11th Five Year Plan document of India aspires to achieve by 2012 through the proliferation of what are called the "world class" and "central government funded" universities across the states,[8] a target which, according to critics would look more like a "wild card" than the IIASA global trends scenario of enrolments in tertiary education for India doubling to about 14.3% in thirty years by 2030 only. Similar "wild card" developments in Pakistan and Bangladesh could also short-circuit the same IIASA estimates for Pakistan (rising from 6% in 2000 to 13.6% 2030) and for Bangladesh

Table 1.1. **Expected relative importance of factors in future migrations to the OECD**

Migration from / Factors	India	Pakistan	Bangladesh
Demography	**High** Age-structural-advantage; Demographic Dividend	**Medium** Economically Active Population size would increase	**High** Density of population would push people out
Economy	**Low** Insulated from external shocks; low dependency on remittances	**Medium** Vulnerable to internal shocks; high level of corruption	**High** Exposed to internal and external shocks: high corruption; high dependency on remittances
Tertiary Education	**High/Low** Ambitious targets of tertiary enrolment vs. large number of middle-class students escape from under-supply/ low quality education	**Medium** No "wild card" likelihood of massive increase in supply	**Medium** No "wild card" likelihood of massive increase in supply
Climate Change	**High** Coastal and inland flooding can displace large masses; Shortage of "green jobs" in OECD	**High** Prone to earthquakes-can lead to flight of people; Shortage of "green jobs" in OECD	**High** Coastal and inland flooding can displace large masses; Shortage of "green jobs" in OECD
Standard of Living	**Low** Avenues for maintaining higher standards are plenty inside the country	**Medium** A mixed picture of high standards and poverty around	**High** Escape from poverty around
Dual Citizenship	**High** Will facilitate greater mobility	**Medium** Limited to few countries in OECD	**Medium** Bureaucracy creates hurdles
Polity & Governance	**Low** Democracy and civil liberty	**High** Political instability and military regime	**High** Political instability and military interventions
Unstable Immigration Policy Changes in OECD Country	**High** Can cause graduate unemployment due to sudden restrictive immigration	**Medium** Anyway facing restrictive immigration regimes	**High** Cannot absorb graduate unemployment caused by sudden restrictive immigration

Figure 1.1. **Projected China population by age group (in millions)**



Source: Ducanes and Abella (2008).

(rising from 12% in 2000 to 18.5% in 2030) over much shorter periods, triggering higher rates of emigration for graduates than witnessed now.

Looking across the three South Asian countries surveyed, not only population, economy and labour market conditions will determine future migration patterns in the region but also a range of other factors, each of which is likely to play out differently in each of the three countries. Table 1.1 provides a summary overview.

China and Southeast Asia[9]

The decline in population growth in China has been accompanied in the last three decades by extraordinary economic growth and the rapid transformation of the economy. Growth was mainly concentrated in the coastal provinces, generating employment opportunities there, and resulting in vast migration of workers from rural inland areas. In 2005, there were an estimated 50 million inter-provincial migrants in China.[10] The average age of these migrant workers is 29.[11] The Chinese government has reportedly decided in 2008 that the "one child policy" will be kept for at least another decade. The rapidly declining youth population, especially if combined with economic growth at or near its current level in the lead up to 2030, will mean demographic pressure will not be an important factor influencing future overseas migration from China (see also Figure 1.1).

Out-migration from China has historically been driven by economic, political, and socio-cultural factors.[12] The rapid economic expansion it has been

experiencing in the past three decades has reduced the economic imperative for external migration – although it has increased it for internal migration. The potential of economic and political factors to influence future outward migration depends on the extent to which it succeeds in making economic development in the country more spatially equitable, and to the degree to which government moves towards greater transparency and democratization. The declining population of younger working age people and China's continued espousal of a one-child policy means that the demographic push will not be strong.

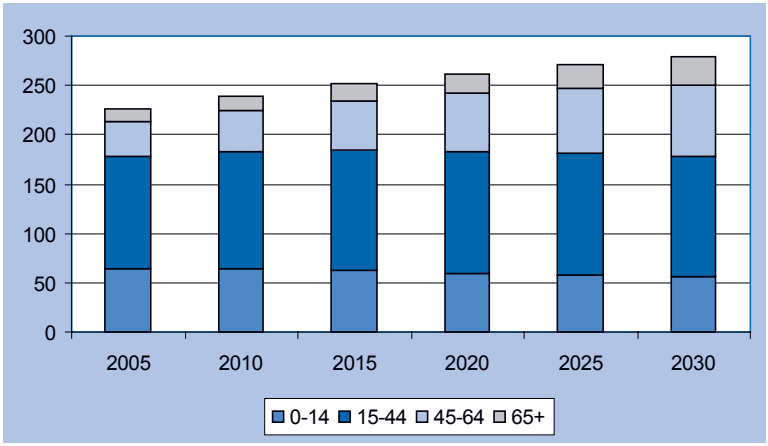
In the near term, a steady stream of migration will continue to occur to countries such as Japan and Korea, which are currently richer and which share ethnic and cultural affinities with the Chinese. The increasingly significant migration to Russia from bordering provinces of China is also likely to continue in the immediate future. The flow of Chinese youth who will go to the US or Canada or the UK to study and remain there will likely continue, possibly increase in the short term as more families are able to afford to send their children there, but might eventually decline in magnitude as China becomes more prosperous and demand for high-skilled workers continue to rise.

Population growth in the Philippines is expected to slow down but remain relatively high up to the year 2030. The population of those 25 to 44 years old, which comprised 70% of total labour migrants from the country in the past two decades, is expected to grow 1.9% annually to 36.7 million in 2030 from 22.9 million in 2005. In the meantime, education levels are improving as the share in the labour force of those who finished tertiary education has consistently increased from 9% to 16% in the past two decades. Some of this investment in education is motivated by the possibility of finding overseas employment, especially in the health care industry. The share of those with college education among migrant workers has increased from 26% to 36% in the same period. The country's capacity to provide employment to this young and well-educated workforce will be an important determinant of the push for migration for the Philippines.

The existence of large diaspora Filipino communities in many OECD countries – notably in the United States, Canada, Australia, Italy, and Spain – is no doubt playing a big role in facilitating migration movements today and will likely to be even more important in the future as their numbers grow. These communities have also grown even in countries which only accept temporary migrants, not settlers, like Saudi Arabia, Japan, and Republic of Korea. They facilitate entrance to the labour market, provide finance for travel, and help with the integration of newly-arriving friends and relations. How the "network effects" will determine the size of future flows is difficult to specify, but it is certain that they exercise a separate and important influence on migration.[13]

In sum, most out-migration from the Philippines is for economic reasons, and as such its future magnitude will depend heavily on the country's future

Figure 1.2. **Projected Indonesia population by age group**



Source: Ducanes and Abella (2008).

course of economic growth and expansion of employment opportunities. In the near term and perhaps for the next decade, the economic push will likely remain strong, as the youth population continues to grow relatively rapidly and as per capita income in the country will remain much lower than in developed countries where employment opportunities are available. If it attains sustained economic growth for a longer period, then the push for migration will likely weaken. The biggest political threat linked to migration is in Mindanao where a continuing battle is being waged by the government against a Muslim secessionist group. Under a worst case scenario, large scale migration from that area to nearby Sabah in Malaysia might occur.

The ageing population in the nearby developed Asian countries of Japan, Korea, Singapore, and in the Chinese province of Hong Kong will likely mean that intra-Asian migration will comprise a larger share of migration from the country, especially given that the country is a major supplier of health care and household workers. This in turn leads to a scenario of an increasing share of women among total migrants because they dominate these professions. Intra-regional migration might also be facilitated if ongoing discussions on regional labour market agreements, such as those being discussed in the ASEAN, are successful, and if such agreements expand to ASEAN+3.

Indonesia has had a fairly successful birth control programme that is generally credited with reducing total fertility rate from 5.3 in the early 1970s to about the replacement level of 2.1 today. According to the government agency in charge of the family planning programme, more than 60% of

Indonesian couples of child-bearing age avail themselves of the programme.[14] As a consequence, the population of 44 years old and below is expected to be stable in the near future and to decline beginning 2015 (Figure 1.2).

This means is that in the medium term there will be no additional pressure for migration because of a growing young population. However, even without a growing young population, pressure for outward migration is already strong: most migrants from Indonesia are young, low-skilled, and the majority are women – precisely the group that is unable to participate productively in the domestic economy as evidenced in the country's unemployment figures. Recent figures indicate that 90% of the women who migrate for work from Indonesia find employment as domestic helpers. The gross tertiary level enrolment rate in the country is relatively low at only 17% compared to about 29% for both the Philippines and Malaysia, possibly indicating that the overall skill level of the labour force is unlikely to rapidly improve soon. The country's ability to provide employment opportunities to its large number of young unskilled workers and to generate paying jobs for its women will shape its future migration outlook.

But in the march towards 2030, Indonesia is in good position to drastically reduce this push: if it is able to sustain its recent growth it will reach the income level of Thailand and Korea when migration from these countries abates by the late 2020s; if it is able to regain its growth in the decade preceding the crisis then it will reach that income level before 2020. The demographic push for migration will also diminish as the country's population growth continues to slow down as expected and the number of the young population, who comprise the big majority of migrants, stabilizes or even declines. No major external conflict is immediately evident that may lead to large scale war and large scale migration. Internal conflict has subsided in areas like Aceh, but may still emerge. If this conflict flares up again, it may possibly lead to outward migration to nearby countries – Malaysia in particular, but probably not much further.

China and Southeast Asia are believed to be highly vulnerable to the adverse effects of climate change. Under current conditions, more than 13 million people in the major port cities in the region are believed to be exposed to coastal flooding.[15] If the expected effects of climate change – sea-level rise, natural subsidence of land, and more intense and higher storm surges – are added, then the number of people in the region exposed to coastal flooding rises to 19 million.[16] This and other possible future environmental developments – including the drying up of major rivers and continued deforestation could lead to massive displacement of people and reconfigure future international migration flows in the region. However, unless circumstances are really extreme, the resulting migration is expected to remain largely internal to the country or to the region.

West Africa[17]

In 2050, the proportion of young people could still be 29% in sub-Saharan Africa, 28% in West Africa, compared to 15% in Europe. In sub-Saharan Africa, West, Central and East Africa are experiencing a fall in the median age, which is considerably increasing the dependency ratio, unlike Southern and North Africa, where the median age is increasing.

In light of such demographic challenges, many factors will determine the geography of African migration in coming decades: economic growth in developed countries, emerging countries, North Africa and sub-Saharan Africa, increased exploitation of West African oil resources (Nigeria, Chad, Mauritania, Mali, Niger, Liberia, Côte d'Ivoire, Cameroon, etc.) and its economic and financial impacts, the trend of commodity prices, world geostrategic relations and risks of instability. Agriculture will also play a key role. North America, Europe and, to a lesser extent, Asia will see a rise in their agricultural potential with new land being cultivated and increased crop intensity. However, the realisation of a greater part of Africa's agricultural potential can also be envisaged, in order to meet the rising need for food products in Asian countries and the development of bio-fuels[18] in Europe and America[19], although greater caution is called for in the case of this hypothesis. Africa will have to find the right balance between land resources, food security and the development of new partnerships and external markets.

Migratory flows will depend on the reaction of West African markets to these new opportunities. As has been the case for generations, these opportunities are guided by the opening of new growth or production basins. Thus this rhythm of intra-regional migration could continue along with the redeployment towards new agricultural zones if they become further developed through investment. However it is difficult to quantify the impact that this could have on migration towards OECD countries. What can be said is that the trend of high mobility in Africa, and particularly in sub-Saharan Africa, due to very high demographic growth, is likely to continue, and this mobility will, as in the past, lead to internal, regional and international movements.

Northern Africa[20] *and the Middle East*[21]

According to Dyer (2005), the share of the Algerian population residing in agglomerations of more than 750 000 inhabitants has been quite stable over the 1950-2000 period and is projected to remain so in the next two decades. This is also true in the case of Morocco, where this share increased between 1950 and 1980, before stabilizing. These stylized facts suggest that a process of decentralization of economic areas and decision-making has been at play in these two countries. The proliferation of new urban centres of medium size has been attracting an increasing proportion of rural migrants and has acted

as buffers for internal and international migration, in a context marked by a virtual halt to emigration abroad (Giubilaro, 1997).

Given the important changes in Algeria's, Morocco's and Tunisia's population age structure, demographic pressure in these countries will remain high and will possibly increase in the coming decades. For instance, it is likely that these countries will be confronted with the same aging problem as Europe, as individuals in their forties today will start to retire from 2030 onwards. Before that date, however, it is also probable that the labour market will be subject to heavy pressure for several years, especially as the expansion of the working age population is currently coupled with rising labour force participation rate among young male and female workers. This suggests that the number of potential migrants will be on the rise in the next two decades, as international migration has traditionally provided a solution to labour market disequilibrium in the past. However, given the age structure of the population, this migration potential is likely to rapidly decline from 2030 onwards.

Given the likely evolution of Algeria's, Morocco's and Tunisia's GDP per capita, sustained migration flows of low-educated workers from these countries may be anticipated in the next decade compared to the flows observed during the last twenty years. With a pessimistic scenario concerning per capita GDP growth, the inflow of low-educated Algerian emigrants may however slow down in the coming years.

From past poverty trends in Algeria, Morocco and Tunisia and assuming that these countries will experience the same pace of poverty reduction in the next decade, it can be conjectured that no significant changes will occur in the coming ten years in the migration from these countries due to poverty. However, vulnerability to poverty remains important in these countries, which further indicates that poverty prospects have to be considered with caution, especially given the ongoing financial and economic turmoil.

Environmental conditions could also play an important part in determining migration flows from these countries. Two factors may explain why the anticipated costs of climate change for Algeria, Morocco and Tunisia will necessarily be significant:

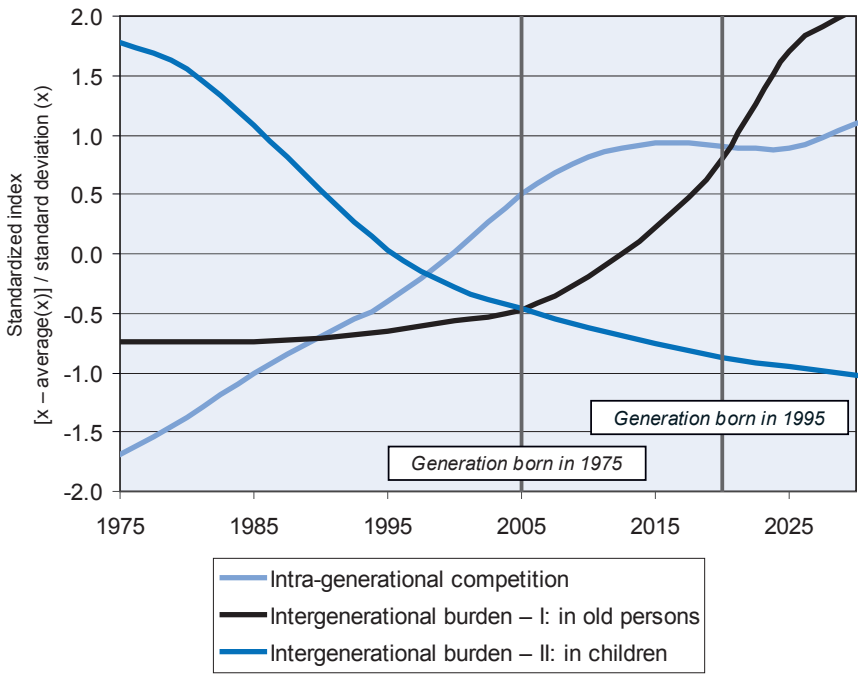
First, a significant share of the working population in these countries is found in the agricultural sector. Potential water scarcity (due to increase in temperature and decrease in rainfall) will then be particularly severe in Algeria, Morocco and Tunisia, leading to problems with local food production and economic development. The resulting reduction of agricultural production is likely to induce a decrease in wages and employment of the population for which agriculture is the main source of income. This may be followed, in the short term, by a displacement of the rural area to already over-populated cities, and, in a longer term, to richer countries.

Second, a large majority of the population and of economic activity is concentrated in the major cities and the coast line. Then, the impact of climate change on coastal areas (the rise in sea level) is likely to be exacerbated by high demographic growth and by significant rural migration which will intensify in view of the increasing difficulties of the agricultural sector.

Despite these important consequences of climate change, experience from the past in Algeria, Morocco and Tunisia suggests that, while environmental hazards (droughts, earthquakes and floods) affect most people, those made homeless have a high propensity to return to their homes after a disaster. This may then mitigate the role of climate change in shaping future migration patterns from these countries.

The Middle East and North Africa (MENA) region is the beneficiary of a "demographic gift." Due to the peak in fertility in the 1980s, followed by a subsequent decline in birth rates, the proportion of young, active, working-age individuals in the current MENA population is exceptionally high. The

Figure 1.3. **The demographic dividend in the MENA: Demographic competition and burden at 25 years**



Source: Fargues (2008).

generations born between 1975 and 1995 (young adults) do not have to live with the burden of supporting their children or their parents and grandparents, providing societies with a so-called demographic gift. This demographic gift is a temporary one: the youth bulge will eventually pass from the working age to the retirement age, and the child dependency of the recent past will give way to old-age dependency, but today the dependency ratio[22] is at a low ebb.

If one can comfortably predict that emigration from MENA countries will increase in the coming decade, one can also affirm that its profile will change in conjunction with the demographic transition. Future patterns of migration will not resemble those of the past and not even of the present day. Family profiles of young MENA migrants are going through radical changes.

Yesterday, migrants had a family left behind and their emigration was motivated by a drive to feed and educate their families. Remittances were the main reason for living the country and in many cases, return was part of the migration project. Tomorrow, young emigrants will typically have no children or wives left behind and their motivation will instead be ambition and the desire for self-accomplishment.

Latin America[23]

The expected future increase in the Latin American countries' populations (growth recorded between 2005 and the year at which population growth will peak) varies considerably. Larger relative increases will be recorded among the countries in full transition, although the situation will vary considerably from country to country. Those expected to witness the least growth include Peru, Dominican Republic and Nicaragua (45.6%, 48.9% and 51% respectively), followed by Ecuador, Panama, Venezuela and El Salvador (56.7%, 57.3%, 58.6% and 68.9% respectively). Paraguay and Honduras, by contrast, will experience higher levels of growth (82.6% and 92.4% respectively). When their population growth peaks, these two countries will have practically doubled the population they had in 2005, as will two countries undergoing moderate transitions: Haiti (94.1%) and Bolivia (88.1%). Guatemala, meanwhile, is the country that will experience the largest increase in population (151.8%).

As demographic transition advances, the impact of fertility on population growth declines. Its effect is not completely lost, however, until fertility reaches replacement levels. From that moment onwards, as shown in the cases of the countries in the more advanced stages of transition, growth depends mostly on age structure in the countries that still have a more or less important proportion of women of child-bearing age.

From another perspective, the size of the young population in Latin America and the Caribbean, – among whom the majority of potential migrants can be found – has stabilized in the current period (2005-2010). The

working-age population is growing but at a slowing rate, and the older adult population is expected to continue expanding until the end of the period. This undoubtedly confirms the well-acknowledged fact that population ageing is the main Latin American demographic phenomenon of this era and will become increasingly important in years to come, both for society as a whole (population ageing) and for the elderly themselves (individual ageing), as the relative and absolute weight of older persons in the population exceeds that of other groups.

How will changes in the dependency ratio between age groups eventually impact on international migration? Although it is possible to identify opportunities for reallocating resources, the observations above suggest that it is very difficult to profit from all the benefits demographic trends will provide. Hence one cannot discard a continuity of migration abroad under the old figure of the "escape valve", this time with two fresh nuances: a lesser relative expansion of the work force, and a higher qualification.

Three issues stand out as being particularly relevant for the future of migration in Latin America.

First, the perspective of transnationalism opens up the debate on the so-called transnational families, namely, those which keep part of their members abroad, and impose distant filial bonds, redefining traditional gender roles and affecting children's sociability and numerous learning processes. The study of the transnational family is relatively new. It clearly challenges research and public policies, and makes the idea of any migratory intervention being strictly related to the control of migrants' entry and permanence appear obsolete, thus urging for regional and global cooperation.

A second issue relates to the growing visibility of women's participation in migration, which has been outstanding in the region. Even though the term feminization of migration is commonplace in public debate and, therefore, bound to become void of meaning, the truth is that the specificity of female migration and the diversity of its consequences for Latin American women are still largely unknown. The defining element of this denomination is a growing participation – and even a majority – of women in many migration flows, particularly in the most recent ones, although the most important impact of feminization is qualitative (Martínez, 2003). In the future, there may be changes in the meanings and consequences of international migration entailing the mandatory consideration of gender in the analysis of migration processes and the design of migration policies. This translates into paying proper attention to the experience of women, without overlooking the masculinity perspective.

Finally, skilled migration will be an essential chapter of Latin American migration. Several factors contribute to its persistence, related to both the deteriorating conditions of the labor market in the countries of origin and the limitations to the development of research, science and technology, and the

Table 1.2. **Main factors affecting migration: Future trends and human rights of migrants in Latin American countries**

Factors as continuities	Factors as changes
Development-driven global asymmetries and demand for migrant workers: motivations for international migration	Advanced phase of demographic transition and reduction of social protection foster emigration if benefits associated with demographic dividend are not exploited
Emigration pattern to United States and Spain: persistence of labour demand, networks and visibility of Latino communities	Incipient diversification of emigration as source of human resources (Brazilians in Japan); exchange of workers through intraregional migration, specially to Argentina, Venezuela and Costa Rica (probable eruption of Chile)
All Latin American countries as source of labour with increasing skills but less job opportunities in their countries	Migratory transnationalism and consolidation of transnational communities
Social and economic impact in selected countries: potential integration of intra-regional immigrants in the case of Argentina will contribute to maintain migration; consolidation of El Salvador as a "transnational nation" would bring a successful model of links between migration and development	Consolidation of migratory feminization; irruption and visibility of indigenous peoples' mobility; specific dynamics of skilled migration
Unsolved problems: trafficking and undocumented migration will persist as central part of the migratory agenda (regional, American and Ibero-American)	Increasing social vulnerability and severe human rights problems for migrants in the context of anti-immigration discourse
Migration context to the First World will remain as an impediment to genuine governance of migration: mobility in the context of restrictions with some exceptions in the Ibero-American Community	Migratory governance opportunity: humanization of migration with ratification of international instruments
Increasing sense of responsibility among Latin American countries about their role in migration governance: source of demands and negotiations	

pull factors present in developed countries, stemming form the demand for specific competencies in the sectors of technological innovation and healthcare (CEPAL, 2007).

Russian Federation and Central, Eastern and South East Europe

Russia stands before a wide range of possible futures, caught as it is between liberal economic trends and illiberal political tendencies. It certainly has the potential to grow into a major economic power by 2025/30, but it also faces considerable obstacles. Among the major constraints are its high dependency on energy resources (but relatively low levels of energy investment), significant infrastructure bottlenecks, declining education and public health sectors, and an underdeveloped financial system. A shrinking population and labour force shortages could also take an economic toll, particularly if the country fails to invest more in human capital, rebuild its scientific and technology base, and consider greater employment of foreign workers.

Russia's population is set to fall quite dramatically to 2025, namely from 141 million to around 130 million. Male mortality rates are extremely high, comparable only to those experienced in African countries devastated by widespread HIV. At 72 years, current female life expectancy is close to the level of 1955, and at 59 years male life expectancy is actually three years below its 1955 level. At present levels of mortality, less than six out of every ten 15-year-old Russian boys can expect to survive until 60 (World Bank, 2006). The prospects for correcting this precipitous decline are slim since the population of women in their 20s (their prime childbearing age) will also fall steeply, to around 55% of today's count.

At the same time, the population is ageing and the working-age population structurally declining, mainly due to falling fertility rates in recent decades. By 2025 the labour force is set to decline by some 11 million people, the vast bulk of whom will be in the 15 to 39 age bracket. Muslim minorities, with their more favourable fertility rate, will make up a larger share of the Russian population (rising from 14% to 19% by 2030 and 23% in 2050) as will Turkish and Chinese immigrants (NIC, 2008). On top of this rapidly changing demographic profile comes the huge outflow of local populations from Russia's Far East and eastern Siberia, exacerbating regional population imbalances. Continuing outflows from those areas pose a serious threat to their socio-economic development.

Russia is a net recipient of migrants from most countries of the former Soviet Union. Moreover, Russia is also a major source of immigrants to Western Europe and North America, according to World Bank research (World Bank, 2007b).

Some of the other countries of the former Soviet Union are also expected to experience a decline in the labour force, and thus savings, owing to rising

elderly dependency ratios (World Bank, 2007). By contrast, Central Asian states will face difficulties with higher population growth and problems associated with a particularly youthful population. The South Caucasus as well as other Eurasian states will face problems associated with continuing out migration due to economic reasons (Institute for Security Studies, 2006).

Certainly from the point of view of the member countries of the Council of Europe Development Bank[24] (CEB), economic migration will remain an important phenomenon as long as differences in GDP per capita and living standard levels persist among these countries, as well as between Europe and other regions and continents. It is likely that Europe will continue to be a centre of attraction to many migrants coming from poorer parts of the world. Highly skilled migrants to Europe are expected to come, for the most part, from low-income countries, whereas low-skilled migrants are predicted to come predominantly from middle-income countries, notably from Eastern Europe (OECD, 2007).

While economic factors will continue to be significant drivers of migration, demographic dynamics will also play an increasingly important role in determining migratory flows in CEB member countries. Labour migration is likely to gain in importance in view of the aging of populations in Europe. According to most of the forecasts, Europe's population is likely to experience a strong decline in the future, due to negative net natural population growth. This is already the case in some Western European countries (Germany and Italy) and in most of the Eastern European countries: from 2000 to 2003, the populations of Eastern European and Central European countries and the Balkans declined overall by 1.1 million and by more than 2.7 million respectively (World Bank, 2007b). The decline of the latter is due both to a natural population decrease and to migration. Both factors combine in most of the Eastern CEB member countries: for instance, Bulgaria, Latvia, Lithuania, Moldova, Poland and Romania are experiencing population declines owing to both more deaths than births and more emigration than immigration (World Bank, 2008). Only the Czech Republic, Croatia, Hungary, Montenegro, Serbia and Slovenia obtain population gains from migration.

In Eastern Europe, the demographic pattern, combined with out-migration, already seems to be causing labour shortages – especially of skilled workers – which could become a serious constraint on economic growth. For instance, over the period 2005-2007, employment has stagnated in several countries (Czech Republic, Estonia, Lithuania, Latvia, Poland and Romania) while the job vacancy rate showed a steady and significant increase, due to qualification mismatches, limited internal labour mobility and labour market rigidities. This phenomenon may indeed denote shortages of skilled workers and a tightening of labour markets (Havlik, Holzer *et al*., 2008). In certain

countries (Romania in particular), the situation in the labour market is further aggravated by out-migration: natives working abroad do not return home as foreign wages are still substantially higher than rising domestic wages.

In the near future, most Eastern European countries are likely to stay net-emigration countries unless economic reforms lead to rapid increases in the standard of living (World Bank, 2007b). Almost all Central and Eastern European CEB member countries and many Western European countries are forecast to show natural population decreases in the future. The decline in the working-age population as well as the rise in sustained foreign investment in the new EU member states will create a demand for workers that can only be sourced from abroad. The more prosperous CEB member countries may be able to obtain some of these workers from the rest of the region, but the other member countries' demands will have to be met from elsewhere, probably from Africa and Asia (World Bank, 2007b).

Scenarios to 2030

Given the uncertainties in all of the areas driving future migration patterns – demographic, economic, geopolitical, social, technological, environmental etc. – it seemed both impossible and inappropriate to try to predict a single view of the world in 2030. Rather, as Rohit Talwar underscores in his chapter, it is much more useful for policy makers to think in terms of a range of different possible futures. These can be captured through scenarios which are a tool for exploring alternative plausible stories about the future. It is important to note, however, that scenarios are not forecasts.

The starting point for the scenarios – developed, discussed and constructed with the members of the Steering Group – was the identification of two main forces expected to have most influence in shaping international migration futures. The choice fell on the level of growth in OECD economies and the level of social development in non-OECD countries. Four sets of key parameters were also identified: a range of social, economic and political descriptors; the leading "pull" factors attracting migrants to OECD countries; the leading "push" factors driving people to leave their home country; and so-called "wild cards" or low-probability, high-impact events. Finally, nine underlying patterns of change were made out: demographic shifts, the changing economic landscape, political complexity, expanding business agendas, science-led innovation and growth, an ageing society, talent shortages, global internet expansion, and environmental risks. Rohit Talwar integrates these different components into five scenarios:

Scenario 1 – Progress For All: growth and development have delivered advancement in social welfare across the planet. There is strong demand and intense competition for skilled and unskilled labour across the OECD and

developing economies and a high circular flow of migrants results, particularly among skilled labour.

Scenario 2 – OECD Long Boom: strong innovation-fuelled growth is not matched by the BRICs who are beset by internal challenges. However, many other developing nations achieve advancement. There is strong demand for skilled and unskilled migrants from the OECD but there is less competition for talent from non-OECD countries.

Scenario 3 – Uneven Progress: while the OECD and BRIC countries continue to develop, the gap with emerging nations and LDCs grows. There is intense competition between nations in these groupings, particularly for skilled migrants.

Scenario 4 – Globalisation Falters: a series of global economic slowdowns dramatically reduce demand for all but the most specialist of skilled labour.

Scenario 5 – Decoupled Destinies: there is a decoupling as OECD nations struggle with the increasing cost of recovery from a series of punishing downturns. The developing nations however are propelled by an influx of long-term investment capital. While there is low demand for specialist skills in the OECD, opportunity improves both domestically and in other developing nations across the non-OECD universe.

What stands out is that, in all of these scenarios, demand for migrants persists through the coming years, albeit at different levels. This is overwhelmingly the case with OECD countries (largely explained by the requirements of ageing populations and older, shrinking workforces) and applies in several of the scenarios also to the BRICs and other emerging economies. The upshot is the strong likelihood of intensified global competition for talent between the developed (and under certain circumstances also the emerging) countries on the one hand and the developing world on the other. Depending on the scenario, the kind of talent sought ranges from most categories of skills to the highest qualifications. The BRICs' role varies somewhat as a function of the scenario: under strong domestic growth conditions (*e.g.* Progress for All), for example, they compete with OECD countries for internationally mobile skills, under weak economic conditions (*e.g.* OECD Long Boom) they are net exporters of migrants or at least experience much lower inflows over the period to 2030, and where both OECD countries and BRICs show strong growth (*e.g.* Uneven Progress), top talent may increasingly circulate between the developed and emerging economies. Similarly, the situation in developing countries is not bleak in all scenarios. Weak domestic growth, persistent problems of weak governance, insecurity and environmental degradation combine to add pressure to out-migrate; but where economic growth prospects improve to 2030 (*e.g.* Decoupled Destinies), pressures to migrate to richer countries relent somewhat.

All the scenarios have implications for the management of immigration flows and integration of migrants into the labour market (in particular education, skills and training) and into local communities more generally. Integration aspects aside, however, what also stands out is that the different scenarios generate different critical challenges for policy makers. These range from a surge in refugee migrants (OECD Long Boom) and moves to strengthen the magnet effect of welfare systems (Uneven Progress) to the accelerated transfer overseas of core OECD corporate operations and investments (Decoupled Destinies).

The five scenarios in each of the six regions considered here generate a diverse and complex range of outcomes. Rohit Talwar sketches out the possible migration implications, region-by-region and scenario-by-scenario, in a series of tables which can be found in chapter four. The findings can be summarised as follows:

In **South Asia** the Progress for All and OECD Long Boom scenarios have very similar implications with rising domestic demand, temporary decline to 2012 followed by strong outflow of skilled labour to OECD importing countries until 2020 and then gradual reduction to 2030. Professionals are in demand in stronger developing economies and student outflows to the OECD are high. The Uneven Progress, Globalisation Falters and Decoupled Destinies scenarios have very diverse outcomes: for example, very selective opportunities for professionals in the OECD *versus* rising demand for them in the OECD; or steady demand for low skilled *versus* rising demand for all skill levels in the Gulf States.

In **China and South East Asia** the Progress for All, OECD Long Boom and Uneven Progress scenarios have very similar implications with strong outflows of students and professionals to the OECD and BRICs, strong demand for all skills from Gulf States, growing levels of intraregional migration and strong demand for semi-skilled and unskilled workers from net importing OECD countries. The only difference is the level of return flows. The Globalisation Falters and Decoupled Destinies have very different outcomes, for example limited *versus* growing demand for labour in the Gulf States.

Of all the regions featured, **Africa** has perhaps the widest variety of implications across the scenarios. For example, Progress for All, OECD Long Boom and Uneven Progress all entail increasing demand from environmental refugees and increasing flows of semi-skilled and unskilled workers on temporary contracts. Globalisation Falters and Decoupled Destiny both see a growing influx of professionals from OECD seeking to work on development projects, but they differ in other respects: for example, limited educational outflows due to limited global opportunities for highly skilled *versus* rising

numbers of student outflows to other developing countries despite improved educational standards.

For the **Middle East,** Progress for All, OECD Long Boom and Uneven Progress all suggest rising student and professional outflows, circular migration as well as a gradual rise in domestic competition for talents and incentives to stay in the region. The Decoupled Destinies scenario is very similar with the exception that there will be rising return flows of students and professionals and there is no gradual rise in domestic competition for talent. Globalisation Falters is different in that it expects there to be only moderate student demand from the region, increasing circular regional flows for all skill levels, and more displaced guest workers as international opportunities dry up.

In **Latin America and the Caribbean** high levels of all skill levels to net recipient OECD countries and growing student outflows due to economic advancement but also rising circular flows within the region are expected for all scenarios with the exception of the Globalisation Falters scenario where limited opportunities for professionals and students and thus growing numbers of economic and political migrants within the region are expected.

In the **Russian Federation and Central, Eastern and South East Europe**, OECD Long Boom and Uneven Progress have very similar implications – rising student outflows encouraged by economic advancement, strong demand for skilled professionals across OECD and non-BRIC developing countries and, in the period 2010-2020, high demand for semi-skilled and high skilled workers. Also, rising domestic opportunities in stronger economies and some circular migration within Eastern Europe and South East Europe are expected. The Progress for All scenario is fairly similar with the notable exception that return flows will be strong and circular migration will likely grow. With the exception of high return at all skill levels the Globalisation Falters and Decoupled Destinies have rather different outcomes, the former for example with limited opportunities at all skill levels domestically, the latter with strong student outflows to other developing countries.

Overall findings and policy challenges

The following points sum up the main, global-level findings of the project:

- Worldwide, migration flows are very likely to rise or at least remain constant over the next 20 years or so, much in line – on aggregate – with trends of the last 30 years.
- In many non-OECD regions, a set of economic, demographic, social, environmental and political factors are producing a combination which, on balance, is likely to underpin a continuing build-up of migratory pressures.

- The broad expectation is that demand for migration into the OECD area is likely to rise or at least stay constant, especially, perhaps, in those OECD countries in which population ageing and economic attractiveness make for a powerful combination of pull factors.
- It is expected that global competition for labour will intensify, notably for top talent, highly qualified and semi-skilled individuals – and perhaps even for unskilled workers.
- In an increasingly multi-polar world, political stability will remain a major concern for a good number of countries and regions; coupled with an increasingly disruptive impact on the environment from climate change, it is to be expected that there will be an upward trend in migrants seeking to cross borders in search of less risk-laden locations. It is uncertain, however, what share of such migrants will head to OECD member states as their preferred destination and how many of those will gain entry.
- The findings reconfirm, depending of course on migration policies, that migration flows to OECD countries are unlikely to be sufficient to offset the economic effects of population ageing and decline.

There are a range of policy challenges OECD governments can expect to have to address in the coming twenty years or so. Circumstances will of course vary from OECD country to OECD country and will depend on which particular future materialises. But some issues identified over the course of the project stand out as challenges that will very likely prove common to a good number of OECD governments under most future settings. Among the "top-level" challenges will be the need for governments to:

- Adjust their policies to a global labour market context in which they may find themselves in increasingly intense competition with other OECD countries and emerging economies for knowledge workers, as all seek to maintain and improve productivity levels;
- Consider how in a globally more competitive environment they can put in place measures to maintain academic excellence, retain top talent, and dissuade businesses from moving both their investment and top quality human resources abroad;
- Address growing concerns voiced by developing countries about "cherry-picking" of their best talent and "brain drain" to OECD and BRIC countries even where, as seems to be the case, labour migration is becoming increasingly employer-driven;
- Think through more systematically the ripple effects of large-scale immigration on such key areas as labour markets (*e.g.* impact on wages

and salaries) and local communities (*e.g.* implications for housing, health care provision and schooling);

- Strike a viable balance in demonstrating and communicating to their citizens the need for continued or increased immigration across the full range of skilled and unskilled labour while at the same time ensuring that appropriate policies for the monitoring and control of migration and integration of immigrants are in place;
- Devise ways to encourage educational institutions in OECD countries to develop and expand education and training capacities to help migrants adjust, integrate and upgrade their skills, for example outreach and university marketing programmes targeted specifically at foreign students, language training, and curricula tailored to foreign students' needs;
- Increase opportunities for migrant students to work so as to help finance their studies and gain specific, host-country work experience, and facilitate the transition from student to worker with a view to retaining students after graduation;
- Facilitate the establishment of educational and training programmes and campuses in developing world locations so that students may obtain the appropriate qualifications which heighten their job chances on the home labour market and increase their chances of finding work in OECD countries;
- Determine the right balance among domestic retirement age, female participation, permanent immigration and temporary immigration, in order to redress peaks and troughs of domestic skill supplies;
- Respond constructively to sympathetic public sentiment towards in particular poor migrants fleeing areas affected by political/military conflict or severe environmental damage, especially in the light of existing international agreements governing refugees.

One of the objectives of the project on *The Future of International Migration to OECD Countries* was to identify broad policy issues and not to explore the full range of specific measures that would need to be implemented in order to address them. For national and regional policy makers the challenge is now to review each of the scenarios, assess the local implications for the strengths and weaknesses of the push and pull factors, determine the critical areas of likely demand for each skill level, and consider a range of appropriate policy options.

Notes

1. Our findings were confirmed by Borgy *et al*. (2009) from CEPII, who produced a study on global migration to 2050 and see high and raising rates of migration practically everywhere.
2. This section is largely based on Khadria (2008) unless otherwise indicated.
3. The migration flows within South Asia consist mainly of people recruited to perform unskilled and blue-collar work, often illegally. Technical and skilled workers comprised a tiny proportion of the intra South Asian migrant flows from Bangladesh to India. The United Nations (2001) had projected that during the period 2000-2025 the population of Bangladesh would grow from 137 million to 211 million. It said, "These increases, which in proportional terms are significantly greater than those projected for India, will tend to raise substantially the volumes of future immigration both from Bangladesh … to India." United Nations (2001), as cited in Dyson, et al. (2004:128). See also United Nations (2003, 2006). However, by and large, the in-migration data in destination countries in Asia are not well-structured. As for emigration data in origin countries, estimates are difficult in India because the law does not require college graduates (and non-graduates who have previously worked abroad) to submit their contracts to the Protector of Emigrants for approval prior to accepting employment abroad.
4. See Hansen and Stepputat (2005).
5. Ashish Bose in *Economic and Political Weekly*, 14 April 2007.
6. See Khadria (2004a), also (2004b).
7. The term "semi-finished human capital" was first used in 1994 by Majumdar (1994).
8. See *Draft Report of the Working Group on Higher Education, 11th Five Year Plan*, Planning Commission, Government of India, New Delhi (undated).

9. This section is largely based on Ducanes and Abella (2008) unless otherwise indicated.

10. Wang (2008).

11. *Ibid*.

12. Socio-cultural ties meaning its close ethnic links to countries like Japan and Korea, but also including the network effect of many Chinese communities elsewhere in the world.

13. Network effects are evidently important in explaining the growth of Filipino migrant population in the US. According to the US Bureau of the Censuses foreign-born Filipino population in the US rose from 104 843 in 1960 to 501 440 in 1980, 912 670 in 1990 and reached 1.638 million in 2007. For an attempt to include network effects among the determinants of migration, see Abella and Ducanes, "Is Transnationalism a new paradigm for development?" in Castles, S. and Delgado-Wise, R. (eds.), *Migration and Development: perspectives from the South*, IOM, Geneva, 2008.

14. *Jakarta Post* (2008)

15. Nichols *et al*. (2008).

16. *Ibid*. This uses current population instead of projected population.

17. This section is largely based on Bossard (2008) unless otherwise indicated.

18. Bio-diesel from palm oil.

19. Ethanol from cereals.

20. This section is largely based on Gubert and Nordman (2008) unless otherwise indicated.

21. This section is largely based on Fargues (2008) unless otherwise indicated.

22. Defined as the ratio of the sum of the population aged 0-14 and that aged 65+ to the population aged 15 to 64.

23. This section is largely based on Martinez Pizarro (2008) unless otherwise indicated.

24. These four paragraphs are based on Council of Europe Development Bank (2008) available on www.coebank.org.

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Chapter 2

Immigration "Pull" Factors in OECD Countries over the Long Term

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Introduction

Immigration into the more developed countries of the OECD has been on the upswing for the last decade and more. Their economic opportunities are a strong attractor for migrants while the projected demographic aging of the more developed members has heightened interest in the possible future role of migration. In anticipation, many countries have instituted policies that are more welcoming to immigrants. While there is reason to suspect that policies do not always work exactly as intended, there is every reason to expect that the OECD countries will continue to exert a substantial pull on international migrants. And policymakers are likely to attempt to attune admission policies with the evolving pull factors.

If demography is destiny, aging societies will have increasing number of dependents who will place a burden on retirement systems and a drag on productivity growth – in many countries that scenario is abetted by a slowing of the growth of the working-age population (McDonald and Kippen, 2001). The resulting labour shortages, as well as ongoing wage differentials will likely continue to attract migrants to the most developed and prosperous countries (Dawkins and Lim, 2004). The alternatives are to compensate for negative population and labour force growth, by increasing total fertility rate back to replacement levels and improving labour force participation – changes difficult to accomplish and unlikely to operate forcefully in the next two decades. Of course, increasing immigration by multiples from its current levels is also not without its own problems (Holzmann, 2005).

But immigration will surely play a beneficial role in dealing with future demographic dilemmas and, regardless, it is likely that economic opportunity and existing migrant networks will continue to attract migrants. That returns us to the purpose of this paper, which is to evaluate the "pull" factors that will impact on future migration. The concept of migration push and pull, while overly simplistic, neatly focuses attention on the polar forces between which migrants oscillate. This paper's mandate is to "examine available projections, forecasts and quantitative assessments of factors in OECD countries likely to attract migrants to OECD countries," *e.g.* the pull factors that will operate in the future.

We turn first to a discussion of current trends in migration in the OECD countries. In order to place migration pull in its proper context we next discuss the theories of academics and the expectations of policymakers. The body of the paper addresses pull factors, drawing on projections of appropriate elements where possible and ranking countries in terms of their relative future pull. Because there is little agreement on these issues, we consider seven factors typically included in most conversations between experts – namely economic and demographic factors; network effects, labour market factors, education and training, health care and other primarily

Table 2.1. **Trends in total and temporary inflows of foreign population**

Country	Total inflows (1000s)			Temporary inflows (1000s)		
	1995	2000	2005	2003	2004	2005
Australia	87	115	167	152	159	183
Austria	--	66	101	30	27	15
Belgium	53	57	77	2	31	33
Canada	213	227	262	118	124	133
Czech Republic	6	4	59	--	--	--
Denmark	33	23	--	5	5	5
Finland	7	9	13	--	--	--
France	49	92	135	26	26	27
Germany	788	649	579	446	440	415
Greece	--	--	--	--	--	--
Hungary	14	20	19	--	--	--
Ireland	14	28	51	--	--	--
Italy	--	272	--	69	70	85
Japan	210	346	372	217	231	202
Korea	--	185	266	75	65	73
Luxembourg	10	11	14	--	--	--
Mexico	30	24	39	45	42	46
Netherlands	67	91	63	43	52	56
New Zealand	56	38	54	65	70	78
Norway	16	28	31	21	28	22
Poland	--	16	39	--	--	--
Portugal	5	16	28	3	13	8
Slovakia	7	5	8	--	--	--
Spain	--	331	683	--	--	--
Sweden	36	43	51	8	9	7
Switzerland	88	86	94	142	116	104
Turkey	--	168	132	--	--	--
United Kingdom	150	260	407	137	239	275
United States	720	841	1,122	577	612	635
Total	2,659	4,050	4,868	2,181	2,359	2,402
Annual growth %	--	8.8	3.7	--	8.2	1.8

Source: Data extracted from OECD immigration database, 2008, http://stats.oecd.org/wbos/MIG.aspx

integration factors. It is most unlikely that any single factor will dominate future pull forces or that all countries will show a similar balance of pull factors. The final section of the paper constructs scenarios for future pull forces, ranking nations across all factors either for the predominance of economic or demographic pull. These factors primarily impact the number or level of future migration, to which we add an assessment of how countries may shift the composition of future migration.

The current situation

The number of international migrants has increased steadily in the more developed OECD nations. Yet, it may be that the composition of the "type" of migrant may vary in the future, at least as much as the absolute numbers.[1] Of course, the single best source on all types of international mobility is the OECD's yearly report the *International Migration Outlook* (a.k.a. the SOPEMI report). We have no intention of reviewing the many categories that it comprehensively covers, but it is important to touch on three major aspects of migration: the predominance of family-based migration in most all countries, the simultaneous trend toward increasing admissions of highly skilled workers and the deployment of temporary work programs. On average, the OECD countries admit about 44% of total migration for family-related reasons and only about 14% for the express purpose of labour (OECD, 2008, p. 36). We will indirectly address the skill composition of the immigrant stock in the section on education below, but note that many countries are devising policies to attract more skilled workers (Lowell, 2005).

Statistics on the total flow of both permanent and temporary migration are shown in Table 2.1. Clearly, the flow of permanent migrants has increased over time being 83% greater in 2005 than a decade earlier in 1995 for all OECD countries. Some countries posted phenomenal growth over that decade, *i.e.* the Czech Republic at 890%, Portugal at 459%, Ireland 275% and the UK with 171% growth in their annual flow. For reasons of exposition, the table also shows the available numbers for temporary workers that are not fully comparable with the permanent flows which include the admission of both family and working categories. As of 2006 the OECD estimates that there were over 2.5 million temporary workers or roughly three times the number of permanent-type labour migrants (*op. cit.*, OECD, 2008, p. 34). Nevertheless, while substantial in size, the number of temporary workers has not been increasing as rapidly as permanent migration.[2] But there could be further increases in temporary migration as there is increasing interest in temporary programs to bypass concerns about permanent settlement, as well as to boost development in source countries.

We turn next from measures of migrant inflows to net change in Table 2.2 that shows statistics for the OECD nations generated by the United Nations. These data have the benefit of being available for long time periods and using consistent definitions. The countries are ranked in ascending order by their rate of net migration and, somewhat surprisingly, New Zealand is ranked as the OECD country with the least rate of net (out) migration. Australia also has a low rate of net migration. Yet; these traditional countries of immigration are correctly seen as being primary migrant magnets and the inflow data substantiates that observation. Of course, the reason for these trends is that both countries also experience high rates of emigration (*op. cit*., OECD, 2008, pp. 32 to 34). Even countries that are established as leaders in attracting migrants and are so positioned to remain leaders in the near future, may have to manage emigration as well as immigration. The ability

Table 2.2. **Trends in net migration**

Country	Immigrant % of population			Average net annual immigration (1000s)			Net rate of immigration (1000s)		
	1985	1995	2005	1975 to 1985	1985 to 1995	1995 to 2005	1975 to 1985	1985 to 1995	1995 to 2005
New Zealand	16.3	20	15.9	3.5	18.3	-8.2	1.1	5.3	-2.1
Belgium	9	9	6.9	10.5	1.9	-17.3	1.1	0.2	-1.7
Poland	3.5	2.5	1.8	-44.5	-32.4	-23.6	-1.2	-0.9	-0.6
Korea	1.4	1.3	1.2	23.2	2.2	-3.0	0.6	0.1	-0.1
Czech Republic	--	4.4	4.4	--	--	-0.1	--	--	0.0
Australia	21.9	22.7	20.3	67.1	57.8	2.6	4.6	3.4	0.1
Turkey	1.8	1.9	1.8	73.2	25.8	10.7	1.6	0.4	0.2
Mexico	0.6	0.5	0.6	22.6	-1.1	16.1	0.3	0.0	0.2
Slovakia	--	2.1	2.3	--	--	0.9	--	--	0.2
Hungary	3.2	2.8	3.1	-5.7	-4.2	2.1	-0.5	-0.4	0.2
Japan	0.6	1	1.6	7.0	49.5	71.5	0.1	0.4	0.6
France	10.8	10.5	10.7	35.0	12.0	34.7	0.6	0.2	0.6
Finland	1	2	3	1.2	5.0	4.8	0.2	1.0	0.9
Germany	--	11.1	12.3	--	--	95.6	--	--	1.2
Netherlands	5.3	9	10.1	37.9	56.9	22.8	2.7	3.8	1.4
Italy	2.2	2.6	4.3	19.6	23.7	94.2	0.4	0.4	1.6
United Kingdom	6.5	7.3	9.1	38.7	52.3	110.0	0.7	0.9	1.9

Table 2.2. **Trends in net migration**
(continued)

Country	Immigrant % of population			Average net annual immigration (1000s)			Net rate of immigration (1000s)		
	1985	1995	2005	1975 to 1985	1985 to 1995	1995 to 2005	1975 to 1985	1985 to 1995	1995 to 2005
Portugal	3.5	5.3	7.3	16.5	16.5	21.5	1.7	1.7	2.1
Sweden	7.8	10.3	12.4	7.1	23.4	19.2	0.9	2.7	2.1
Norway	3.7	5.3	7.4	4.3	7.0	10.3	1.0	1.6	2.3
Denmark	3.7	4.8	7.2	4.6	5.5	12.6	0.9	1.1	2.4
Switzerland	18.4	21	22.9	10.4	24.4	17.2	1.6	3.6	2.4
United States	7.5	10.6	12.9	588.5	936.3	893.9	2.5	3.7	3.1
Canada	15.1	17.1	18.9	34.3	100.7	100.3	1.4	3.7	3.3
Greece	3.1	5.1	8.8	16.9	21.8	38.6	1.8	2.1	3.5
Iceland	3	3.9	7.8	0.2	0.4	1.1	0.8	1.4	3.9
Austria	3.7	8.9	15.1	6.0	39.5	47.0	0.8	5.1	5.8
Ireland	6.4	7.3	14.1	4.9	3.5	29.2	1.5	1.0	7.5
Luxembourg	28.3	33.4	37.4	2.6	2.8	3.5	7.3	7.3	8.2
Spain	1.1	2.5	11.1	9.6	54.8	343.7	0.3	1.4	8.3
Average	7.0	8.2	9.8	37	56	65	1.3	1.9	2.0
33rd percentile	3.2	3.4	5.8	6	5	4	0.7	0.7	0.4
66th percentile	6.7	9.0	11.3	20	25	30	1.4	2.2	2.3

Source: Authors' tabulations, UN Population Division, World Population Policies database, http://www.un.org/esa/population/unpop.htm

to increase both attraction and retention may be related to where migrants come from.

The sources of international migrants may change in the future as wage differentials lessen or migrants from certain countries become less available. Nations that draw most of their migrants from more developed nations, which will be facing the challenges to be discussed below, may seek to get migrants from today's emerging economies. Much of the casual discussion of international migration explicitly portrays the phenomenon as one of movement from the developing to the more developed world (south to north), even if the reality is somewhat different.[3] In the first, place substantial numbers of migrants travel between developing nations and some observers expect those flows to strengthen over time which could lessen numbers available to travel to more developed nations. On the other

hand, some of todays least developed and most rapidly growing countries, typically in Africa, might be anticipated to contribute more migrants in the future (Hatton and Williamson, 2003). There may be little decline in potential migrants, regardless, as there is a nearly six-to-one ratio of the population of the lesser as compared with more developed nations (*op. cit.*, Lowell 2005). In fact, OECD nations vary tremendously in where they source their migrants. Table 2.3 ranks countries by the proportion of their resident foreign-born population that comes from more, less and least developed source countries. At the one extreme, Luxembourg gets nearly all of its migrants from more developed nations and it and other countries that draw primarily from Western Europe may face the greatest pressure to source migrants from less developed countries. While Australia, Canada and New Zealand get roughly half of their migrants from other more developed nations, that may suggest they are well poised to benefit from established flows from a diversity of sources. The USA and Japan source most of their migrants from a few less developed nations in close geographic proximity, so their future flows may depend on how those source countries change in the future. Of course, our focus here is on pull and not push factors, but these data suggests that the power of pull may, in part, depend upon the national mix of source countries

Table 2.3. **Sources of the adult foreign-born population, 2000**

Country	Source world region, %					Source level of development, %			
	Europe	North America	Latin America & Carib.	Asia & Oceania	Total	Least	Less	More	Total
Luxembourg	99.0	0.7	0.0	0.2	100	0.0	0.2	99.8	100
Poland	97.9	0.9	0.0	1.2	100	0.0	1.3	98.7	100
Slovakia	97.8	0.8	0.2	1.3	100	0.2	1.4	98.3	100
Turkey	96.2	1.2	0.0	2.6	100	0.0	2.6	97.4	100
Hungary	95.0	0.9	0.4	3.8	100	0.4	4.2	95.4	100
Czech Republic	94.6	0.4	0.3	4.7	100	0.2	5.1	94.7	100
Ireland	86.1	5.9	0.4	7.6	100	0.5	11.3	88.2	100
Iceland	72.6	10.7	1.3	15.4	100	0.3	17.4	82.3	100
Switzerland	82.5	1.9	3.8	11.7	100	2.1	17.0	80.9	100
Austria	80.0	0.8	1.0	18.2	100	0.7	20.2	79.1	100
Finland	76.2	3.7	1.7	18.4	100	5.0	20.4	74.6	100
Belgium	86.8	1.3	1.1	10.8	100	5.3	20.7	73.9	100
Sweden	69.8	1.7	5.2	23.2	100	4.1	27.7	68.2	100
Greece	60.3	10.2	3.6	25.9	100	2.5	33.4	64.1	100

Table 2.3. **Sources of the adult foreign-born population, 2000**
(continued)

Country	Source world region, %					Source level of development, %			
	Europe	North America	Latin America & Carib.	Asia & Oceania	Total	Least	Less	More	Total
Mexico	22.2	39.4	33.2	5.3	100	0.2	37.2	62.5	100
Germany	59.4	1.8	1.3	37.5	100	1.9	38.5	59.7	100
Australia	59.1	1.8	1.9	37.1	100	4.2	36.8	59.0	100
Norway	55.4	6.8	4.3	33.5	100	5.0	37.4	57.7	100
Canada	47.9	4.5	11.0	36.7	100	4.3	45.5	50.2	100
France	77.2	1.3	2.5	19.0	100	7.6	43.5	48.9	100
New Zealand	46.9	3.1	0.6	49.4	100	11.2	39.9	48.9	100
Denmark	50.1	2.5	2.1	45.3	100	6.3	45.6	48.1	100
Italy	61.7	2.7	13.1	22.5	100	5.6	47.1	47.3	100
Spain	47.4	1.5	42.2	8.8	100	3.3	58.5	38.2	100
United Kingdom	36.4	5.1	9.1	49.4	100	10.2	54.8	35.0	100
Netherlands	36.4	1.9	20.2	41.6	100	5.3	63.1	31.6	100
Korea	2.4	10.7	0.0	86.9	100	5.1	71.9	23.0	100
United States	18.0	3.0	50.1	28.8	100	4.3	74.0	21.7	100
Portugal	67.4	0.8	18.3	13.5	100	81.7	6.2	12.1	100
Japan	2.4	3.5	16.0	78.1	100	1.7	92.4	5.9	100
Average	62.8	4.4	8.2	24.6	--	6.0	32.5	61.5	--
33rd percentile	53.1	1.5	1.1	11.3	--	1.3	19.0	48.9	--
66th percentile	77.6	3.2	4.4	29.5	--	5.0	40.4	75.2	--

Source: Authors' tabulations, see International migration by educational attainment (1990-2000) – Release 1.1, Frédéric Docquier and Abdeslam Marfouk, http://www.ires.ucl.ac.be/CSSSP/home_papers/docquier/oxlight.htm

Note: Based on estimated population of adults ages 25 and over.

upon which a host exerts its pull. Some OECD countries are already first-in-queue for selected source countries and, thus, may exert a powerful pull on those nations compared with nations that have not yet established binational linkages.

Immigration pull factors

The literature on immigration "pull factors" is somewhat divided between academic theorists, policy analysts and demographers. Academics posit competing theories that variously identify economic opportunity (primarily wages) as the primary pull factor driving migration or embed economics in familial, social and political factors that condition migration flows. More strictly on the pull side, policy analysts use economic and especially demographic forecasts to posit conditions that will generate a future need for migrants. Demographers tend to dominate the actual business of population projections, but their projections of immigration mostly depend on refinements in assumed trends and rates of in-migration.

Theories and research on migration

Theories that derive from neoclassical economics tend to expect wage-pull to be the major determinant of migration. Empirical research tends to reinforce that expectation finding that economic pull factors are the dominant driver and that push factors play no substantive role in migration (Mayda, 2005). Wage-pull is the most important variable in migration models for OECD countries, albeit there are notable differences in the attractive power of the traditional countries of immigration as compared with most European nations (Peri, 2005). While pull factors were critical in historical migrations, the role of economic pull factors may not operate when policies effectively restrict immigration (Hatton and Williamson, 2003).

However, as summarized in Box 2.1, some argue that economic differentials are only part of the story and less-pecuniary drivers of migration may persist into the future. The most prominent economic theories concern neoclassical models, the new economics of migration, world systems theory and dual labour market theory. A premise of the non-classical theories is that it is necessary to draw a distinction between the initial causes for migration between two countries and the reasons that preexisting patterns of migration continue once established. Theories focused on the perpetuation of existing migration patterns indentify the strength of social networks, cumulative causation, institutions and migration systems.

Theories differ in their level of analysis, assumptions, relative emphasis on push and pull factors and the use of quantitative or qualitative analysis. Some focus more on isolated individuals as wealth maximizers, others take into account the family or community setting of migration decisions; or the even cultural significance of such moves. However useful these theories are for specifying statistical models or providing frameworks for in depth research, there is not yet a consensus among social scientists as to which

theory (or theories) performs best. Albeit, empirical research tends to reinforce the expectation that economic opportunity in the receiving countries is the fundamental driver of year-to-year fluctuations in international mobility.

Box 2.1. **Theories of migration**

Neoclassical economic theories of migration posit that "differences in net economic advantages, chiefly advantages in wages, are the main causes of migration" (Hicks 1932: 76). At the same time, capital flows in the reverse direction into the capital-poor country until equilibrium is reached and migration attenuates.

Dual labor market theories emphasize the causal significance of pull factors within recipient societies rather than push factors within the source countries. Modern economies have a chronic demand for immigrants in low-status jobs which continue to be attractive to growing numbers of immigrants without effecting an equalization of wages.

The new economics of migration theory rejects individualism and the emphasis on wage differentials. The decision for members of a family to migrate makes sense even when the wage differential is not significant because remittances can provide a useful form of financial diversification in the face of risk. The focus here is on source countries and push factors.

World systems theory suggests that migration is rooted in the historical structure of the global market and colonial relationships are maintained through cultural and economic ties. Foreign investment in developing economies is managed from a small handful of "global cities" that require immigrant labor to fill low-wage jobs. Once established, the "lead" and "periphery" economic relationship symbiotically maintains migration.

Social networks reduce the costs and risks associated with immigration. Network theories, like world systems theory and theory of dual labor markets, suggest a path dependency to migration patterns. Once a migration flow has begun, it gains a life of its own and may not be easily stopped by policy or even economic changes.

Theories of migration policy find that policy matters, but there is relatively little nuance as to which sets of policies are more successful in say increasing the total number of immigrants or shifting the composition toward skilled, long-term immigrants. Much of this literature focuses on how policy is formulated and not it's content or impact.

Economies of Scale theories attempt to explain how and why certain cities and locations become hubs for creative innovation, high skilled immigrants, and investment. Governments wishing to attract high skilled immigrants can consciously promote nascent economic clusters and attract the creative class of workers both from within their own country and abroad.

Future challenges of aging and globalization

Most policy analysts readily accept that the factors that drove historic European migration are likely to continue to be major drivers today: gaps in living standards, financial constraints on realizing mobility, as well as demographic dynamics. If anything, the cost-benefit analysis for mobility and the demographic differentials that fuel migration are greater today than in the past (Williamson, 2003). But analysts rarely model the two future scenarios they believe will drive future mobility, *i.e.* demographic aging of the most developed nations and increasing global competition in the knowledge economy. Few, however, question whether or not these pull factors will be important, particularly as they impact specific classes of workers.

We will discuss demographic projections below, suffice it to say here that most policy analysts are focused on population aging and not the population-gap between the more and less developed nations. Nevertheless, rapid population growth in the European periphery was a key factor in driving migration in the past and differentials in population growth are poised to play a similar role in today's world.[4] But if population push was the historic dynamic, today's aging is a powerful pull factor generated by slowing population growth and changes in the age pyramid. On the one hand, there will be a latent demand to replace the relative loss of young workers in the labour force to refuel retirement funds, as well as to generate productivity growth. On the other hand, the growing number of aging persons will generate latent demand for caregivers and a host of other aging services.

These demographic dynamics will combine with the globalization of the knowledge economy to create a heightened international competition for knowledge workers. The competition is fueled by the growing dependence of technology fueled economies on innovation to boost productivity. Migrants from emerging economies already supply many workers to meet that demand in most Anglophone nations, while many European nations seek to augment their human capital from the same sources. Demand in some nations will grow because the endogenous supply of these workers, in principle, may slow as the number of young native-born persons decline in coming years – the pull here is for skilled workers. In the second instance, fewer natives are expected to take on the low-paying and difficult jobs in many sectors including healthcare while demand for services escalates – much of the pull here is for low skilled workers.

Demographic projections

Most of the long-term projections of migration rarely incorporate a range of predictive variables, they are not based on statistical models but rather are demographic models incorporating assumed rates of change. It is not so much

that the academic theories of migration are thought to be irrelevant, but the necessary statistical models would require the projection of multiple variables and not just migration itself. Thus, most statistical modeling of future migration is constrained to the short term, perhaps no more than 2 to 5 years.[5] Even so, projections can be markedly off given unforeseen calamities such as 9/11 or, in contrast, stronger than assumed rebounds in economic conditions (Krepps, *et al*., 2005; Department of Homeland Security, 2007).

From a practical viewpoint Passel and Cohn conclude, based upon their review of the literature and while undertaking population projections for the United States, that:

> Immigration has been the most difficult demographic component to forecast in the last several decades. It is directly affected by national policies and other events in ways that fertility and mortality are not. Although many of the social and economic factors affecting migration trends are reasonably well known, no broadly accepted theoretical framework can be readily applied in a projections framework (Passel and D'Vera Cohn, 2008).

Like most demographic projections, migration is predicted extrapolated largely from historical trends. The rate of in-migration is on the "pull side" of the ledger as the rate's denominator is that of the receiving nation population and incorporates, thereby, the sociodemographic forces of inertia inherent in the host nation. The future trend or pattern of in-migration must be based on judgment best based on assumptions about future drivers. One comprehensive review of the empirical literature concludes that future trends should be grounded and modeled, with agreed-upon factors incorporated into projections based on several drivers. Perhaps unsurprisingly, demographic drivers are first on the list with economic, non-policy and then policy factors ranking as second order drivers and among the least reliable (Howe and Jackson, 2006; Cohen, *et al*., 2008).

Pull factors through 2030

Even if experts disagree on what drives migration, especially the dynamics of mutually reinforcing drivers, they tend to agree that there are a general set of factors that will shape tomorrow's most important pulls on migration. The leading factors in the more developed OECD countries will be the fundamental importance of economic opportunity in interaction with demographic dynamics; aging and slow population growth clearly being tomorrow's challenges. Altogether we explore seven factors below, *e.g.* economic factors, demographic factors, network effects, labour market factors, education and training, health and long-term care and integration.

Economic factors

International changes in economic growth and productivity will play a significant role in driving immigration in coming decades. Classical theories of migration argue that an individual's decision to migrate is primarily to maximize their earnings, to have better living standards, or more stable sources of income. Projections of the relative economic strength of OECD countries in coming years are an important lead indicator of migration-pull and future mobility patterns. Like others, we use per capita GDP to proxy for wages and economic opportunity.

Trends in economic growth

We consider projections made for the United Nations Economic Commission for Europe and the scenario whereby there will increasing convergence in economic opportunity between countries by 2030. Declines in the rate of economic growth are projected to occur in countries confronted by the greatest demographic challenges and which fail to make technological progress and to develop human capital. Countries projected to fare the best will be those that undertake aggressive policy measures, in particular increasing investment in R&D and education. Of course, one should take seriously the injunction that over such a period there may be "deep and unpredictable changes may take place in the direction of the technological progress, political situation and social stability of nations, international flows of production factors and institutional development" (NOBE Independent Centre for Economic Studies, 2002; United Nations Economic Commission for Europe, n.d.).

The UN projects continued economic growth for OECD countries for the period 2000-2040, but with falling GDP growth rates for some over time. We consider the "base case" projections which assume a continued improvement in the policies that accelerate "knowledge-based growth" and more "favorable demographic trends" (the medium UN demographic variant). It represents business as usual variant as compared with a set of low projections (based on the weakest technology, human capital and demographic outcomes); or a high variant (aggressive policies to improve education and R&D and best-case demographic trends). We opt not to include economic growth rates in our final migration-pull scenarios; rather we will use the per capita GDP projections to proxy for migration pull (see Table 2.5 below, to be used in the scenario section toward the end of the paper).

In Table 2.4 we sort countries by their rate of per capita GDP growth in order to better see the anticipated trends behind a projected convergence in economic attraction. The table shows projections for the average yearly growth of capital, labour, total factor productivity (TFP), GDP, population and per capita GDP. Tomorrow's top growth countries contain seven of

Table 2.4. **Projected average yearly economic growth, 2000-2040**

Country	Average Yearly Growth 2000-2040 (UN Base Projection)					
	Capital	Labor	Total Factor Productivity	Population	GDP	per capita GDP
Turkey	--	--	--	0.9	5.2	4.2
Poland	--	--	--	-0.1	3.7	3.8
Slovakia	--	--	--	-0.1	3.2	3.3
Hungary	--	--	--	-0.5	2.6	3.2
Czech Republic	--	--	--	-0.4	2.4	2.9
Mexico[1]	--	--	--	0.1	2.7	2.7
New Zealand[1]	--	--	--	-1.0	1.5	2.7
Portugal	2.6	-0.1	1.4	-0.3	2.4	2.7
Greece	2.4	-0.1	1.1	-0.4	2.0	2.4
Finland	1.9	0.3	1.4	-0.1	2.3	2.3
Spain	2.5	0.0	0.9	-0.4	1.9	2.3
Austria	2.6	0.0	1.0	-0.2	2.0	2.2
Ireland	2.5	0.8	1.1	0.5	2.6	2.1
Italy	1.8	-0.2	0.9	-0.6	1.5	2.1
Japan	2.8	0.0	0.7	-0.2	1.9	2.1
United Kingdom	1.7	0.2	1.2	0.0	2.0	2.1
Australia	2.5	1.0	1.1	0.7	2.7	2.0
Denmark	2.0	0.1	1.0	-0.1	1.8	2.0
France	1.9	0.4	1.0	0.1	2.0	2.0
Iceland	2.0	0.7	1.3	0.5	2.5	2.0
Korea[1]	..	..	..	0.3	2.2	2.0
Netherlands	2.3	0.1	0.9	-0.1	1.9	2.0
Sweden	1.5	0.2	1.3	0.0	2.0	2.0
Belgium	2.1	0.1	0.7	-0.2	1.6	1.8
Germany	2.1	0.1	0.7	-0.2	1.7	1.8
Switzerland	2.0	0.1	0.8	-0.1	1.6	1.7
Canada	2.0	1.0	0.9	0.7	2.2	1.6
Norway	0.9	0.4	1.2	0.2	1.8	1.6
United States	1.9	0.7	0.8	0.5	2.0	1.5
Luxembourg	1.9	0.3	0.4	0.1	1.3	1.2

Table 2.4. **Projected average yearly economic growth, 2000-2040**
(continued)

Country	Average Yearly Growth 2000-2040 (UN Base Projection)					
	Capital	Labor	Total Factor Productivity	Population	GDP	per capita GDP
Average	2.1	0.3	1.0	0.0	2.2	2.3
33rd percentile	1.9	0.1	0.9	-0.2	1.9	2.0
66th percentile	2.3	0.3	1.1	0.1	2.3	2.3

Source: NOBE Independent Centre for Economic Studies, 2002. http://www.fao.org/documents/pub_dett.asp?lang=en&pub_id=189492

1. Per capita GDP values based on WHO values for New Zealand, Korea and Mexico.

today's ten lowest per capita GDP countries, but practically in inverse order. Of today's ten highest per capita GDP countries only two, Ireland and Iceland, are in the highest growth group in this projection. Otherwise, the highest average annual GDP growth is projected for Turkey, Poland, Slovakia and Mexico that have low-to-moderate per capita GDP today. The high growth group also includes lower income Hungary, the Czech Republic and Portugal.

Meanwhile, a full five of the top ten countries today are projected to be in the lowest growth group through 2040 (Luxembourg, Switzerland, Belgium, Norway and Denmark). Four of today's largest Western European economies (Germany, France, the United Kingdom and Italy) have growth rates below the median for the OECD; and two (Germany and Italy) are projected to have among the six lowest GDP growth rate averages in the OECD. On the other extreme, the lowest growth rate countries include Luxembourg, Italy, New Zealand and Switzerland. Among the lowest growth are also found Germany, Norway, Denmark, Netherlands and Japan. The UN projections do not look comparatively favorable for the richest countries, even if we consider per capita GDP growth. Luxembourg, Norway, Switzerland, Germany, Belgium and Netherlands have among the lowest ranked per capita GDP growth rates. The United States has the second lowest growth rate in per capita income and Canada has the fourth lowest. Turkey, the Central and Eastern European OECD members and Mexico show the most significant growth rates. They are joined by the poorer Southern European countries, Portugal, Greece and Spain. Thus, these projections suggest a pattern of economic convergence across OECD countries in coming decades. The wealthiest countries show

the least growth in GDP and per capita GDP while the poorest and least developed nations make strides in overall and per capita GDP growth.

Projected relative per capita GDP

The divergence in growth rates leads to a convergence in per capita GDP over the coming decades. Table 2.5 shows a comparison of today's per capita GDP and that projected for 2040 – in 2000, the lowest per capita GDP was only 15% of the highest; by 2040 this projection suggests that the lowest will be approximately 49% of the highest. In terms of migration-pull, we are particularly interested in per capita GDP in relative terms because theory and research tells us that migration flows are strongly associated with differentials in per capita income. The table further ranks countries by the ratio of their GDP per capita against a benchmark of the lowest quintile per capita GDP, as well as against the average per capita income of the three largest countries of out migration Mexico, Poland and Turkey.

We will return below to the ranking relative to these three countries of out migration, but first note that the OECD countries are also effectively sorted by today and tomorrow's per capita GDP which demonstrates some striking shifts between countries. Among today's least developed countries, changes are for the most part small rearrangements between countries, *e.g.* Spain and Portugal switch order; and Hungary passes Mexico. More significantly, Greece is surpassed by the four post-communist Central European OECD member states and by Mexico, leaving it with the second lowest per capita GDP just ahead of Turkey.

Perhaps, the most striking rearrangements occur within and between the wealthier countries. Several of the major OECD member economies either switch position with each other or with numerous smaller states. The United States' per capita GDP is surpassed by that of Iceland, Ireland and Austria; leaving it the fifth highest ranked. The largest European economic powers also shift order. In 2000, Germany had the highest per capita GDP in Europe, followed by France, Italy and the United Kingdom. In 2040, this projection shows Italy leading, followed by France, the UK and Germany.

There are also some notable shifts by smaller but wealthy countries which are influenced by either demographic shifts or declining productivity, *e.g.* Norway drops from third to eleventh in the ordering, Switzerland from fifth to twelfth; and Canada moves from seventh to twentieth and is passed by Korea. Finland, on the other hand, moves from fifteenth to sixth; Austria from tenth to fourth; Ireland from sixth to third; and Iceland gains the second highest per capita GDP behind Luxembourg. The OECD's populous Asian members, meanwhile, gain relative to the major Western states. Japan's per

Table 2.5. **Differences in per capita GDP, 2000 and 2040**

Country	2000 GDP $USD billions	2000 GDP per capita	2000 Ratio 20th per-centile	2000 Ratio MX, PL, TK	Country	2040 GDP $USD billions	2040 GDP per capita	2040 Ratio 20th per-centile	2040 Ratio MX, PL, TK
Luxembourg	19	43 600	64.4	78.9	Luxembourg	31	70 100	39.5	45.8
United States	9 267	33 300	53.3	72.4	Iceland	21	63 500	33.3	40.2
Norway	129	29 000	46.4	68.3	Ireland	289	62 200	31.9	39.0
Iceland	8	28 400	45.3	67.6	Austria	463	61 600	31.2	38.4
Switzerland	200	28 000	44.5	67.2	United States	20 660	60 300	29.7	37.0
Ireland	103	27 500	43.5	66.6	Finland	302	60 000	29.4	36.7
Canada	829	27 200	42.9	66.2	Denmark	293	58 400	27.4	35.0
Denmark	141	26 400	41.1	65.2	Japan	6 641	56 900	25.5	33.3
Belgium	269	26 300	40.9	65.1	Australia	1 404	56 200	24.6	32.4
Austria	209	25 800	39.8	64.4	Netherlands	840	56 000	24.3	32.2
Australia	482	25 400	38.8	63.8	Norway	268	55 700	23.9	31.8
Japan	3 183	25 100	38.1	63.4	Switzerland	384	55 300	23.4	31.3
Netherlands	394	24 900	37.6	63.1	Belgium	509	53 900	21.4	29.6
Germany	1 968	24 000	35.3	61.7	New Zealand *	143	52 977	20.0	28.3
Finland	123	23 800	34.7	61.4	Sweden	462	52 600	19.4	27.8
New Zealand[1]	98	23 721	34.5	61.3	Italy	2 369	51 600	17.9	26.4
France	1 382	23 600	34.2	61.1	France	3 111	51 400	17.5	26.1
Sweden	208	23 400	33.6	60.7	United Kingdom	3 012	51 100	17.1	25.7
Italy	1 310	22 700	31.5	59.5	Korea *	26 073	50 575	16.2	24.9
United Kingdom	1 347	22 600	31.2	59.3	Canada	2 009	50 300	15.7	24.5

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Table 2.5. **Differences in per capita GDP, 2000 and 2040**
(continued)

Country	2000 GDP $USD billions	2000 GDP per capita	2000 Ratio 20th per-centile	2000 Ratio MX, PL, TK	Country	2040 GDP $USD billions	2040 GDP per capita	2040 Ratio 20th per-centile	2040 Ratio MX, PL, TK
Korea[1]	10 274	21 383	27.3	57.0	Germany	3 802	49 800	14.9	23.8
Spain	737	18 700	16.9	50.9	Portugal	421	47 800	11.3	20.6
Portugal	166	16 600	6.4	44.6	Spain	1 549	46 900	9.6	19.0
Greece	169	16 000	2.9	42.6	Czech Republic	366	42 700	0.7	11.1
Czech Republic	140	13 700	-13.4	32.9	Hungary	331	41 100	-3.1	7.6
Mexico[1]	1 271	12 065	-28.8	23.8	Mexico *	4 154	40 999	-3.4	7.4
Hungary	119	11 800	-31.7	22.1	Slovak Republic	208	40 700	-4.1	6.7
Slovak Republic	60	11 000	-41.3	16.5	Poland	1 467	38 900	-8.9	2.4
Poland	344	8 900	-74.6	-3.2	Greece	293	34 500	-22.8	-10.0
Turkey	441	6 600	-135.5	-39.2	Turkey	3 297	34 000	-24.6	-11.7
Avg. (MX, PL, TK)	685	9 188	-79.6	-6.2	Avg. MX PL TK	2 973	37 966	-12.3	-0.6
Average	1 180	22 382	18.0	51.5	Avg. (unweighted)	2 839	51 602	15.3	24.1
20th percentile	122	15 540	-0.4	40.6	20th percentile	292	42 380	-0.02	10.4
33rd percentile	155	22 077	29.6	58.3	33rd percentile	351	50 085	15.4	24.2
66th percentile	518	25 456	39.0	63.9	66th percentile	1 613	55 742	24.0	31.9

Source: NOBE Independent Centre for Economic Studies, 2002. http://www.fao.org/documents/pub_dett.asp?lang=en&pub_id=189492

1. Per capita GDP values based on WHO values for New Zealand, Korea and Mexico.

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capita GDP moves to become the eighth highest, while the per capita GDP of Korea moves past that of Canada and close behind that of the UK and France.

These trends towards economic convergence and change in relative position could have significant implications for each nation's migration pull. As this occurs, it will greatly reduce the wage differential incentives driving migration flows between poorer and richer states. This could have particularly significant effects on the existing flows of immigrants from Turkey into Germany, from Mexico into the United States and from Central European into Western Europe. While economic differences will persist for some time, at some point reduced wage differentials may be insufficient to prompt relocations. The relative decline of several major European economies, due to a combination of demographic shift and poor labour utilization, could reduce their attraction to migrants from inside or outside the OECD. But the economic gains projected for the OECD's East Asian members suggest pull factors favorable for migration to Japan and Korea.

Finally because migration is motivated by improvements in income, each country's per capita GDP is ranked relative to lower-income countries, *e.g.* the lowest quintile for these countries and the average for the three largest countries of out migration. Of course, sorting against either benchmark leaves the ranking unchanged, although the measured gap in income varies markedly depending on which benchmark one chooses. Of greatest interest is, perhaps, the ratio of per capita GDP to the largest nations of out migration Mexico, Poland and Turkey. These three countries also represent relatively well the per capita gap income that exists today between emigration from many developing countries and that likely to exist tomorrow. But what do we know about the responsiveness of immigration to the income gap? Some early observers noted that migration from Spain northward was minimal following its inclusion in the Shengan zone of free movement in 1992 (Martin, *et al*., 2006), leading to the conclusion that a reduction in wage gaps could attenuate incentives to migrate.[6]

Researchers estimate that migration begins to attenuate when wage differentials are no greater than 30% to 40% (Mansoor and Bryce Quillin, 2007). Considering the gap from the average of Mexico-Polish-Turkish per capita GDP and assuming a threshold of 30%, all but five countries had income gaps of greater than 30% in 2000. Indeed, the average income gap in 2000 was 52% which suggests quite considerable migration pull in almost all OECD countries, while fully twenty countries had gaps of 60% or greater. But by 2040 these projections show an average income gap that has decreased to 24% and only 13 countries have wage differentials of about 30% or greater than the simple average of Mexico-Poland-Turkey. Just 12 countries retain income gap of 30% or greater by these projections. Several of today's leading countries of immigration remain in the first triptile, *e.g.* Luxembourg, the

USA and Australia, while there is otherwise a substantial reordering of countries in terms of the income gap. On the one hand, this suggests that the migration pull of many OECD countries will be diminishing in the future. On the other hand, even if the economic pull is declining it will remain substantial and, if costs of travel are lower and differentials in living costs also converge, the logic of mobility may still remain strong. The degree to which that is so may, in part, depend on other pull factors that will generate demand for foreign labour in OECD host countries.

Demographic factors

Recent studies verify that the world population has entered an unprecedented period of aging. Depending on the starting conditions, this trend has varying effects on the demographic and economic outlook for nations. As the median age of a population shifts upward, this drives a proportional decrease in the size of the working-age adult population relative to children and elderly persons, *i.e.* there is an increase in the ratio of the dependent-age population to the working-age population. In general, those states at the beginning of the population aging process will benefit in coming decades from a proportionate and absolute increase in the working-age population. Nations already further along in the demographic shift face a proportionate increase in the elderly proportion of their populations and a relative decline in the working-age population.

Growth and decline of the total and working-age populations

Table 2.6 ranks orders OECD countries by the percentage change in the size of the working-age population from 2005 to 2030 (measured as the population 15 to 59 years of age). This provides a sense, in absolute terms, of the impact that demographic trends are likely to have on the size of each country's workforce if all other factors stay equal. The table also shows projected change in the size of the total population. While only seven countries show a decline in total population, a full sixteen or more than half of the OECD members are predicted to experience a decline in their working-age population. The seven countries with overall population decline are also among those worst hit by decline in their working-age populations (in order Hungary, Poland, Japan, Czech Republic, Germany, Slovakia and Italy). Any discrepancies between projected change of the total and working-age populations can be attributed largely to varied trends in life expectancy and, to a lesser degree, to differences in fertility.

Regional differences in the change of the total population are pronounced, particularly so in the Central European and East Asian OECD member states. The UN regional data shows that Europe is the only world region expected to show an overall decline (-3%) in population. A closer look reveals that this

decline is driven mostly by Central Europe where the total population (including nonmember states) is expected to decline by an extraordinary -15.3% between 2005 and 2030. Yet, total population growth in other parts of Europe, while positive, is not particularly robust. Central Europe's precipitous population decline is followed by a very low population growth of 4.3% in Western Europe, 4.5% in Southern Europe and a still quite moderate 11.3% in Northern Europe.

Similarly, there are marked differences in projected changes in the working-age population. In Central Europe it is predicted to take a dramatic plunge of -19.1%, followed by Western Europe with -10.1% loss and Southern Europe with a -7.9% loss. Only Northern Europe will show a minor increase in its working-age population of 1.3%. Germany and, to a lesser extent, Italy, Finland and the Netherlands stand out among West European states for their rapid declines in working-age population. These countries are hit hard by the demographic shift and aging of the population. Since their relatively low birth

Table 2.6. **Projected total and working-age population**

Country	Total Population			Population 15-59		
	2000	2030	Percent change	2000	2030	Percent change
Japan	127 034	118 252	-6.9	78 884	60 842	-22.9
Germany	82 309	79 348	-3.6	50 329	40 670	-19.2
Poland	38 433	35 353	-8.0	24 608	20 732	-15.8
Hungary	10 214	9 259	-9.4	6 460	5 458	-15.5
Czech Republic	10 220	9 728	-4.8	6 666	5 643	-15.3
Italy	57 692	57 519	-0.3	35 479	30 265	-14.7
Korea	46 780	48 411	3.5	31 680	27 568	-13.0
Finland	5 176	5 469	5.7	3 206	2 874	-10.4
Slovakia	5 388	5 217	-3.2	3 507	3 144	-10.3
Netherlands	15 924	17 141	7.6	10 066	9 057	-10.0
Austria	8 111	8 643	6.6	5 084	4 620	-9.1
Greece	10 975	11 179	1.9	6 827	6 208	-9.1
Denmark	5 335	5 602	5.0	3 295	3 016	-8.5
Portugal	10 227	10 607	3.7	6 373	5 932	-6.9
Belgium	10 193	10 780	5.8	6 167	5 774	-6.4
Switzerland	7 263	8 104	11.6	4 573	4 360	-4.6
France	59 187	66 605	12.5	35 828	36 145	0.9
Spain	40 229	46 682	16.0	25 619	25 872	1.0

Table 2.6. **Projected total and working-age population**
(continued)

Country	Total Population			Population 15-59		
	2000	2030	Percent change	2000	2030	Percent change
United Kingdom	58 868	66 162	12.4	35 480	36 338	2.4
Sweden	8 868	10 012	12.9	5 268	5 397	2.5
Norway	4 489	5 366	19.5	2 726	2 960	8.6
Canada	30 689	39 105	27.4	19 705	21 622	9.7
Iceland	281	344	22.4	173	194	11.7
New Zealand	3 854	4 895	27.0	2 373	2 735	15.2
Australia	19 139	25 287	32.1	12 016	14 061	17.0
United States	284 857	366 187	28.6	177 415	208 711	17.6
Luxembourg	437	601	37.6	272	350	28.8
Mexico	99 735	128 125	28.5	59 297	79 853	34.7
Ireland	3 804	5 475	43.9	2 405	3 311	37.7
Turkey	68 158	92 468	35.7	42 127	58 902	39.8
Average	37 795.6	43 264.2	12.4	23 463.6	24 420.5	1.2
33rd percentile	8 542.5	8 994.2	4.5	5 189.0	5 063.2	-9.5
66th percentile	38 684.4	40 165.8	16.5	24 749.7	22 217.2	3.3

Source: UN Data on Population Projections by Age group (Medium Variant Projection); http://data.un.org/Data.aspx?d=PopDiv&f=variableID%3a87

rates are paired with relatively high life expectancies, only Germany and Italy show small declines in total population during this time.

The OECD's East Asian member states show, by far, the greatest expected decline in the size of their working-age populations. Japan will have the single greatest percentage (and net) decline in working-age population, with a loss of -22.9%. Japan will also experience significant overall population decline (-6.9%) during this period. Korea is projected to lose -14.7% of its working-age population while experiencing a very small total population growth of 3.5%. These numbers are striking when compared to other East Asian countries where the UN projects a growth of 1.3% in the working-age population and 12.6% in total population.

Anglophone OECD countries – especially those that are traditional immigration recipient countries – fare somewhat better in population projections. Ireland, the United States, Australia, New Zealand, Canada and

the United Kingdom are all among the states whose working-age populations will continue to grow and the projected supply of new immigrants is a major reason that these countries are expected to experience such growth. Scandinavian countries are also better off than most of their fellow European countries, with Iceland, Norway and Sweden also showing growth in their working-age populations.

Table 2.7. **Population dependency ratios (population age 15-64 relative to children and the elderly)**

Country	Dependency Ratio		Percentage point change
	2005	2030	
Finland	50	71	21
Japan	51	71	20
Netherlands	48	67	19
Canada	44	63	19
Germany	50	68	18
Switzerland	47	65	18
Austria	47	63	16
Australia	48	63	15
Korea	39	54	15
Belgium	52	66	14
Denmark	51	65	14
Italy	51	65	14
Spain	45	59	14
Czech Republic	41	55	14
Sweden	53	66	13
Poland	42	55	13
France	53	65	12
United Kingdom	52	63	11
New Zealand	51	62	11
United States	49	60	11
Portugal	48	59	11
Norway	52	62	10
Iceland	51	61	10
Greece	48	58	10
Slovakia	40	50	10

Table 2.7. **Population dependency ratios (population 15-64 relative to children and the elderly)** *(continued)*

Country	Dependency Ratio		Percentage point change
	2005	2030	
Hungary	45	53	8
Luxembourg	49	55	6
Ireland	47	51	4
Turkey	51	45	-6
Mexico	58	48	-10
Average	48	60	12
33rd percentile	48	59	11
66th percentile	51	63	14

Source: UN Data on Dependency Ratio Projections (Medium Variant Projection), World Population Prospects: The 2006 Revision and World Urbanization Prospects, http://esa.un.org/unpp.

Still, the most pronounced growth of the working-age population is predicted in four countries: Turkey, Ireland, Mexico and Luxembourg. Two are among the smallest, wealthiest nations on a per capita basis in the OECD, while two are among the most populous, poorest and least developed OECD member states.

Increasing population dependency ratios

In Table 2.7, countries are ordered by their projected dependency ratios in 2030; defined as the ratio of the dependent populations aged 0-14 and over 64 relative to the working-age population 15 to 64. In countries with a high dependency ratio, the working-age population has more dependents per capita to support and take care of. The effect of increasing dependency ratios may be counteracted to some degree by stable or growing working-age populations. Nations projected to have both increasing dependency ratios *and* declining working-age populations face the greatest future challenges.

The countries with the highest dependency ratios tend to be those with both declining working-age populations and long life expectancies. This includes many of the East Asian and Western European OECD members noted previously for their declining working-age populations namely Finland, Japan, Germany, Netherlands, Belgium, Italy, Denmark and Switzerland. But

some countries have quite high dependency ratios in spite of some growth in the working-age population including Sweden and France. In these cases, a high life expectancy accounts for a higher dependency ratio, as a larger proportion of the population beyond working-age lives on for many years. As should be expected, the Anglophone and Scandinavian countries, which we saw previously are expected to maintain high or moderate growth in their working-age populations, are projected to have somewhat moderate dependency ratios. At the same time, some countries with the lowest dependency ratios have the most significant growth of their working-age population. Turkey and Mexico have the lowest projected dependency ratios, while Ireland and Luxembourg have the fourth and eight lowest ratios in the OECD respectively.

However, many of the countries with the lowest dependency ratios are also among those with declining working-age populations. This includes countries in Central Europe particularly Slovakia, Hungary, Poland and the Czech Republic which have among the lowest projected dependency ratios in the OECD, in spite of each also having among the most extreme declines in working-age population. The low ratios in these cases are explained by high mortality rates of the elderly population. The same pattern is seen in the projections for South Korea which has a low projected dependency ratio in spite of a steep decline in its working-age population. In 2000, all five of these countries had among the lowest life expectancies in the OECD and are projected to continue to have life expectancies below the OECD average.

The fourth column of Table 2.7 shows the change in dependency ratio (percentage point difference) expected to occur between 2005 and 2030 for each country. This provides a sense of how rapidly the demographic balance in a particular country is changing and thus might indicate which countries will have the hardest adjustment problems dealing with increasing dependency. Finland, Japan, Netherlands, Canada, Germany and Switzerland all appear to face particularly dramatic increases in their demographic age composition over the next twenty to twenty-five years with corresponding pressures on their economic situations. Simultaneously, the declines in dependency ratios in Mexico and Turkey corresponding with strong growth in their working-age populations opens up a window of demographic opportunity for boosting economic growth.

The future of replacement migration

The vulnerability of different OECD countries to the demographic crisis caused by population aging also depends on how well the country copes with the shift in age. One way to think about this focuses on the financial challenges of caring for growing elderly populations. For example, the Global Aging Initiative constructs an "aging vulnerability index" to assess

the prospects of nations in dealing with their aging populations.[7] The index covers 12 OECD countries and incorporates four factors: the public spending burden caused by entitlement programs for the elderly, the fiscal room for change in these programs in state budgets, the relative dependency of the elderly upon state programs and the relative affluence of the elderly portion of the population. While very useful for gauging the looming financial challenge, the vulnerabilities index does not address the concomitant ability for immigration to offset the financial problems created by the growing demographic imbalance. The degree to which aging generates demand for immigrants also depends on the number of immigrants required to offset increasing dependency ratios.

Furthermore, differences in the stage of population aging will create shortages of labour in some of the most developed states while increasing the supply of labour in other less-developed states. The 2006 United Nations *World Population Prospects* report projected that the proportionate decline of working-age population would begin in Europe, North America and Oceania as soon as 2010, in Asia by 2015 and in Latin America and the Caribbean by 2025. As we have seen, in some regions the decline in working-age population will not only be proportional but absolute. The 2000 report by the United Nations Population Division projected that by 2020 the populations of the world's most developed regions would largely have begun to decline in absolute terms. The need for additional sources of labour in states with aging and declining populations could become a significant pull factor encouraging immigration from less developed states with more youthful populations.

Yet, most all research on the subject concludes that migration is not a viable solution to maintaining population growth, dependency ratios, or retirement systems. The UN report considered both the possibility of "replacement migration" to maintain overall population levels and to maintain the existing support or dependency ratio. It concluded that the magnitude of the immigration that would be required to maintain most populations would be extreme. For example, in order to offset population losses due to below replacement fertility the level of today's immigration would have to be 9 times higher for the United Kingdom, 44 times for Austria and 54 times higher for Japan (Nyce and Schieber, 2001). Most observers agree that the "substituting migration for low fertility requires politically insupportable levels of migration" (Keely, 2002).[8] The numbers required for full replacement would likely have enormously destabilizing effects on social cohesion. And as immigrants age they would, in turn, generate even greater demands on future retirement systems.

Thus, while population aging is likely to create a significant immigration "pull" in many OECD states, it is also clear that immigration is not a sufficient answer to the challenge. It will not be easy to determine how much immigration should increase to address demographic trends, because while

small increases will have minor favorable effects, truly significant increases would obviously generate their own problems. The most agreed-upon conclusion is that aging will generate a selective need for immigrants for the most affected parts of the labour market. These shortages might be general, caused by the decline in working-age populations, or they might be sector-specific. Low-skilled workers may be in demand much as they are today, as well as for the care and support of the elderly. Highly skilled workers may be in demand in sectors that drive economic productivity such as business or research and development.

Network effects

Social networks are the interpersonal linkages that tie migrants to family, kin, community and other social relationships that foster migration. Like theories of world systems and dual labour markets, network theory suggests a path dependency to migration patterns. In the beginning, immigrants who are already established in the new environment can help their relatives and friends make the trip, locate work and get settled. Eventually, social networks sustain migration once started, reducing the costs and risks associated with immigration. We discuss here possible differences in the effect of networks and apply this discussion to examine the possible influence of networks on future trends.

Strong and weak network effects

Scholars and researchers have proposed rival models for predicting the magnitude of the effects of preexisting migration flows on future migration trends. There is room to debate whether networks are in and of themselves a primary pull factor prompting immigration, or if they facilitate flows while other factors are more important – that is networks simply lower the associated costs and risks of migration and increase information transfer between the recipient and source countries. Some observers predict that networks will drive a continual growth in migration flows, while others suggest these flows eventually lead to their own attenuation.

Networks may be incidental to long run migration if, as a weak form of network theory suggests, other factors are more fundamental. By increasing the knowledge of and personal connections to the source country, networks in the recipient country reduce the upfront risk and cost associated with migration. However, migration can be expected to last only so long as the primary incentive that motivates migration remains strong. Emigration choices, according to this analysis, are generally seen as rational decisions by individuals based on their probable economic gain associated with migration

and networks effects would be expected to attenuate with declines in wage differentials.

On the other hand, a strong variant of the network theory suggests that networks can in fact perpetuate migrant flow independent of other pull factors. Advocates of this model claim that once a migration flow has begun it gains a life of its own and may not be easily stopped by policy or even economic changes and disincentives. At the least, networks reduce the cost of migration, but they also structure job markets and are reinforced by a culture of migratory expectations in source countries. Employers may become dependent upon hiring from within immigrant networks and certain industries may become "colonized" by particular immigrant groups. The reinforcing effects of sectorial demand and expectations in source countries could drive immigration in the absence of strong wage differentials

Perpetuating migration or cumulative causation

A seminal formulation of a strong form of network effects Massey and Zenteno make the case for a "cumulative causation" path dependency of migration (Massey and Zenteno, 1999). They argue that projections of emigration based on the assumption of consistent rates by age and sex grossly underestimate actual rates that result from social capital buildup. As individuals immigrate to the same destination, the link between source and destination communities is reinforced. As greater knowledge of and personal experience with, the destination country builds up within the source community, this leads to higher probabilities of immigration for individual community members and a gradual increase in the overall rates of mobility.

In modeling of Mexico-US migration patterns, Massey and Zenteno suggest that the actual rates of emigration from Mexican communities into the US can be expected to increase over time. Their simulations result in far greater growth in the overall Mexican immigration rate into the US over the next fifty years than is predicted by fixed migration-schedule projections based on constant migration probabilities. The authors argue that fixed rate projections such as those conducted by the US Census Bureau underestimate the number of Mexican immigrants in the US in 2050 by a remarkable 85%. Likewise, they suggest, fixed rate projections overestimate the size of the Mexican population at that time by 5%, because they fail to account for the extent to which Mexico will be reduced by high emigration rates. While these projections are based on network momentum alone and no other factors, they appear to be consistent with a general increasing level of Mexico-to-US migration since the 1960s.

Transitory effects and the migration hump

Conversely, a predominantly economic model incorporating the effects of trade on migration between source and recipient countries within a migration network leads to the expectation of attenuating network effects (Martin, 2006). While there is some controversy over the impacts of free trade agreements, most theories predict that they will eliminate the economic incentives for migration over the long run. But empirical research shows that there is often a significant lag time before such effects are observed. In spite of the elimination of tariffs, network effects continue to play a significant causal role for a period of some years as the market adjusts to trade liberalization. This results in a "migration hump" or a period of increased migration immediately following the establishment of free trade.

In the short term, integration creates additional unemployed labour supply within the source country with an incentive to migrate in order to find higher-paying work. Existing networks help facilitate this migration so long as such an incentive exists. The migration hump, Martin (2002:15) explains, is a product of "continued demand-pull in the destination country […], increased supply-push in the origin country as a result of economic integration and [the persistence of] migration networks that can move workers across borders." Thus, existing migration networks initially facilitate mobility as economic conditions improve, but ultimately improved opportunities in source countries reduce migration. For example, the earlier EU expansion that incorporated southern European countries (Spain, Italy, Portugal) in a broadened migration zone did not lead to increased migration because prior economic integration has lowered wage differentials and offset the migration incentive.[9]

The migration hump model suggests that even a moderate account of network effects on international migration – based primarily on wage differentials and the labour market, not only familial or personal reasons for immigration – could lead to the persistence of migration flows along established networks, even for some time under conditions of economic integration. Ultimately, network effects attenuate as economic conditions converge in the receiving and source nations. And wage differentials need not collapse; they need only attenuate so that they are not as great as in the period before trade liberalization. Of course, the general story here has more to do with convergence in economic opportunity whether or not it is generated by liberalization of trade relationships.

Future network pull

Network theories suggest that migration patterns and rates are rooted in the demographic dynamics of both recipient and source countries. In the receiving country, it is immigrants who "pull" potential migrants while, rather obviously,

the source country population provides those potential migrants. On the one hand, absent restrictions in the host country any increase (decrease) in immigrant numbers then should increase (decrease) the number of new arrivals. On the other hand, any increase (decrease) in the source population sets the stage for an expanded (reduced) network of potential migrants. So the impact of networks on migration may depend either upon the growth of the immigrant population in the receiving nation or the potential pool of migrants in the source country.[10]

Which population, that of the receiving or source country, should one consider in projecting the impact of networks on future mobility?[11] Even if network theory implies a pull-side effect of the immigrant population, the notion that networks create expectations (lower costs) for those considering moving suggests that it is the size of potential pool of emigrants that is critical to the number of potential migrants.[12] The strong form of network theory posits that expectations cumulate and actually increase the rate of out-migration – given rapidly diverging population trends between most source and receiving countries, an assumption of increasing emigration rates would translate into nonlinear growth of immigrant populations. The weak form of network theory places no explicit weight on the population growth of migrants in either receiving or host country. Albeit, it would be consistent to expect that networks effects independently drive migration up to a point. Network effects generate expectations among emigrants but one might assume those expectations to be constant over time and not to cumulate – so the rate of out-migration would be constant and future flows would be driven only by the growth in the source country population.

We assume that network effects generate their primary impact on the source country population while adopting the weak expectation that rates of emigration are constant (not accelerating). Projections are made of tomorrow's immigrant population in each receiving country by assuming today's rates of emigration as measured only for the ten largest source countries for each recipient nation. The actual projection is the sum of the product of today's rate of emigration for each leading country multiplied by the independently projected future population of each of those leading source countries.[13] Having made the assumption that it is correct to emphasize the source population in considering future network effects, we make the conservative assumptions that future networks will be dominated by existing binational linkages with constant rates of attraction (emigration) exerted by those networks.

We make this projection in order to rank order nations by the degree to which network effects might generate pressures for a greater or lesser number of future migrants and not as an independent projection of immigration. It is all too obvious that any increase in the number of migrants may be constrained by policies or labour demand. And we readily subscribe to the notion that a full modeling of network effects might best include both receiving and source country populations. But for what we are doing here it

is also obvious that there is no effective way to make mechanical projections of immigration in order to rank nations on the potential "pull" of networks – that would be tautological. For many OECD countries, facing declining population growth rates or declining populations, this fact is extremely relevant. A number of the less developed countries from which these states receive many of their immigrants have both larger populations and higher population growth rates. Projections based solely on domestic demographics might suggest declining migration, whereas it is possible that future migration will be bolstered by significant differences in population growth.

Table 2.8 rank orders OECD nations by our projections of immigrant populations, *i.e.* projections of the change in the immigrant percentage of the receiving population using constant rates of emigration multiplied by the projected populations of major source countries. The ranking itself is based on the column showing the percentage-point change which is the difference between today's immigrant percentage and that projected for 2030. For example, immigrants were 6.5% of the Portuguese population in 2000 and these projections suggest that unimpeded network forces could increase that percentage to 11.6%, or a difference of 5.1 percentage points. Portugal is the OECD country that is projected to have the highest latent network pressures, while Luxembourg is rated as having the least latent network pressure. The major reason for these dramatic differences in rankings is combination of today's rate of emigration, already high in a country like Luxembourg and the mixture of source countries. Thus, Portugal draws on many developing nations which will have robust population growth in the future, while Luxembourg draws many of its immigrants from other European nations with declining populations.

Table 2.8. **Projected foreign-born population assuming constant rates of emigration from major source countries, 2030**

Country	Foreign Born Population %	Percentage point change
Luxembourg	30.6	-5.8
Ireland	9.0	-2.0
Turkey	1.5	-0.9
Australia	26.8	-0.4
Slovak Republic	2.8	-0.1
Poland	2.3	-0.1
New Zealand	22.4	0.0
Mexico	0.3	0.0

Table 2.8. **Projected foreign-born population assuming constant rates of emigration from major source countries, 2030** *(continued)*

Country	Foreign Born Population %	Percentage point change
Hungary	3.4	0.1
Czech Republic	5.5	0.4
Japan	1.5	0.5
Finland	3.4	0.7
Spain	6.2	1.1
United States	14.4	1.2
Austria	15.0	1.2
Switzerland	25.1	1.3
Norway	9.6	1.4
Canada	23.3	1.5
Italy	5.5	1.5
Greece	13.0	2.2
Sweden	16.6	2.3
Netherlands	11.2	2.5
Denmark	10.0	2.7
Belgium	14.9	3.0
United Kingdom	12.4	3.1
France	14.9	3.3
Portugal	11.6	5.1
Germany	--	--
Iceland	--	--
Korea	--	--
Average	11.6	1.0
33rd percentile	5.9	0.3
66th percentile	14.5	1.5

Sources: Author's tabulations, UN data on population projections by age group (Medium Variant Projection), http://data.un.org/Data.aspx?d=PopDiv&f=variableID%3a87; OECD data on foreign born in OECD Countries in 2000, http://stats.oecd.org/wbos/Index.aspx?usercontext=sourceoecd.

The labour market

Current demographic trends have the potential to create a significant labour market demand for immigrant workers. As discussed previously, there will be declining working age populations in the world's most developed countries. How extensive shortages will be depends in no small part on how individual countries develop their labour forces. The size of the workforce is the product not only of the size of the working-age population, but also of the degree to which individuals choose to work. Labour force participation rates, particularly for women and the elderly, can substantively increase the number of workers. Policies that facilitate hiring can reduce unemployment and job vacancies ameliorating labour shortages that would otherwise be caused by demographic trends.

Unemployment and labour market policies

A reduction of unemployment could play a significant role in facilitating labour demand in OECD economies in coming years. Some OECD states have had more persistent problems with high unemployment rates in recent years than others. Unemployment rates are relatively low in the OECD's Asian, Scandinavian and Anglophone members, as well as in Mexico, Switzerland and Austria. Unemployment is significantly higher in some Central and Southern European states, as well as in some of the most significant labour markets of continental Europe. In Western Europe, Germany, France and Finland stand out for their high unemployment rates despite being among the most developed economies of the OECD. While Japan and the United States have only experienced cyclical fluctuations, unemployment rates across Europe have tended to increase.

One conclusion is that policies and institutions matter in determining both a country's level of structural unemployment and its speed of labour market adjustment. It has long been argued that overly generous unemployment benefits and employment protections contribute to increased unemployment and reductions in how quickly labour markets adjust to shocks (Scarpetta, 1996). High European unemployment rates appear to be, at least partly, a result of government policies (*ibid*., Scarpetta, 1996). While the exact effects of particular possible labour market and industry reforms remain unclear, there is reason to believe that some regulatory reforms combined with the increasing labour demand due to demographic pressures could be sufficient to significantly reduce unemployment rates and also increase labour market participation. Compared with the United States and Anglophone nations, Europe may benefit most from the reforms in which it is already engaging (Sapir, *et al*., 2004). However given that many nations face a decline in their working-age population, increases in labour force participation will be a fundamental response to labour shortages.

Female labour force participation

An increase in female workforce participation would have a significant impact on overall labour market participation and the size of tomorrow's labour force. Women are half of the working-age population and in most countries have historically had low rates of labour force participation. In fact, many projections assume that female labour participation rates (FLPR), which have risen notably in past decades, will stay more or less constant in coming years. While lower rates are in some cases a cultural phenomena, in some countries low rates are also a result of "market failures and policy distortions" that create disincentives for women to work (OECD, 2004). There is evidence that reforms in policies surrounding second earner taxes, parental leave, child benefits and part-time work incentives could significantly reduce the gender gap in participation rates during the prime adult years. Nevertheless, while one econometric analysis of OECD countries finds such policy effects, it suggests that female education, general labour market conditions and cultural attitudes remain primary determinants of female participation (Jaumotte, 2003).

Regardless, in some OECD states an upward shift in FLPR is already in evidence particularly among younger women compared with the post-war generation. In the United States younger women already participate at rates similar to males from outset to mid-career suggesting that rates may not go much higher (Nyce, and Schieber, 2001). Research on the EU-15 finds that since 1995 there has been a 1% per year growth in employment per capita as a result of changes in female labour market participation, even controlling for policy and institutional variables. Some researchers argue that social norms regarding female labour force participation are changing particularly across southern Europe (Boeri, *et al*., 2005). Since 1985, female labour force participation rates in Italy and Spain, for example, have been converging with the much higher rates of Scandinavia. Such a process, if it continues and is further encouraged by proactive policies, could play an important role in expanding the labour force in some of the OECD states hit the hardest by aging and shrinking populations (Dew-Becker and Gordon, 2008).

Table 2.9 shows male and female labour force participation rates. In Scandinavian and Northern European countries the gap between male and female participation rates is quite low, followed by Anglophone and Central and Eastern European countries. The gaps tend to be larger in Asian (Korea, Japan), Southern European (Spain, Greece, Italy) and the least developed OECD countries (Mexico, Turkey). Ireland and Luxembourg also stand out for their low relative female participation rates. A set of projections for the 18 most developed OECD nations indicates that increasing female participation will have a substantial impact on increasing the size of tomorrow's labour force (*op. cit*., Nyce and Schieber, 2001). The greatest increases are projected for today's low FLFP countries such as Spain, Italy and

Korea. Nations with already high rates of female labour force participation are projected to remain about the same and to remain higher than the OECD average. The projections of notably increased female participation offsets expected small declines in male participation, leading to a 1.3% growth of the total labour force for these 18 OECD countries by 2030; with growth rates between 5 and 8% for the Netherlands, Spain, Korea and Italy. Thus, the expectation is for a path dependency whereby countries with low female participation rates today will remain lower than average in the future.

Labour force participation of the elderly

However it might be accomplished, simulations demonstrate that increasing "the actual retirement age is, in most but not all cases, the most effective policy measure to compensate (partially) for low or negative population growth" (Holzmann, 2005). Because older persons will be a growing proportion of tomorrow's population, if more of them choose to postpone retirement they can significantly boost the size of the labour force. Research shows that even modest increases in the labour force participation of persons ages 60 and over would substantially contribute to maintenance of the labour force. At the same time, the age at retirement varies widely in different countries and labour force participation, particularly for men, has been trending downward over time.

Table 2.9. **Labour force participation rates**

Country	Select projections, 2030		Labour Force Participation Rate, 2007			Gender Gap
	Male	Female	All Persons	Male	Female	%
Turkey	--	--	52.1	77.1	27.2	49.9
Mexico	--	--	66.1	88.1	46.8	41.3
Japan	89.9	74.1	80.2	93.5	66.8	26.7
Italy	79.5	59.4	63.5	75.9	51.1	24.8
Greece	--	--	68.2	80.7	55.8	24.8
Korea	83.5	72.6	70.6	82.6	58.7	23.9
Spain	81.1	66.4	73.1	83.3	62.6	20.7
Luxembourg	--	--	65.8	75.8	55.5	20.3
Ireland	--	--	73.8	83.6	63.7	19.9

Table 2.9. **Labour force participation rates**
(continued)

Country	Select projections, 2030		Labour Force Participation Rate, 2007			Gender Gap
	Male	Female	All Persons	Male	Female	%
Czech Republic	--	--	70.8	79.3	62.1	17.1
Slovak Republic	--	--	68.4	76.0	60.9	15.1
Australia	86.0	69.4	78.0	85.4	70.5	14.9
New Zealand	84.2	70.6	80.8	88.3	73.6	14.7
Austria	--	--	75.9	83.2	68.7	14.5
United Kingdom	86.2	72.0	78.0	85.3	71.0	14.4
Switzerland	--	--	83.7	90.8	76.6	14.2
Hungary	--	--	62.3	69.5	55.5	14.0
Poland	--	--	64.1	71.2	57.2	13.9
Belgium	74.2	70.4	67.2	73.8	60.4	13.4
United States	84.7	79.4	78.3	85.0	71.7	13.3
Germany	83.1	74.0	76.7	83.2	70.2	13.0
Netherlands	79.3	72.4	77.9	84.0	71.7	12.4
Portugal	84.5	70.0	78.7	84.7	73.0	11.7
France	78.6	69.9	69.9	74.6	65.2	9.4
Canada	80.7	73.5	80.0	84.6	75.4	9.2
Denmark	84.1	79.8	81.5	85.8	77.2	8.6
Iceland	--	--	90.8	94.9	86.4	8.5
Norway	84.6	77.2	81.2	84.4	77.9	6.5
Sweden	86.3	83.6	82.1	84.9	79.3	5.6
Finland	79.2	77.6	76.6	78.7	74.5	4.2
Average	82.8	72.9	73.9	82.3	65.6	16.7
33rd percentile	80.9	70.5	70.3	80.1	61.6	13.1
66th percentile	84.5	74.0	78.0	84.7	71.7	15.4

Source: OECD Labour Data, Labour Force Participation Rates, http://stats.oecd.org/wbos/Index.aspx?usercontext=sourceoecd

There is a substantial literature that addresses this issue complete with considerations of the policies that might induce older individuals to stay in the labour force. The OECD has a number of projects that investigate possible approaches to increasing participation among older workers. Of course, legal changes in the required age at retirement could increase the labour force participation rate of older persons. But workers may opt to retire when pensions are available and distortions that encourage early retirement create implicit taxes on postponed retirement. Restructuring retirement incentives so that workers could realize increased pension payouts might induce older persons to remain in the labour force (Duval 2003). Research suggests that even staying in the labour force no more than four additional years substantially increases retirement pay outs and could largely offset concerns that increasing numbers of tomorrow's retirees will live on inadequate incomes (Munnell and Sass, 2008). Employers would have to have an incentive to continue to employ older workers and that might be facilitated by encouraging life long learning with training programs. Research in the United States also suggests that older workers increasingly desire to stay on the job and that employers can benefit from their experience, save money by avoiding the costs of hiring new workers, as well as benefit from lower employee turnover rates (Towers Perrin, 2008).

Then too individuals are both living longer and living healthier lives. Individuals may need to work longer to ensure enough earnings for their eventual retirement, they will have the health to do so and as mentioned above many desire to continue to work. Projections of demographic change that use alternative measures of age suggest that population aging in the world's most developed countries is not nearly so dramatic as is often thought. One proposal is to use "mortality risk" and "remaining life expectancy" to measure "age" for the purposes of assessing its effects on the potential effects of aging on the population and economy. For example, by conventional standards the fraction of the population that is over 65 years will grow by about 66% in the United States by 2050. However, the fraction of the population that is greater than a mortality rate that corresponds to over 65 years today will grow by only 20% (Shoven, 2007).

It can be argued that reforms should aim to encourage maintenance of constant participation rates over time relative to life-expectancy-based measures rather than chronological age. During the past century, the ratio of retirement length to career length has increased steadily, with the entire increase in male life expectancy contributing to longer retirement rather than longer working years. So if retirement ages do not begin to adjust with lengthening life expectancy, tomorrow's workers could spend as much as 40% of their adult life out of the workforce. If labour force participation rates were held constant relative to remaining life expectancy, individuals would still enjoy the same average retirement length. But the total U.S. labour supply would be 9.6% larger

Table 2.10. **Average years of total and healthy post-retirement**

Country	Life Expectancy, 2003-2006		Life Expectancy, 2030		Retirement Age, 2002-2007		Effective Retirement Years, 2030	
	Overall	Healthy	Overall	Healthy	Official	Effective	Total	Healthy
France	80.0	72.0	83.3	76.0	60.0	59.1	24.2	16.9
Austria	79.1	71.0	82.5	75.1	62.7	58.5	24.0	16.6
Belgium	78.4	71.0	82.2	74.7	60.0	59.0	23.2	15.7
Italy	80.2	73.0	83.1	75.8	57.0	60.8	22.4	15.0
Luxembourg	78.9	72.0	81.6	74.1	65.0	59.6	21.9	14.4
Finland	78.4	71.0	82.3	74.9	65.0	60.6	21.7	14.3
Spain	80.2	73.0	83.5	76.2	65.0	62.1	21.4	14.1
Australia	80.8	73.0	84.2	77.0	64.1	63.4	20.8	13.6
Canada	80.1	72.0	83.4	76.1	65.0	62.6	20.8	13.5
Netherlands	79.1	71.0	82.2	74.8	65.0	61.5	20.8	13.4
Slovak Republic	73.6	66.0	78.2	70.3	62.0	57.2	21.1	13.2
Germany	79.0	72.0	82.1	74.7	65.0	61.6	20.5	13.1
Greece	79.0	71.0	82.2	74.8	58.0	61.8	20.5	13.0
Switzerland	81.0	73.0	84.2	77.0	64.5	64.7	19.5	12.3
United Kingdom	78.4	71.0	82.2	74.8	62.7	62.6	19.6	12.1
Norway	79.4	72.0	83.0	75.7	67.0	63.7	19.3	11.9
Sweden	80.3	73.0	83.5	76.2	65.0	64.4	19.1	11.8
Czech Republic	76.0	68.0	79.8	72.1	60.7	60.6	19.3	11.6
Poland	74.4	66.0	78.9	71.1	62.7	59.7	19.2	11.4
Denmark	77.9	70.0	81.2	73.6	65.0	62.4	18.7	11.2
New Zealand	79.2	71.0	83.3	76.0	65.0	65.3	18.0	10.7

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Table 2.10. **Average years of total and healthy post-retirement**
(continued)

Country	Life Expectancy, 2003-2006		Life Expectancy, 2030		Retirement Age, 2002-2007		Effective Retirement Years, 2030	
	Overall	Healthy	Overall	Healthy	Official	Effective	Total	Healthy
Hungary	72.3	65.0	77.3	69.3	61.1	59.0	18.3	10.3
Japan	82.1	75.0	85.4	78.4	62.2	68.2	17.2	10.1
Iceland	80.6	73.0	84.2	77.0	67.0	67.3	17.0	9.8
United States	77.5	69.0	80.9	73.4	65.8	64.3	16.7	9.1
Ireland	78.5	70.0	81.8	74.3	65.0	65.3	16.5	9.0
Portugal	77.7	69.0	81.1	73.5	65.0	66.1	15.0	7.4
Korea	77.4	68.0	81.6	74.1	60.0	69.9	11.8	4.3
Turkey	71.4	62.0	75.9	67.8	59.5	63.7	12.2	4.1
Mexico	74.1	65.0	79.9	72.2	65.0	73.7	6.1	-1.6
Average	78.2	70.3	81.8	74.4	63.2	63.0	18.9	11.4
33rd percentile	78.2	70.0	81.6	74.1	62.5	61.2	18.5	11.0
66th percentile	79.2	72.0	83.0	75.7	65.0	63.8	20.8	13.2

Source: WHO estimates healthy and total life expectancies, http://www.who.int/whosis/; OECD estimates effective and official retirement ages, http://stats.oecd.org; UN projections total life expectancies, http://data.un.org/Data.aspx?q=Life+Expectancy+2030&d=PopDiv&f=variableID%3a68%3btimeID%3a116%2c117.

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than in projections assuming stable participation rates based on chronological age. In turn, the increased labour supply would result in a 7-10% higher GDP (Shoven, 2007).

We approximate the potential for greater labour force participation among older workers with data on retirement, life expectancy and healthy life expectancy. Table 2.10 shows the official and average effective retirement ages across the OECD during the years 2002-2007.[14] Subtracting these from the healthy life expectancy, we have ranked countries by the average years of healthy retirement enjoyed by former labour force participants. Clearly, some countries hit the hardest by population aging are also in the habit of enjoying very long years of retirement. Of countries among those with the longest healthy life expectancies, only three have average effective retirement ages at or above 65 (Japan, Iceland and New Zealand). On the other hand, of the fifteen countries with lower healthy life expectancies, there are four with effective retirement ages at or above 65 (Mexico, Korea, Portugal and Ireland). Continental Western European countries typically have quite low effective retirement ages, in spite of long healthy life expectancies. This is particularly noticeable in the cases of France, Austria, Luxembourg and Belgium, each with effective average retirement ages below 60 and healthy life expectancies over 70. Italy also has a very long effective healthy retirement, with average retirement at 62 years of age. These patterns are likely to persist with extended periods of healthy retirement of an additional three to four years by 2030.

Education, student mobility and skilled immigration

In today's climate of more rapid technological change a higher rate of general high-level education is needed to maximize economic growth potential. Changes in education within OECD countries have ramifications for future international migration patterns. On the one hand, many OECD countries are interested in attracting more foreign students to benefit their educational systems and to streamline their integration into permanent residency. They are also pursuing more "selective" admission policies to attract highly educated immigrants creating a competition for the "best and the brightest." On the other hand, the domestic output of tertiary-educated students has been increasing in most OECD countries. The European countries in particular are committed to improving their educational strategies. Immigration may complement those strategies, but successfully increasing domestic output should also reduce demand for significant increases in the number of highly skilled immigrants.

International students

International students have become an integral part of the increased global competition for highly skilled foreign workers. Policymakers today

see foreign students as an important component of policies on international mobility, not simply as a part of their educational apparatus and international obligations. Foreign students supply diversity to domestic student bodies, increase the tuition base in many countries, but they are also a valuable pre-socialized source of highly skilled immigrants. While the OECD dominates the global marketplace for international students, there is room to speculate about the future given growing global competition especially in typical, less developed source countries.

Table 2.11. **Foreign students in the OECD area: Top OECD receiving and sending countries, 2001**

Host Country	Foreign Students	Country of Origin	Students Abroad in OECD
United States	475 169	China	124 000
United Kingdom	225 722	Korea	70 523
Germany	199 132	India	61 179
France	147 402	Greece	55 074
Australia	110 789	Japan	55 041
Japan	63 637	Germany	54 489
Canada	40 667	France	47 587
Spain	39 944	Turkey	44 204
Belgium	38 150	Morocco	43 063
Austria	31 682	Italy	41 485
Italy	29 228	Malaysia	32 709
Switzerland	27 765	United States	30 103
Sweden	26 304	Canada	29 326
Turkey	16 656	Indonesia	26 615
Netherlands	16 589	Spain	26 196
Denmark	12 547	United Kingdom	25 198
Hungary	11 242	Hong Kong	23 261
New Zealand	11 069	Russian Federation	22 004
Norway	8 834	Singapore	19 514
OECD Total	1 580 513		

Source: OECD education database.

Today, the OECD countries are the world's major hosts of foreign students and their numbers have doubled over the past 20 years to 1.6 million (OECD, 2004). Table 2.11 shows the top destination countries and the most prominent countries of origin. The total number of foreign students enrolled in tertiary education programs outside their countries of origin worldwide has increased in recent years from 1 875 567 in 2000 to 2 651 144 in 2004. These worldwide totals represent a 41% growth and 84% of that growth occurred in enrollments in OECD countries. Today, about 85% of all students studying outside their countries of origin are found in the OECD.

Foreign students enrolled in tertiary institutions and students from certain sources, concentrate in different countries. Three-quarters are enrolled in just six OECD countries: the United States (30%), the United Kingdom (14%), Germany (13%), France (9%), Australia (7%) and Japan (4%). The majority of foreign students come from non-OECD countries: 43% come from Asia, 35% from Europe, 12% from Africa, 7% from North America, 3% from South America and 1% from Oceania. China alone accounts for 10% of foreign students and India another 4%. Regionally, Europe is the leading recipient region and North America is the most open to other regions. There are 840 000 foreign students studying in Europe and 52% are residents of other European countries. There are 520 000 foreign students in North America (US, Canada, Mexico) and 60% come from Asia alone.[15] Concurrently, 70% of all international Asian students are located in the US, the UK and Australia.[16]

Many factors will shape the ability of individual countries with in the OECD to attract international students. The United States lost some of its share of foreign students following the recession of 2001 and the events of 11 September 2001, but the number of students it admits has been strongly recovering (Lowell, *et al*., 2007). This turn of events has heightened controversy over the effects of increasing international competition for foreign students. Many European and English speaking nations are implementing policies to attract foreign students through streamlined admissions, curricula designed for foreigners;[17] outreach and university marketing programs;[18] and policies to retain students after graduation.[19] Policymakers have become keen to allow for an easier transition from student to worker, especially for science and engineering students. How successful these policies will be depends on many things.

In the first place, while targeted admission policies affect which countries foreign students consider, they are not unlike other migrants in that economic opportunities are a primary motivator. The available empirical research finds that wage differentials are the most important correlate of student flows to North America (Rosenzweig, 2006; Lowell and Khadka, 2008; DeVoretz, 2006). Additionally, the cost of education plays an important role in the decision of where to migrate for the pursuit of a college degree and increases in

tuition costs deter student flows. However, while the competition from other countries depresses some of the student flow to the United States, the major destination of international students, it does not appear to have a consistently significant effect. In short, economic factors matter to students and, thus far, international competition among OECD countries has benefited individual countries but not significantly reconfigured who dominates the "student marketplace."

Looking toward the future, however, educational trends lead some observers to believe that the competitive edge may increasingly go to less developed countries that are the source of the majority of international migrants. The rate of enrollment of students in most countries and particularly in the less developed nations has been increasing significantly in the past decade. For example, a lot of attention has been given to the growing number of engineers and scientists graduated from colleges in India and China. The trend is widespread and is coupled with the growth of research and development capacity, to say nothing of growing employment opportunities for skilled workers in many less developed economies. Even though the pool of potential international students is increasing, will fewer students choose to go abroad for their studies or to stay abroad after graduation?

The available empirical evidence suggests the contrary, *e.g.* that students will continue to go abroad as long as economic opportunities, educational quality and future jobs are better abroad. Again, the available econometric evidence finds that wages are the most important attractor of foreign students, but that there is an interactive relationship between economics and educational capacity. The educational output of source countries is associated with higher numbers of their students going abroad, but at a decreasing rate when interacted with wage differentials. This indicates that, for example, there will be relatively little student migration between two OECD countries that produce high numbers of students and offer similar economic opportunities. But student flows from poorer countries will respond positively to increases in their income or output of students (*op. cit.*, Lowell and Khadka, 2007).[20] So it is rather more likely that the marketplace for foreign students will be growing in size, not diminishing; albeit individual countries may be more or less successful in competing for international students. And immigration policies as well as labour market dynamics are then likely to determine whether foreign students stay in the recipient countries upon completing their degrees.

The highly skilled, tertiary-educated foreign-born population

Policymakers are keenly interested in admitting highly skilled immigrants. The foreign born contribution to the human capital profile of receiving countries results from a process of selectivity which, in turn, is the result

of policies on how immigrant admissions are regulated. But the selectivity of the foreign-born is also the result of the socioeconomic attractiveness of a country and that makes it difficult to separately gauge the success of policies. Arguably, selectivity policies are only a tactic waged in order to succeed in admitting an optimal number of highly skilled immigrants. If human capital is something that is accumulated like other forms of capital, then the foreign-born share of human resources is a rough measure of strategic success, at least for countries which otherwise have few natives who are well educated.

Table 2.12 demonstrates that there is a great deal of variation across OECD countries in the proportion of the adult education that has completed college or tertiary education.[21] The Anglophone and Scandinavian countries, as well as Japan, tend to have large shares of the adult (15 years and over) population that have completed a tertiary education. Over 25% of the adult population has completed a tertiary degree in Canada, Japan, New Zealand and the United States. Just over 20% of the adult population has completed tertiary education in Ireland, Norway, Finland, Belgium, Sweden, United Kingdom, Australia and Denmark. Continental European countries tend to be in a middle range between 10 and 20%, while Central European countries tend to be below 10%.

In most OECD countries the foreign-born are better educated than are the native adult population.[22] On average for OECD countries, 24% of foreign-born adults have completed a tertiary education as compared with 20% of native-born adults. Thirty percent or more of the foreign-born have completed a tertiary education in Ireland, Canada, Mexico, United Kingdom, New Zealand, Norway and Japan. The United States stands out among traditional countries of immigration where the foreign born are not markedly better educated than natives. A few countries in which few natives are tertiary educated have foreign-born populations that are better educated than the native, *e.g.* Turkey, Portugal, Slovak Republic, Hungary and Mexico.

The proportion of the foreign born with a tertiary education is often taken as a measure of their contribution to the skill profile of the host country, as well as an indirect gauge of the success of policy in "selecting" highly skilled migrants. The OECD has created two indexes that differentiate the degree to which the share of tertiary-educated foreign born is a result of the mix of source countries or the selectivity of migrants. If a country admits immigrants from source countries with poorly educated populations, on average, then that should be expected to lower its share of the foreign born with a tertiary education. If a country selects immigrants who are better educated than the average adult in their country of origin, then it is successful in attracting the best and the brightest. By this measure, Canada, Ireland and the United States are most successful in attracting or selecting highly skilled migrants, but so too is Mexico which has rather few immigrants over all.

Table 2.12. **Tertiary educational attainment by nativity**

Country	Tertiary of 15+ population %			Ratio Foreign %		Density %	Share OECD Pop. %		
	Total	Native	Foreign	to Native %	to Average%	Foreign of all Tertiary Population	of total popula-toin	of foreign tertiary	Ratio Foreign to Total
Mexico	12.8	12.8	34.8	2.7	1.5	1.0	8.9	0.4	0.1
Korea	--	--	38.1	--	--	--	4.1	0.3	0.1
Japan	27.8	27.8	30.0	1.1	1.3	1.0	10.8	1.6	0.1
Turkey	7.0	6.8	15.2	2.2	0.7	5.1	6.3	0.9	0.1
Poland	10.5	10.4	11.9	1.1	0.5	2.7	3.2	0.5	0.2
Slovak Republic	10.5	10.6	15.7	1.5	0.7	4.2	0.5	0.1	0.2
Finland	23.3	23.4	18.9	0.8	0.8	2.1	0.4	0.1	0.3
Italy	8.3	8.1	12.2	1.5	0.5	6.1	5.0	1.4	0.3
Hungary	11.0	10.7	19.8	1.9	0.9	5.8	0.9	0.3	0.4
Czech Republic	10.3	10.2	12.8	1.3	0.6	6.4	0.9	0.3	0.4
Spain	18.2	18.0	21.1	1.2	0.9	6.4	3.7	2.3	0.6
Portugal	8.5	7.7	19.3	2.5	0.9	15.3	0.9	0.6	0.7
Denmark	20.1	19.9	23.9	1.2	1.1	7.6	0.5	0.4	0.8
Germany	18.7	19.3	14.9	0.8	0.7	--	7.0	5.7	0.8
Austria	11.0	10.9	11.3	1.0	0.5	14.3	0.7	0.6	0.8
Greece	14.2	14.0	15.9	1.1	0.7	12.1	0.9	0.9	0.9
New Zealand	27.9	27.2	31.0	1.1	1.4	24.6	0.4	0.4	1.1
Netherlands	18.9	18.8	19.2	1.0	0.8	11.3	1.4	1.5	1.1
France	17.0	16.9	18.1	1.1	0.8	12.4	5.2	5.7	1.1
Belgium	23.3	23.3	23.0	1.0	1.0	10.6	0.9	1.1	1.2

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Table 2.12. **Tertiary educational attainment by nativity**
(continued)

Country	Tertiary of 15+ population %			Ratio Foreign %		Density %	Share OECD Pop. %		
	Total	Native	Foreign	to Native %	to Average%	Foreign of all Tertiary Population	of total popula-toin	of foreign tertiary	Ratio Foreign to Total
Iceland	--	--	31.4	--	--	--	0.0	0.0	1.5
UK	21.6	20.1	34.8	1.7	1.5	16.0	5.1	7.7	1.5
Sweden	23.0	22.8	24.3	1.1	1.1	14.2	0.8	1.2	1.5
USA	27.3	27.4	26.1	1.0	1.1	13.9	25.7	46.2	1.8
Ireland	24.7	22.7	41.1	1.8	1.8	18.1	0.4	0.7	2.0
Norway	23.5	23.0	30.5	1.3	1.3	8.1	0.4	1.0	2.4
Switzerland	19.2	18.1	23.7	1.3	1.0	27.7	0.6	1.6	2.5
Australia	21.4	20.0	25.8	1.3	1.1	32.3	1.7	5.0	2.9
Luxembourg	16.0	12.8	21.7	1.7	1.0	49.0	0.0	0.1	3.4
Canada	32.9	31.5	38.0	1.2	1.7	25.8	2.8	11.4	4.1
Average	18.2	17.7	22.7	1.3	1.0	13.1	100.0	100.0	1.2
Percentile, 33%	14.1	12.8	19.1	1.1	0.8	6.4	0.7	0.5	0.5
Percentile, 66%	21.6	20.1	25.8	1.3	1.1	14.3	3.3	1.4	1.3

Source: OECD.Stat
Note: Total population as of 2007 and foreign tertiary-educated population as of 2000.

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Somewhat surprisingly, New Zealand and Australia are not ranked that well in terms of this index of selectivity. The more rough-and-ready ratio of a country's share of tertiary-educated immigrants over the OECD average, shown in Table 2.12, corresponds with the more casual impression that the traditional immigrant and Scandinavian countries are the most successful at selecting immigrants.

However, while selective admission policies are the focus of the competition for highly skilled immigrants, they might be seen in the extreme as a tool for maximizing a country's share of the pool of global human capital – a strategy sometimes known as neuromercantilism. So Table 2.12 ranks the OECD countries by their relative share of the OECD's pool of tertiary- educated migrants. This index is the ratio of each country's percent of the OECD's 17.8 million tertiary migrants relative to each country's percent of the OECD's total population of 1.2 billion. Thus, Japan has 10.8% of the OECD's total population, but only 1.6% of all tertiary-educated foreigners living in OECD countries (ratio = 0.1). Canada's market share of the OECD's highly skilled foreign population, on the other extreme, is 4.1 times as great as one might anticipate from its relative population size. If the global competition is about capturing market share of human capital it is also about importing highly skilled immigrants into the domestic market. Immigrants bring diversity and a qualitatively different human capital from the native type. Countries that are non-selective and have relatively few highly skilled immigrants – and have relatively low rates of domestic tertiary education – may be most likely to demand increased levels of highly skilled migration in the future.

Future of domestic tertiary enrollments and the tertiary population

Even if relatively large numbers of highly skilled migrants are selectively admitted, as in Luxembourg or Australia, a nations' future human capital profile will be primarily the result of trends in its domestic population. The future number of adults with a tertiary education will be predicated upon trends in the number of young people and the rate at which they continue their education in tertiary institutions.[23] As obvious as that is, we discuss below enrollment rates because we do not have projections of completion rates for youth or adults. Just as the historic trend in enrollments and tertiary completion have been upward, the future is likely to see further increases.

The Anglophone and Scandinavian countries, of course, already have high rates of enrollments and some observers think that the rate of college completion is unlikely to get much higher. Yet, there is room for increased tertiary enrollments even in these nations. In Europe since 1999 the Bologna Process has been moving toward the creation of a common "European Higher Education Area" across which academic degree and quality assurance standards will be made uniformly compatible. The Bologna declaration now

has 43 signatories, including 23 of the 30 OECD member countries.[24] (This includes all member states of the EU, Turkey, Russia, Ukraine and all but two members of the Council of Europe.) It is hoped that a shorter, three year, bachelor degree will lead to increased rates of tertiary education among European citizens.[25]

Considering possible trends in the domestic supply of competitive applicants, two contradictory forces are at play within many OECD countries. On the one hand, within the next two decades, the aging of the population currently underway will result in a shrinking of the population of college age youth. This could result in shrinking student populations, a reduction in the supply of future college-educated workers and an increase in demand for foreign students and workers. On the other hand, this trend is countered by an increase in the rate at which students are attending college. While the expansion of tertiary education systems is widespread, increases in tertiary enrollment have been particularly notable in certain countries (led by the Canada and the USA). This trend is expected to continue across the most developed OECD countries in coming years. As a higher proportion of young adults enroll in tertiary education, this could counterbalance population decline among the same age bracket and might lead to equal or increasing overall levels of tertiary enrolment.

To evaluate these countervailing trends, Table 2.13 considers projections of youth populations and future rates of enrollment. We use available UN projections of the population 15 to 24 years of age between 2000 and 2030 (the approximate range of student ages).[26] A report to the United Nations on projected economic growth based its scenarios on the assumption that OECD countries would continue to "move towards the general proliferation of the tertiary education".[27] We use those projections for changes in rates of enrollment. The product of the youth population and the enrollment rate yields the estimated rates of enrollment in tertiary education. This is not an estimate of the completion of a tertiary education; much less an estimate of the type and extent of tertiary education of the student enrollees, but it is directly correlated with both. We are unaware of detailed projections of future college completion rates for all OECD countries and we use these available data as a reasonably proxy.

There are, of course, notable differences between countries. Some countries particularly the traditional immigrant receiving, Anglophone and Scandinavian countries exhibit moderate growth or constancy in the student age population. Of course, this is to some degree a function of the population projections which include a healthy number of second-generation children of the immigrants to these countries. However, in the 22-year time frame of the exercise undertaken here, this is simply factoring in the past. However, the majority of OECD countries will face declining student age populations. In

Table 2.13. **Projected young population enrolled in tertiary education**

Country	Population 15-24			Tertiary Enrollment Rare			Tertiary Enrolled Youth		
	2000 (1000s)	2030 (1000s)	Change %	2000 (1000s)	2030 (1000s)	Change %	2000 (1000s)	2030 (1000s)	Change %
Poland	6 508	3 514	-46.0	53.2	87.8	64.9	346 487	308 379	-11.0
Korea *	919	529	-42.4	57.3	89.4	56.1	52 694	47 339	-10.2
Hungary	1 502	924	-38.5	61.6	90.4	46.9	92 507	83 528	-9.7
Canada	4 128	4 187	1.4	87.8	95.5	8.8	362 447	399 836	10.3
Slovakia	7 656	4 285	-44.0	37.6	74.7	98.6	287 777	319 940	11.2
Finland	660	612	-7.2	70.4	89.1	26.5	46 463	54 538	17.4
Czech Republic	1 559	958	-38.6	41.0	78.4	91.3	63 869	75 060	17.5
Greece	1 585	1 078	-31.9	42.3	78.7	86.1	67 031	84 878	26.6
Australia	2 621	2 960	12.9	72.9	90.0	23.5	191 083	266 376	39.4
Germany	9 163	7 355	-19.7	46.1	80.1	73.8	422 407	589 118	39.5
Belgium	1 232	1 153	-6.4	56.3	83.9	49.0	69 340	96 769	39.6
United States	39 234	47 835	21.9	80.9	93.0	14.9	3 174 035	4 446 217	40.1
Spain	5 848	4 982	-14.8	47.8	80.8	68.9	279 527	402 330	43.9
Japan	16 100	10 227	-36.5	35.0	81.1	131.7	563 490	829 412	47.2
Portugal	1 481	1 109	-25.1	38.8	77.4	99.5	57 452	85 865	49.5
Austria	954	844	-11.5	47.4	80.6	70.0	45 203	68 022	50.5
Italy	6 686	5 455	-18.4	42.3	78.7	86.1	282 821	429 303	51.8
France	7 670	7 718	0.6	51.0	81.9	60.6	391 165	632 095	61.6

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Table 2.13. **Projected young population enrolled in tertiary education**
(continued)

Country	Population 15-24			Tertiary Enrollment Rare			Tertiary Enrolled Youth		
	2000 (1000s)	2030 (1000s)	Change %	2000 (1000s)	2030 (1000s)	Change %	2000 (1000s)	2030 (1000s)	Change %
Norway	543	609	12.2	58.6	84.7	44.5	31 807	51 569	62.1
Netherlands	1 886	1 860	-1.3	48.0	80.8	68.3	90 515	150 314	66.1
Denmark	611	629	2.9	48.2	80.9	67.7	29 440	50 819	72.6
New Zealand *	527	600	13.9	58.8	89.9	53.0	30 958	53 938	74.2
United Kingdom	7 162	7 697	7.5	49.6	81.4	64.1	355 242	626 520	76.4
Sweden	1 026	1 138	11.0	46.7	80.3	71.9	47 891	91 403	90.9
Mexico *	20 063	18 089	-9.8	23.4	53.6	129.4	468 485	968 821	106.8
Ireland	650	718	10.5	39.6	77.7	96.2	25 742	55 818	116.8
Iceland	43	43	1.4	35.4	76.2	115.1	1 512	3 296	118.0
Luxembourg	50	68	34.3	50.0	81.6	63.1	2 521	5 521	119.0
Turkey	13 610	13 303	-2.3	22.6	52.2	131.0	307 337	694 038	125.8
Switzerland	839	835	-0.5	32.6	75.2	130.5	27 357	62 721	129.3
Average	5 417	5 044	-8.8	49	81	73.1	273 820	401 126	55.8
33rd percentile	995	889	-16.4	42	79	62.0	50 629	72 034	39.5
66th percentile	5 940	4 201	1.4	51	82	86.1	283 515	331 126	67.0

Sources: UN 2000, 2008; OECD 2008; calculations by authors.
* projected enrollment rate imputed by authors based on linear trend of other OECD nations.

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some cases this decline will be quite rapid particularly in Central European, Asian and South European OECD member states.

At the same time, the changes in enrollment rates can be quite remarkable. By 2030, the lowest gross enrollment ratio in the OECD, that of Switzerland at just 33%, is projected to grow to 75%. The country with the current highest tertiary enrollment rates is Canada at 88% and it is, nevertheless, projected to increase to 96%. The most rapid growth in enrollment rates will likely occur in those developed countries in which enrollment rates have previously stayed relatively low. The most extreme increases are projected to be Japan, Switzerland and Iceland. On the other end of the spectrum, states that have already reached high enrollment rates have less room to increase. Notably, Canada, the USA, Australia and Finland already have very high enrollment rates; above 70%. Taken into account beside population trends, this could mean that these countries will face more rapid leveling out of net student enrolments.

The countries in Table 2.13 are sorted by their ultimate projected tertiary enrollment which partly obscures the fact that the student-age population will be declining in most OECD countries. In contrast, all countries are expected to experience increasing rates of tertiary-enrollments and that cancels out the casual expectation that the future tertiary-educated population will also decline in size. On average, the student tertiary-aged population is projected to decline by -9% by 2030. At the same time, the projected increase in rates of enrollment is quite substantial, averaging an increase of 73% of the OECD countries. In turn, the magnitude of this increase effectively counters the falling size of the student-age population yielding an increase of 47% in the size of the enrolled population on average by 2030. Thus, Japan is projected to face a 37% decline in its student-aged population, but increases in its enrollment rates yield a projection of a 47% growth of its tertiary-enrolled population. The United States which is projected to have a favorable 22% increase of its student-age population is projected to have an even greater 40% increase it its tertiary-enrolled population. Most countries by these projections will have a much better educated population in the future.

Health factors

Many observers believe that there are already shortages of healthcare workers in many OECD countries and that, particularly in countries with rapidly aging populations, there are likely to be more widespread shortages in future years. There is likely to be an increased demand for both intensive medical care and a variety of related services for the elderly. Assuming a demand for healthcare services that may not be met by domestic supply, many OECD countries are likely to make efforts to address the fundamental causes of weak supply. However, given the long duration of training for the most skilled medical professions, it is unlikely that domestic policy changes to

encourage training or even retention will result in a rapid enough turnaround to completely remedy near term shortages. If shortages prove to be as great as some projections indicate, immigration of foreign healthcare workers is likely to play a role in meeting the health care demands (OECD, 2004).

Anticipating shortages of doctors and nurses

In the next 20 years, OECD countries will face new challenges meeting their domestic demand for health care workers. This is a result both of increases and changes in the nature of demands for health care and of some possible reductions in supply as well. As a the elderly population grows there will be an increase in the need for certain kinds of medical care, especially long term care and associated services. At the same time, as the proportionate (and in some cases, overall) population of youth decrease, this could potentially reduce the supply of healthcare providers at all skill levels. Shortages are anticipated medical personnel or caregivers of various sorts, particularly nurses and providers of home care for the elderly.

Significant changes in health care demand are driven by changes in the health of the population. Current factors contributing to increased demand for medical care in some OECD countries include the prominent health problems caused by obesity, sedentary lifestyle and bad diet. Change in population health becomes a significant factor when considering longer term trends related to the demographic shift underway across the most developed countries. As populations age, even greater increases in health care demand can be expected targeted at the growing elderly population. The demographic shift also brings with it a demand for particular types of health care. In an aging population, the need for long term and direct care targeted at the chronically ill will become ever greater. The OECD countries have completed their epidemiological transition. In the Americas, Europe and the Western Pacific, the rate of mortality due to non-communicable diseases already far outstrips that due to all other reasons put together (UN-DESA, 2007).

Cultural shifts in the provision of care for the elderly complicate the picture. As one UN study points out, "family- or community-based informal support for older persons is under growing pressure due to falling fertility rates, smaller family sizes, increased longevity of older persons and changing cultural norms regarding caring for older persons (UN-DESA, 2007, p. 116). As smaller families become increasingly unable to provide the necessary care for aging and chronically ill relatives, the demand for long term care provision will likely continue to grow. Unlike traditional hospital-based work structured around physician visits by patients or hospital stays at times of acute illness, long term care requires more constant supervision of patients. This sort of "direct care" can be provided at nursing homes by nurses or other health care workers at patients' places of residence. Even in countries

without severe physician or nurse shortages, there is often an unmet demand for lower-skilled long term care providers.

There are concerns about future supply of workers to meet the growing demand. The last fifteen years have seen a slowing of the growth rate of the density of physicians and nurses across OECD countries. While from 1975 to 1990 physician density growth averaged 3% per year, from 1990 to 2005 this number declined to 1.6%. Similarly, increases in the density of nurses went from 2.6% to 1.6%. While it could be argued that perhaps the slowing of supply growth could be a reaction to market saturation, there is evidence that this slowing has occurred in spite of increasing demand. There are many possible reasons for the slowing growth; one reason has been the existence of caps on the numbers of students that can enrol in training programs for medical professions in some European nations. In the United States, inadequate capacity has led many schools to turn away nursing applicants.

At the same time, the structure of work has been changing. Doctors and nurses have begun to work fewer lifetime hours, meaning that a larger number of physicians are required to meet the same level of health care demand. Some countries have been affected by policy reforms reducing the weekly hours required of medical professionals (this is true in the EU and the USA). The feminization of the medical workforce might also contribute to reductions in lifetime hours. On average, the percentage of physicians who are female has increased from 28.7% to 38.3% in the last 15 years. As female doctors tend to work fewer weekly hours or have shorter working careers this too may have decreased the supply of medical care. Other recent changes include the tendency toward a greater degree of specialization and more overall health care activity for each patient (tests, referrals, specialist consultation). Across the OECD, the average ratio of specialists to general practitioners rose from 1.5 to 2.0 between 1990 and 2005. All of these trends contribute to a growing concern about future shortages of medical care workers in several categories (*op. cit*., OECD-ELSA, 2007).[28]

Domestic solutions to shortages

Shortages of healthcare workers can be met in many ways and it is likely that a number of different approaches need to be taken. Of course, the immigration of foreign medical professionals is embraced by some policy makers as one attractive solution. International migration of health workers is already helping some countries meet healthcare labour market demands and it is likely that the increasing demand for certain types of health care workers will be an important pull factor affecting international migration flows of health professionals in coming decades (OECD, 2008).

Domestic policies and employ strategies will impact supply and demand. If a country increases the rate at which it trains domestic doctors, nurses and caregivers, it will have less need of immigrants. There actually was a decrease in the overall production of medical professionals in many OECD countries in the 1980s and early 1990s. And in several countries a dramatic increase in the immigration of medical professionals occurred in the late 1990s. But despite an upswing in the number of students being trained since the mid-1990s, the average number of medical students graduating annually across the OECD in 2005 was still below the level it had reached in 1985.[29] This "U-shaped curve in training" was in part a result of caps placed by countries on either student-intake rates or on funding for medical education programs.

Importantly, initiatives might aim to improve retention rates among existing medical personnel, improving the workforce organization and increasing incentives for workers to continue work (Simoens, and Hurst, 2006; Simoens, *et al*., 2005). Special focus is needed on remote rural locations and other areas facing particular scarcities of healthcare workers. Improved working environments and benefits could be used to encourage retention of nurses and other workers that often leave the workforce early. Employers may also be open to reentry into the medical workforce fore workers who have left it previously. Productivity of existing medical personnel could also potentially be improved in some countries by linking the level of pay more directly to performance.

Projections of healthcare demand and shortages

We could not find any detailed projections of shortages for a large number of countries, particularly out to 2030. Individual national studies can be relatively detailed, however, they are too few and different methodologies make comparison difficult. Compounding the problem is the lack of projections for other than physicians or nurses or, conversely, the aggregation of all types of healthcare workers; or separate projections only for the future of long-term healthcare services (Lowell and Dumas, n.d.). There are several approaches to estimating the future healthcare labour force: needs-based planning, personnel-to-population ratios, service targets, demand-based approaches, extrapolating school admissions and benchmarking (Zurn, *et al*., 2002). Also complicating the picture are the many different ways of assessing "shortages" from unemployment and vacancy rates, to the uneven provision of services by geography or income class, to problems with retention that reduce potential supply. Indeed, "it is clear that imbalance in the health workforce encompasses a large range of possible situations and is a complex issue" (*op. cit*., Zurn, *et al*., 2002).

One approach using personnel-to-population ratios through 2050 included regional estimates of the percentage of the workforce that would need to be in healthcare in order to provide different levels of care (Matthews, *et al*., 2006). It found that the projected growth in the number of healthcare workers would

grow more slowly in Europe than in North America, but that both regions would converge in the number of workers by 2050. At the same time, conservative projections to 2025 for the percent of the total workforce needed to maintain current levels of healthcare ranged from a low for Southern Europe of 7.9%, 9.2 for Northern Europe, 9.6 for Japan, 10.1 for Western Europe and 11.6% for Northern America. Roughly, this suggests that labour forces that already have about 10% of workers in healthcare are well positioned to meet this projection of tomorrow's increased level of demand. Of course, that must be taken with all of the caveats discussed above of how future supply will meet demand.

From another angle, a World Health Organization study contrasts need- and demand-based methods of projecting global physician shortages (Scheffler, *et al*., 2008). Examining data from 158 different countries between 1980 and 2001, it used two alternative models. A needs-based model assumes that a minimal necessary number of physicians per capita would be the number sufficient to

Table 2.14. **The population density of all physicians and nurses and the percent of foreign-born working in the healthcare industry**

Country	Percent of Foreign Workforce	Density per 10 000 population, 2006*		Ratio to top quintile of density, 2006	
	Health and other community services	Physicians (all)	Nurses and midwifes (all)	Physicians (all)	Nurses and midwifes (all)
Mexico	--	18	23	0.49	0.19
Turkey	--	16	29	0.44	0.24
Greece	2.3	50	33	1.36	0.28
Korea	--	16	38	0.44	0.32
Portugal	8.0	34	46	0.93	0.39
Poland	9.3	21	51	0.57	0.43
Hungary	8.2	28	59	0.76	0.50
Slovakia	8.6	31	66	0.84	0.55
Italy	4.7	38	70	1.03	0.59
Austria	9.4	35	72	0.95	0.61
France	9.8	34	74	0.93	0.62
Spain	2.8	38	74	1.03	0.62
Finland	13.9	27	80	0.73	0.67

Table 2.14. **The population density of all physicians and nurses and the percent of foreign-born working in the healthcare industry**
(continued)

Country	Percent of Foreign Workforce	Density per 10 000 population, 2006*		Ratio to top quintile of density, 2006	
	Health and other community services	Physicians (all)	Nurses and midwifes (all)	Physicians (all)	Nurses and midwifes (all)
Czech Republic	6.2	36	81	0.98	0.68
Canada	--	21	87	0.57	0.73
Netherlands	14.6	37	89	1.01	0.75
Japan	--	21	95	0.57	0.80
Australia	--	28	97	0.76	0.82
Germany	9.9	34	97	0.93	0.82
New Zealand	--	21	102	0.57	0.86
United States	8.5	24	104	0.65	0.87
Sweden	19.1	35	107	0.95	0.90
United Kingdom	15.7	24	123	0.65	1.03
Iceland	--	37	140	1.01	1.18
Switzerland	13.2	38	141	1.03	1.18
Belgium	10.4	40	148	1.09	1.24
Denmark	20.2	36	150	0.98	1.26
Ireland	10.8	28	152	0.76	1.28
Luxembourg	7.4	25	159	0.68	1.34
Norway	25.4	37	310	1.01	2.61
Average	10.8	30	97	0.82	0.81
20th percentile	13.7	37	119	1.00	1.00
33rd percentile	8.5	26	73	0.71	0.61
66th percentile	10.7	35	102	0.96	0.86

Source: Workforce, 2000 or nearest, OECD.Stat; Density, 2008, OECD.Stat; WHO data for some density values.

Note: Workforce percent estimated Estimate for the United States from industry data, 2000.

have a physician present at 80% of live births. This is a base line or minimal level of care (and is implicitly estimated to provide baseline expectations for less developed African nations). A demand-based model, on the other hand, is based on the economic demand for physicians that has historically been closely associated with increases in per capita income, *i.e.* as individuals earn more then tend to consume more health services. The projections of supply are extrapolations based on the relationship between the number of physicians and per capita income. The study's results indicate that the *global* supply of physicians in 2015 will be in balance with the demand model and greater than necessary to meet the basic needs requirement. However, while no European country is projected to experience needs-based shortages; ten are projected to have demand-based shortages as are the North American countries.

Immigrants in healthcare

Table 2.14 shows data on the percentage of just the foreign-born workforce found in the healthcare industry, as well as measures of the density per 10 000 populations of physicians and nurses in OECD countries. The percentage of workers employed in the healthcare sector is a loose gauge of whether enough workers exist to meet demand. Based on the above estimates, percentages roughly around 9 to 10% suggest that a country is already employing workers at a level commensurate with the provision of health services to meet longer run demand. The figures shown here are for workers in the healthcare industry as comparable data are unavailable by occupation. These data are worthy of analyses that we will not undertake here and we note only that the healthcare sector is a specialized niche for women migrants which has analytic and policy ramifications.[30] Nursing and long-term healthcare occupations in particular are known to employ women.[31]

Density or the relative number of workers is a preferred measure of capturing minimal (and maximal) levels of service provision in healthcare. The density of physicians and nurses in the OECD countries ranges from 16 to 42 per 10 000 population in Turkey and Belgium respectively. The range of nursing ratios is yet more dramatic running from 9% to 195 per 10 000 population in Mexico and Ireland respectively. There is a low correlation between physician and nursing density ($r = .29$) which suggests that the mix of health services is met differentially by more or less of one type of provider. Canada has a very high nursing density, but a rather low physician density. Greece has a very low nursing density, but a very high physician density. Naturally, this complicates any assessment of how the needs of an aging society will be met. It is the case; however, that nurses are more likely to be the provider of choice in long term care settings. That suggests that shortages of nurses might be somewhat more acute to meeting the combined demands of both general and long term healthcare.

Table 2.14 ranks the OECD countries by their density of nurses relative to the upper quintile of the nursing density distribution for all OECD countries. This is not quite adequate to the task of assessing future shortages, but is squarely addresses the current level of provision relative to a benchmark estimate of future demand (*i.e.* the highest densities seen today). Once again, this ranking is highly correlated with the percent of the immigrant workforce employed in the healthcare sector which, in this context, implies that nations that are employing immigrants in healthcare benefit with improved delivery. Mostly, note that even while Mexico and Turkey have low densities relative to the benchmark, so too do France and Germany. Interestingly, all of the traditional countries of immigration – Canada, Australia and the United States – are found in a middle range of nursing densities. Countries in the upper quintile of nursing densities include the Scandinavia countries of Sweden and Norway, as well as the newer countries of immigration Ireland and the United Kingdom. These latter countries have the highest shares of their immigrant workforces employed in the healthcare sector of the OECD.

A growing literature on this issue addresses the labour rights, regulatory challenges and management imperatives of large immigrant workforces in healthcare (Bach, 2003; Forcier, *et al*., 2004; Stilwell, *et al*., 2004). If not accompanied by increasing domestic output of trained professionals and more efficient use of the existing healthcare workforce, immigration might create a dependency that would slow domestic responses. Targeted immigration policies may work best, *e.g.* those that facilitate the employment of foreign medical personnel in under served areas, select for admission foreign educators to boost domestic training capacity and policies that streamline certification of foreign medical graduates. The development of more advanced forms of nursing certification, could contribute to a "more efficient skill mix" in the health care labour market.

Integration policies

There are factors "other" than those discussed thus far that might impact the immigration pull of OECD countries. Obviously, world altering events, terrorism, or wars might stop international mobility cold. Certainly, the events of 11 September 2001 in the United States led to a short-term decline in tourism and, perhaps, other forms of mobility. Of course, a near simultaneous recession also depressed migration as economic downturns generally do. As we write this paper the global financial crisis is being discussed as potentially as calamitous as the great depression of the 1930s. If that were to occur it is likely that migration would ebb for a lengthier time. But it is very difficult to forecast such events as they are extremely rare (Smil, 2005).

We can assert with some what greater confidence that changes and variation in immigration, as well as the policies affecting integration, are likely to

play a significant role in encouraging or discouraging future migration flows. After all, policies may be more or less successful in attracting immigrants or mediating societal reaction to newcomers. Policies to admit immigrants can determine both the number and the skill composition of immigration flows which, in turn, impact natives. Policies on the integration side impact how well immigrants do and the how they are perceived by the electorate. Nevertheless, we aim to assess likely pressures bearing on policy makers in the future, not to think through policy implications and policy options.

Integration policies and integration

Individual attitudes toward migration are shaped by their experience of immigrants and, ineluctably, by the policies that affect immigrants. Research finds that natives are substantially less welcoming towards immigration if they are in competitive labour markets or perceive foreigners as burdens on the welfare system (Bauer, *et al*., 2000). Increases in immigration can reduce natives' openness to further immigration (Hanson, 2005). These discontents may work themselves out through interest group politics, but that hardly changes the likelihood that policymakers of the future may face pressures that are generated by the policies of today.

Policymakers are aware of the peril of the failure to integrate new immigrants. Riots in France and discovery of terrorist cells within émigré communities in several OECD countries have brought widespread public attention. There has been an increasing concern about the existence of culturally, socially or economically isolated communities of immigrants within recipient countries. If countries are unable to integrate new immigrants into the social and economic fabric of their societies, policymakers in coming years are likely to face popular pressure to limit the numbers of immigrants permitted. Some governments – especially those facing demographic or labour market forces that favor heavy in-migration – might deal with this challenge by crafting policies explicitly aimed at the better social integration of immigrants. Albeit, previous success integrating immigrants and a favorable policy environment does not ensure that future immigration flows will not lead to social or economic instability and political backlash. In countries where migration in-flows are expected to increase significantly in coming years, even the best structural conditions could prove inadequate to facilitate the rapid acceptance of disproportionate new immigrant populations.

Naturally, there is significant interest in integration policies and substantial body of research on the issue. We do not have the space of an adequate review and, regardless, there is substantial debate over the issue. As might be expected, economic integration is generally perceived as the most basic hurdle for successful integration. Immigrants who are able to find employment and earn wages commensurate with their skills are almost always better integrated

along linguistic, educational, social, political and cultural dimensions. That is, of course, somewhat of a chicken and egg observation because better educated persons are better able to achieve economic integration. But it is readily acknowledged that barriers to integration hinder economic success and this fundamentally undermines fuller integration on other important dimensions – including the achievement of successful multicultural outcomes.

Furthermore, we know of no serious efforts to project the success of immigrants of tomorrow to integrate into receiving societies. Instead, we review here two indexes that attempt to dynamically evaluate current progress toward integration. The one approach is to consider economic integration into labour markets, the other approach is to construct an index with subscales that cover a range of integrative outcomes.

First, the OECD regularly reviews the labour market outcomes of immigrants in its member countries and each yearly report of its *International Migration Outlook* generates more information and more sophisticated measures. On a yearly basis, most reports present as much data as possible on the occupational and industrial composition of immigrant populations, as well as their relative rates of unemployment and underemployment. The 2003 report presents first-ever data on comparative native-immigrant wage outcomes, as well as a "scoreboard" of progress in immigrant employment outcomes over a five-year period by gender and compared with the native-born population. It is based on the labour market indicators of the employment rate, the participation rate and the unemployment rate. In Table 2.15 below we show only the ranking assigned based on an assessment of the immigrant employment rate in 2006, the employment rate corrected for education differences with natives; changes in the immigrant employment rate over the last five years; and changes in the gap between the immigrant and native employment rates over the last five years.

By this ranking some countries have experienced worsening conditions over the past five years (2001-2006). In France, the immigrant employment rate fell by 1.4 percentage points and by 3.4 points in the Netherlands. In Belgium only one immigrant in two was employed in Belgium, although it made progress with respect to women. In Austria, on the other hand, conditions have been deteriorating in both absolute and relative terms. Switzerland has the highest immigrant employment rate in Europe. The countries of Southern Europe also do relatively well, perhaps because their immigration is fairly and more driven by admissions for the labour market. The non-European members of the OECD, in particular the traditional countries of immigration such as the United States and Australia, tend to have the best labour market integration. Another effort to create an integration index has been undertaken by the British Council. Its Migration Integration Policy Index (MIPEX) builds on over 100 indicators and builds subscales for labour market access, family

Table 2.15. **Indicators of immigrant integration**

Country	Unemployment Rate			Employment Improvement Index		Integration Policy Index		
	Natives	Foreign Born	Ratio Foreign to Native	2006 rank	Education Control	Overall	Labor Market	Labor with Imputed
Sweden	6.2	13.4	2.2	12	12	88	100	100
Portugal	8.0	9.8	1.2	2	4	79	90	90
Spain	8.1	11.2	1.4	5	5	61	90	90
Italy	6.7	8.5	1.3	9	11	65	85	85
Australia	4.1	4.7	1.1	6	7	--	--	80
Canada	6.4	7.0	1.1	--	--	67	80	80
New Zealand	4.8	6.0	1.3	--	--	--	--	80
United States	5.3	4.4	0.8	4	2	--	--	80
Belgium	7.0	17.3	2.5	20	20	69	75	75
Switzerland	2.8	8.0	2.9	1	1	50	75	75
Finland	8.7	18.1	2.1	15	15	67	70	70
Iceland	--	--	--	--	--	--	--	70
Netherlands	3.8	10.7	2.9	16	16	68	70	70
Norway	3.0	8.3	2.7	8	3	64	70	70
United Kingdom	5.1	7.6	1.5	8	9	63	60	60
Slovakia	--	--	--	19	18	40	55	55
Czech Republic	7.1	11.5	1.6	14	9	48	50	50
France	9.0	16.2	1.8	18	19	55	50	50
Germany	10.4	17.0	1.6	17	14	53	50	50
Ireland	4.2	6.0	1.4	3	7	53	50	50
Austria	3.8	9.8	2.5	11	10	39	45	45

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Table 2.15. **Indicators of immigrant integration**
(continued)

Country	Unemployment Rate			Employment Improvement Index		Integration Policy Index		
	Natives	Foreign Born	Ratio Foreign to Native	2006 rank	Education Control	Overall	Labor Market	Labor with Imputed
Luxembourg	3.3	6.5	2.0	6	6	55	45	45
Denmark	3.7	7.5	2.0	10	13	44	40	40
Greece	9.0	9.4	1.1	7	8	40	40	40
Hungary	7.5	7.0	0.9	13	17	48	40	40
Japan	--	--	--	--	--	--	--	40
Korea	--	--	--	--	--	--	--	40
Mexico	--	--	--	--	--	--	--	25
Poland	--	--	--	21	21	44	25	25
Turkey	--	--	--	--	--	--	--	25
Average	6.0	9.8	1.7	11	11	57	62	60
33rd percentile	4.3	7.6	1.3	7	7	50	50	48
66th percentile	7.1	10.2	2.0	14	14	64	70	71

Sources: Migrant Integration Policy Index, http://www.integrationindex.eu/; OECD, 2008, http://dx.doi.org/10.1787/427612120345; OECD, 2008, http://dx.doi.org/10.1787/427620785702

Note: Imputed values are assigned to be comparative with similar countries and most likely tranche, *e.g.* for Australia, New Zealand, Canada, Iceland, Japan, Korea, Mexico and Turkey.

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reunion, long-term residence, political participation, access to nationality and anti-discrimination. The findings show that the EU-25's integration is only "halfway to best practice," *e.g.* that there is substantial room for improved integration. Just Sweden was assigned a "best practice" on every single indicator, but just for labour market access. Nine countries out of 28 in the index had policies that are considered to be partly favorable – the Nordic countries, the Western Mediterranean, the Benelux countries, Canada and the United Kingdom. At the same time, five countries fall in the middle with mostly unfavorable integration, *i.e.* Latvia, Cyprus, Greece, Slovakia and Austria. The ten lowest ranked countries on the index are found in the Baltic Republics, the countries of the Eastern Mediterranean, Central Europe and Denmark.

Table 2.15 shows the OECD's "scoreboard" of employment and the MIPEX's total and labour market indexes. The countries are ranked by the MIPEX's labour market score because it is highly correlated with the MIPEX's overall score ($r = 0.84$) and because we can impute country scores (in bold) based on the "scoreboard" and by inference from the characteristics of immigrants in the missing countries. The imputation is a somewhat hazardous exercise sure to excite some, but it seems unlikely that we have grossly misallocated countries not otherwise included in the MIPEX in terms of the tranches of high, medium and low integration. Of course, the rankings are the same as those just discussed above with most of the traditional countries of immigration, along with Scandinavia performing best (not including Denmark). At the other end of spectrum, Poland ranks lowest and we include here Turkey and Mexico primarily because their relative number of immigrants is so very small.

A note on admission policies

How many and what types of immigrants enter a country is, in no small part, a consequence of admission and selection policies. While it is widely thought that more skilled or educated immigrants will be the most successful at integration, there is relatively little research on the range of policy elements that might affect the best overall composition of the immigrant stream.

Immigrants are typically admitted for one of three reasons: family reunification, employment or skills and for humanitarian purposes. Obviously, different criteria apply to each and, furthermore, nations use different mechanisms to regulate the number of kind of immigrant admitted in each of the three classes. One study of admission classes makes the following point:

Natives in countries that receive predominantly refugee migrants are relatively more concerned with immigrations impact on social issues such as crime than on the employment effects. Natives in countries with mostly economic migrants are relatively more concerned about losing jobs to immigrants. However, the results also suggest that natives may view immigration more

favorably if immigrants are selected according to the needs of the labour markets (Bauer, *et al*., 2000).

These observations neatly summarize parallel shifts in policies in many OECD countries. European countries have more comprehensive welfare than the United States and some have limited asylum seekers and migrant access to the labour market; in part, one result has been difficulties in labour market integration and social tensions. They have taken steps to shift policies to limit asylum seekers. At the same time, immigrant admissions that favor more employment-based or economic migrants can generate fears of job competition, but if employment policies are well designed, they can allay those fears. Indeed, there is now a commonplace belief that employment-based migration is more readily manageable and preferable.[32]

A transformation of admission policies towards emphasizing the selection of highly educated and highly skilled immigrants is already underway in many OECD states. The extent to which a country selects for and attempts to attract, highly skilled immigrants is a particularly significant aspect of migration policy. In coming years, these "selection policies" could alleviate some of the expected labour market shortage effects of the demographic shift in developed countries (Koslowski, 2008). In addition to their potential economic contributions, highly educated and skilled immigrants are preferred to lower skill groups for reasons of social cohesion. Highly skilled immigrants tend top readily integrate socially and economically. In fact, some state policies suggest a competitive posture, trying to out-compete other states in attracting high skilled immigrants – the immigrants being viewed as a scarce resource in the global system.

Migrant admission policies impact integration and social acceptance. There are broadly two issues of importance: *(1)* admissions mechanisms that regulate the number of migrants and protect domestic labour; and *(2)* migrant rights in the labour force, as well as rights to permanent residency (and ultimately citizenship) (Lowell, 2005). Numbers that do not vary with the economy are likely to adversely impact domestic workers during downturns, while leaving employers frustrated in upturns. That, in turn, has the potential for exacerbating social pressures and policy flip flops. Migrant rights are important because they condition the path toward integration. In this regard, the trend toward "temporary" admission programs for skilled workers can create a probationary period that, ultimately, makes integration lengthier and more difficult over all (Ruhs, 2006).

There may be more competitive admission policies in the future precisely because some policymakers have become enchanted with the idea that they are necessary in a competitive, global economy. If they are poorly managed, however, they could create imbalances in the labour market and native resentment which could lead to a second round of more restrictive policies.

Table 2.16. **Pull factors affecting the number of migrants: H = high pull, M = medium pull, L = low pull; and ranked by giving economic pull half weight**

	Net migration	Ratio per capita GDP	Depend-ency ratio	Change working ages	Net-works	Female labor	Years post-retire	Integra-tion		Mode	Demo-graphic pull (50%)	Eco-nomic pull (50%)
Australia	H	H	H	L	H	M	H	H		H	2.4	2.8
Finland	M	H	H	H	M	L	H	M		H	2.4	2.6
Netherlands	M	H	H	H	L	L	H	M		H	2.4	2.6
Austria	L	H	H	H	M	M	H	L		H	2.3	2.6
Japan	M	H	H	H	M	H	L	L		H	2.3	2.6
Luxembourg	L	H	L	L	H	H	H	L		L	1.7	2.4
Ireland	L	H	L	L	H	H	L	M		L	1.6	2.4
Denmark	L	H	M	H	L	L	M	L		L	1.8	2.3
United States	L	H	L	L	M	M	L	H		L	1.6	2.3
Belgium	H	M	M	H	L	M	H	H		H	2.5	2.2
Italy	M	M	M	H	L	H	H	H		H	2.5	2.2
Korea	H	M	H	H	--	H	L	L		H	2.3	2.2
Iceland	L	H	L	M	--	L	L	M		L	1.5	2.2
Switzerland	L	M	H	H	M	M	M	H		M	2.3	2.1
Spain	L	M	M	M	M	H	H	H		M	2.2	2.1
Germany	M	M	H	H	--	L	M	M		M	2.1	2.1
Canada	L	M	H	M	L	L	H	H		L	2.1	2.0
New Zealand	H	M	L	L	H	M	L	H		H	1.7	2.0
France	M	M	M	M	L	L	H	M		M	1.9	1.9
Sweden	M	M	M	M	L	L	M	H		M	1.9	1.9

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Table 2.16. **Pull factors affecting the number of migrants: H = high pull, M = medium pull, L = low pull; and ranked by giving economic pull half weight**
(continued)

	Net migration	Ratio per capita GDP	Depend-ency ratio	Change working ages	Net-works	Female labor	Years post-retire	Integra-tion		Mode	Demo-graphic pull (50%)	Eco-nomic pull (50%)
Portugal	M	M	L	H	L	L	L	H		L	1.8	1.9
United Kingdom	M	M	L	M	L	M	M	M		M	1.8	1.9
Norway	L	M	L	M	M	L	M	M		M	1.5	1.8
Czech Republic	H	L	M	H	M	H	M	M		M	2.2	1.7
Poland	H	L	M	H	H	M	M	L		H	2.0	1.6
Slovakia	H	L	L	H	H	M	M	M		H	1.9	1.6
Hungary	H	L	L	H	H	M	L	L		L	1.7	1.5
Mexico	H	L	L	L	H	H	L	L		L	1.5	1.4
Turkey	H	L	L	L	H	H	L	L		L	1.5	1.4
Greece	L	L	L	H	L	H	M	L		L	1.7	1.4
Mode	1	2	1	3	1	3	2	1		1	2	3
Average	2.0	2.1	1.9	2.3	2.0	2.0	2.0	2.0		2.0	2.0	2.1
33rd percentile	1.0	2.0	1.0	2.0	1.0	1.6	1.6	1.6		1.0	1.9	1.9
66th percentile	2.1	2.1	2.0	3.0	2.2	2.1	2.1	2.1		3.0	2.3	2.2

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Flip flops in policymaking might be avoided if admission and integration policies are thought of as a package with due consideration for dynamically varying the number of migrants and providing optimal rights for success in the labour market.

Future migration levels and composition

The pull factors discussed in this report can be divided between those that most directly impact on the numbers or level of migration and those that are more likely to impact the composition of the migration flow. Economic differentials, for example, are more likely to impact the degree of attractiveness and pull on future migrants of any skill level. Even demographic change is likely to create demand for generous levels of migration at all skill levels to supply shortages in low-skilled healthcare services or agriculture, shortages of high-skilled nurses, or demand for productivity boosting scientists and engineers. But the domestic supply of highly educated workers is likely to moderate future demand for skilled immigrants, as is domestic availability of healthcare workers. Similarly, countries that today admit most of their workers from the more developed countries are likely to need to draw their immigrants of tomorrow from less developed countries. There may be fewer migrants available from more developed nations as population growth attenuates, wage differences further decline and increasing domestic demand influences retention.[33]

Table 2.16 summarizes the pull factors and the triptile into which each country was ranked. The factors here are economic differentials (GDP per capita relative to baseline less developed nations), demographic factors of aging and labour force growth, migrant networks, labour force factors of likely future participation of women and the elderly; and integration which conditions social receptivity to increases in migration. Each triptile is assigned a score according to whether the degree of pull on migrants is high (H = 3), medium (M = 2), or low (L = 1). Next, the modal score is calculated, as well as two scores which assign either half of the weight of all scores to either the economic or the demographic factors. We do this because the economic factor is acknowledged to be the primary determinant of the rate of immigration in almost all empirical models. At the same time, most policymakers believe that there will be substantial pull for immigration generated by demographic aging and laggard growth of the working-age population; and these are the fundamental drivers of future productivity and labour shortages. We then sort the nations by the predominantly economic pull ranking (50% of the weight given to relative per capita GDP).

Nine countries are ranked as exerting a substantial "high" pull on future migration. The leading countries rank high on *both* the predominance of

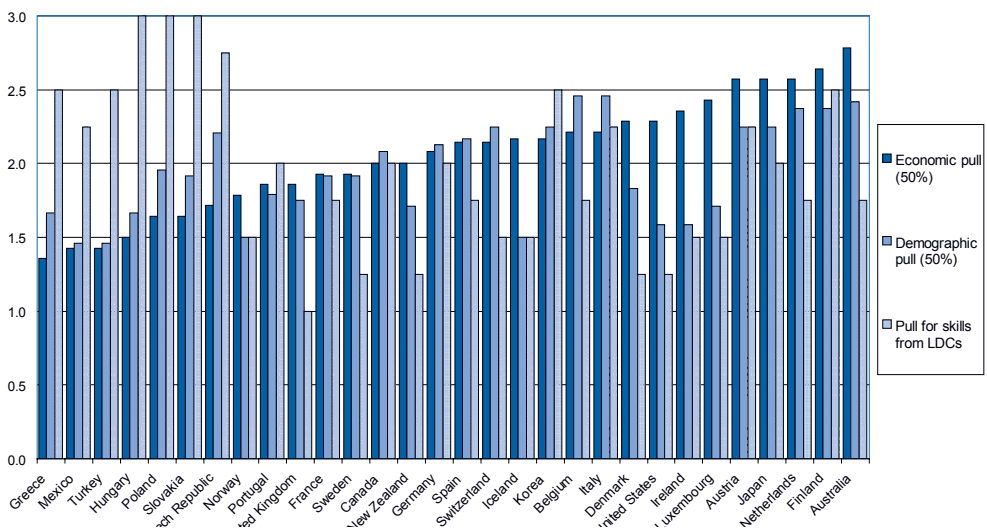
Table 2.17. **Pull factors affecting the source and skill composition of migration: H = high pull, M = medium pull, L = low pull; and ranked by giving economic pull half weight.**

	Foreign from MDCs	Share of global skilled	Domestic college educated	Nursing density	Mode	Average
Hungary	H	H	H	H	H	3.0
Poland	H	H	H	H	H	3.0
Slovakia	H	H	H	H	H	3.0
Czech Republic	H	H	H	M	H	2.8
Finland	M	H	H	M	M	2.5
Greece	M	M	H	H	M	2.5
Korea	L	H	H	H	H	2.5
Turkey	H	H	L	H	H	2.5
Austria	H	M	M	M	M	2.3
Italy	L	H	M	H	H	2.3
Mexico	M	H	L	H	H	2.3
Canada	M	L	H	M	M	2.0
Germany	M	M	M	M	M	2.0
Japan	L	H	M	M	M	2.0
Portugal	L	M	M	H	M	2.0
Australia	M	L	M	M	M	1.8
Belgium	M	M	M	L	M	1.8
France	L	M	M	M	M	1.8
Netherlands	L	M	M	M	M	1.8
Spain	L	M	M	M	M	1.8
Iceland	H	L	L	L	L	1.5
Ireland	H	L	L	L	L	1.5
Luxembourg	H	L	L	L	L	1.5
Norway	M	L	M	L	M	1.5
Switzerland	H	L	L	L	L	1.5
Denmark	L	M	L	L	L	1.3
New Zealand	L	M	L	L	L	1.3
Sweden	M	L	L	L	L	1.3
USA	L	L	M	L	L	1.3
UK	L	L	L	L	L	1.0
Mode	1	2	2	1	2	2
Avgerage	2.0	2.0	1.9	1.9	2.0	2.0
33rd percentile	1.0	1.6	1.6	1.0	2.0	1.6
66th percentile	2.1	2.1	2.0	2.0	2.0	2.3

economic and demographic pull, *i.e.* the top five Australia, Finland, Austria, Japan and the Netherlands. Perhaps, countries where the economic and demographic factors are combined will exert the greatest pull on future migration. However, other lead nations are ranked low on a predominant demographic pull, *i.e.* Luxembourg, Ireland, Denmark and the United States; which also already have relatively robust immigration or are recent entrants into that competition.[34] It is debatable as to whether or not all of these 13 lead countries will see increases of migration.[35]

The middle ranked nine nations on future predominantly economic pull are Belgium, Italy, Korea, Iceland, Switzerland, Spain, Germany, Canada and New Zealand. Only Switzerland also ranks high on a predominance of economic pull, while the rest rank about medium on both predominantly economic and demographic pull. This is an interesting confluence, namely that the predominance of both economic and demographic factors suggest moderate pull. For the most part, these countries are ranked with moderate economic pull, as well as with offsetting demographic, labour force and integration factors that reinforce a mixed-bag of reasons for their overall ranking. At the same time, the United Kingdom is included in this group of doubly moderate-pull nations; yet, it has been one of those most aggressively and successfully pursuing increased migration.

Figure 2.1. **Future migration and compositional pull factors ranked by assigning economic differentials half weight**



Twelve nations rank low on a predominance of economic pull namely France, Sweden, Portugal, United Kingdom, Norway, Czech Republic, Poland, Slovakia, Hungary, Mexico, Turkey and Greece. All but three of these also rank low on predominantly demographic forces namely the East European nations of the Czech Republic, Poland and Slovakia which are ranked moderately on the weighted demographic factor, mostly because they are projected to have slowly changing dependency ratios. Most of these countries are also among those with low rates of immigration today, as well as relatively poor integration. In short, there are reinforcing reasons to anticipate future low levels of pull and associated increases in immigration. The exception here appears to be Norway which has substantial migration, particularly of highly skilled workers, but otherwise has low-to-moderate rankings on almost all pull factors.

A consideration of the impact of pull factors on the future composition of immigration is next. Table 2.17 shows a ranking of countries that averages across the factors of the proportion of the current foreign-born population from MDCs, the host country's relative share of the global pool of college educated labour, the future growth of the domestic college-educated population and the starting density of nurses relative to a benchmark population-determined demand. Eleven countries rank high on the future pull for highly skilled migrants from LDCs, namely Poland, Slovakia, the Czech Republic, Hungary, Finland, Austria, Turkey, Greece, Korea, Italy and Mexico. All of these countries tend to have few MDC migrants, few college-educated domestic or foreign persons and low nursing densities. Another ten countries rank with moderate pull for skilled LDC migrants – overall and for most individual dimensions – namely Japan, Germany, Portugal, Norway, Australia, Luxembourg, Belgium, Spain, Canada and France. The balance of countries ranking low on future pull for LDC skilled migrants are already hosting substantial numbers of these foreign workers, *i.e.* the Netherlands, Ireland, the USA, Iceland, Switzerland, Denmark, New Zealand, Sweden and the UK.

Finally, Figure 2.1 shows the countries ranked by the predominantly economic factor along with their rankings on the predominantly demographic factor and the future pull for skilled LDC migrants. It shows the just described division among the leading nations of those ranked high and those ranked low on the predominantly demographic factor; and the tendency for middle-pull countries to be ranked for moderate pull on both factors. But there is no consistent relationship between moderate-to-high pull ranked nations to exhibit a pull for skilled LDC immigrants, where some like Austria clearly do while Luxembourg does not. These differences are mostly due to how well they are poised to capitalize on increasing numbers of domestically educated workers. At the same time, the seven lowest ranked countries on future pull tend to exhibit an exceptionally strong future pull for skilled LDC workers. Indeed, there is a low correlation ($r = 0.27$) between the rankings for the level and

the composition of future pull suggesting that future policies may reasonably differ on the degree to which compositional changes are sought.

This chapter has focused on migration pull factors in the OECD up through 2030. Our approach has been decidedly schematic, that is we discuss the likely future evolution of different pull factors without assigning any precise number of immigrants as a result of their individual or combined impact. There are, after all, a number of studies that attempt to do just that, so the attempt here was simply to evaluate a range of possible pull effects. By ranking the pull factors into triptiles, we hopefully minimize errors in precision that all projections have, while remaining true to the goal of evaluating the relative strength of changes in pull factors. By contrasting heavily weighted economic and demographic indexes, we have focused on the projected factors of greatest theoretical importance. At any rate, this exercise is similar to most detailed projections of immigration into host countries in that it implicitly assumes a rather elastic supply of foreign migrants.

Other migration scenarios

As a final set of observations, I introduce Table 2.18 which explores personal ruminations on some more general scenarios that might apply to all countries. The scenarios are set out by the strength of five factors that impact on the level and composition of migration: economic, demographic, networks (migrant), domestic skill supply and the social receptivity of the host country. Four scenarios are assumed as outcomes of possible combinations of these five conditioning factors and, in turn, on the subsequent level and composition of migration flows. A plus sign (+) indicates a strong pull of one of the

Table 2.18. **Other migration scenarios**

	Strength of factors					Migration outcome	
#	Economic	Demographic	Networks	Domestic skill supply	Social receptivity	Level of migration	Composition
1	++	++	+++	++	++	++	permanent, mixed skills
3	+	++	+	+	+	+	permanent & active recruitment
2	++	++	++	+	–	+	temporary, skilled
4	–	++	++	+	–	–	restricted to family

factors, while a negative sign (-) indicates the opposite. In all of the scenarios demographic factors, the aging and decline of working-age populations, are assumed to continue to exert a moderately strong pull (++) on future migration, while other factors vary in intensity.

Scenario one assumes ongoing moderately strong pulls from economic differentials, demographic factors and a very strong pull (+++) from migrant networks. It combines a strong pull exerted on skilled migration associated with an assumed weak supply of skilled domestic workers and a climate of favorable social receptivity. Taken together, such a combination of factors favors strong pull with some greater impact on skilled migrants, albeit social receptivity would welcome permanent migrants of both high and low skills. This should lead to moderate to possibly very strong growth in migration. And this is what the foregoing analysis would suggest will be the likely future of migration over the next couple of decades. That assumption is fraught with other possibilities, especially given the recent and sudden change in economic conditions there are other moderate or extreme possibilities (Martin and Lowell, 2009).

For example, scenario two differs primarily in that economic differentials and migrant networks are assumed to exert less pull, while domestic skill supplies and social receptivity are also less favorable than in scenario one. As a result, it would seem likely that the level of migration would be less strong and, to the extent that domestic shortages nevertheless occur, host countries may need to increase recruitment activities in source countries to target immigrants. This is an important modification of scenario one but it presumes an imminent, if somewhat less than ideal, rebound in today's global economy. It also takes the liberty of assuming that permanent migration will remain dominant, but most recent trends suggest that temporary flows have been increasing so that balance could be more mixed.

Scenario three is also similar to scenario one on most factors, except here it is assumed that future social receptivity is adverse to further immigration. That may result as either a failure of a host nation to successfully integrate immigrants which would affect immigrants' decision to move. Adverse social receptivity may cause and/or could grow in the wake of poor integration, or due to increased levels of ongoing migration, or due to a lingering shock of economic recession on the national psyche. Regardless, adverse public opinion might result in the creation of restrictive policies that respond to public perceptions. As a consequence the level of migration would remain fairly high, after all the fundamental pull factors remain in force, but an adverse social or policy climate might change the composition of migration – from permanent immigration toward policies that increase the relative share of temporary migration.

The last scenario, number four, assumes a decline in social receptivity coincident with a collapse of economic pull factors. This, of course, is the one extreme scenario that many observers are wondering about as today's global recession takes hold with ambiguity about its future depth and length (Papademetriou, *et al*., 2008). Poor economic growth and high unemployment lessens the pull of host economies, as well as it reduces the ability of prospective migrants to afford to move. Social receptivity too is often thought to worsen in times of economic downturns because an external supply of migrants creates competition for scare jobs, or at least natives perceive that to be the case. If a recession stays in place long enough and social receptivity worsens, it is likely that migration will slow. It is even possible that net migration would turn negative (emigration exceeds immigration) as it did from the United States during the decade of the 1930s Great Depression.

Conclusion

Will migrants come as long as the door remains open? On the one hand, we have discussed here a strong form of network theory that postulates that other pull factors and policies are almost beside the point; that migrants will come as long as they are not actively barred from doing so. That can, of course, only be the case as long as the potential pool of migrants continues to increase and/or is substantially larger than today's pool of migrants. That is the case and will be the case for the next century, so that even constant rates of emigration should lead to increasing numbers of migrants and, in turn, increasing rates of in-migration (*op. cit*., Lowell 2007). Ultimately, we subscribe to this point of view, *e.g.* that the number of migrants in the foreseeable future is likely to remain large relatively and absolutely (Martin, 2008).

There are other points of view, namely that migration from the less developed nations will decline in the near future as the rate of population growth in the less developed countries has already begun to slow (Schieber, 2005). That trend might be reinforced if immigrants are being admitted primarily to reduce the retirement burden of the more developed nations and, in turn, pay higher payroll taxes. Competition between nations for a slow-growing pool of potential migrants might also reduce the numbers that any one or set of countries might be able to attract. This might lead to a heightened competition especially for the most educated migrants, even as source countries increase their own college enrollment rates. At the same time, the growing per capita income of source countries and increased retention of their own economies might contribute to a declining pool of potential migrants. Given more options of where they might go, which nations will attract the best and the brightest?

The example of migration from Mexico to the USA typifies these contrary ways of thinking. The number of migrants more than doubled during the 1990s and remained very high through the so-called jobless recession until the housing bubble burst in 2006. Will the numbers continue to grow as most of the pull and push factors, particularly robust social networks, remain in place? Already in the mid-1990s a group of scholars suggested that migration from Mexico would begin to decline around the middle of the current decade (Latapí and Martin, 2006). Is it coincidence that the numbers, if somewhat delayed, are now trending down? (Passel and D'Vera Cohn, 2008) The argument for decline begins as Mexico enters into its "demographic dividend" or a period of slower but yet strong growth of working-aged persons without growing dependency ratios. Now its growing economy can begin to generate enough formal sector jobs to employ potential migrants. Many have been skeptical of a scenario of a downturn and a few years do not a trend make – and it would be difficult to say whether or not the migration slow down has been triggered primarily by a loss of economic-pull (housing-bust and job loss [Immigration Policy Center, 2008]) or stepped up local enforcement (less welcoming climate [Pew Hispanic Center, 2007]). Regardless of the trigger, the conjunction of economic and demographic factors in Mexico may be reinforcing the slow down of migration. It only remains to be seen if growth rebounds when or if the economies of both nations pick up; or if migration continues to decline or remains flat. Both of latter these scenarios would support the thinking that econo-demographic factors will coincide to reduce the attractiveness, *e.g.* the "pull," of the United States. It is hard to subscribe to that ultimately optimistic point of view, but the possibility is there.

Immigration in the modern world is often compared with the waves of mass migration that rolled through and just beyond the 19th century; and there must be lessons that we can learn. However the economic and demographic dynamics are significantly different and it is unlikely that the migration phenomenon will play out the same today. Already immigration has evolved through several stages with most all OECD countries experiencing two large migration surges first from the mid-to-late 1960s and then again from the mid-1990s. The nature of the migration and the debate surrounding it has changed markedly during each of these waves, particularly as some countries have switched roles as countries of out-migration to countries of in-migration between waves. It may be that we are entering the final phase of that build up of international migration and that, by 2030, we will enter a more mature and stable migration frontier. Certainly, some time in that distant decade economic differentials will substantially lessen and today's rapid changes in demography will begin to stabilize into a new equilibrium. Until then, migration "pull" factors are likely to remain strong and it remains to be seen whether or not current efforts to rationally manage the phenomenon works with or askew of the flow of international migrants.

Notes

1. At the same time, there have been declining numbers of refugees and asylum seekers. And while it is thought that there may be increasing numbers of illegally-resident migrants, it is not possible to verify that reliably except with data from the United States.

2. The so-called free circulation migration from within the EU is included in long-term or permanent migration.

3. On a global basis most estimates are that 30% to 40% of international mobility is "south-south", whereas a recent World Bank estimates suggests that those "south-south" flows may already be about half of the global flow. See Lowell, 2007; Ocampo, 2006; and Ratha and Shaw, 2007.

4. *Op. cit*., Williamson, 2003, argues rapid population growth in Africa may be one of the greatest potential drivers of future migration.

5. See for example, Office of Travel and Tourism Industries to International Trade Administration, Department of Commerce, 2005.

6. The comparison is not fully apt as EU structural adjustment funds assisted in improving Spain's economic position prior to its inclusion in the Shengan. That is why, for example, some observers call for substantial investment in trade agreements in the lesser developed countries to offset migration pull, *e.g.* from Mexico to the United States. However, the lesson for migration pull is substantially the same, namely that reductions in the income gap reduce the incentive to migrate.

7. The index classifies France, Italy and Spain as "high vulnerability", Canada, Sweden, Japan, Germany, Netherlands and Belgium as "medium vulnerability" and Australia, the United Kingdom and the United States as "low vulnerability". In general, continental Europe faces worse "aging vulnerability" than the Anglophone countries. In Asia, Japan also faces significant vulnerability. See Jackson, Richard and Neil Howe, 2003.

8. For the United States, with near replacement fertility, immigration at current levels is already a significant contribution to labour force growth and meaningful contributions to the problems of aging.

9. This may be the case for the Eastern European EU accession countries into the EU-15 or for Mexico-to-US migration under the North American Free Trade Agreement. At the same time, the Eastern and Mexican cases of trade liberalization may contrast with the earlier EU expansion where the emphasis on economic assistance prior to full accession helped minimize the "migration hump" that followed.

10. An intervening factor may be the number of potential migrants that an immigrant attracts or the "migrant multiplier", *i.e.* the modal number of family and friends who follow them. This is sometimes explicitly incorporated in projections of migration (Lowell, 2006).

11. One econometric model of migration to Europe found no effect of the stock of immigrants in the receiving country on immigration rates. See Hooghe, *et al*., 2008.

12. Of course, future migration is arguably a function of both the population on the receiving side and that in the source country. See Cohen, *et al*., 2008.

13. Immigti = ∑Remigtj * poptj, where the immigrant population in country i at time t is determined by the sum of each source country j's current rate of emigration multiplied by its population at time t.

14. It is worth noting that there is not a strong correlation between official retirement ages and the actual ages at which individuals typically retire. In some countries average retirement age lags as much as five years behind the official age (Luxembourg) and in other cases, average workers retire almost nine or ten years after the official standard (Korea and Mexico respectively).

15. North America has tended largely to be a recipient of foreign students more than a source with a growing but yet small number of Americans studying abroad.

16. The four Anglophone countries – the USA, UK, Australia and Canada – attract more than half of all foreign students (54%).

17. France and Germany provide instruction in English and have redesigned their curriculum to fit in with the more universal bachelors and masters' degree format.

18. IIE's Atlas of Student Mobility, Promotional Activities and Policies (http://opendoors.iienetwork.org/).

19. International Centre for Migration Policy Development, 2006. For example, France and Germany seek to facilitate retention. Australia amended its point system for admitting immigrants to allot extra points to students graduating from an Australian on-shore university. Canada awards points to students who stay to work in Provinces with skill shortages.

20. For example, the elasticities of student flows to the United States for India's domestic per-capita income and enrollments are 0.61 and 0.29, while the corresponding figures are 0.13 and -0.38 for the United Kingdom. This indicates that the more students graduated in India, the more who go abroad (to the USA). From the UK, an increase in the number of students it graduates is associated with an increased retention power (measured by Rosenzweig with measures of capacity).

21. There are different substantive types of tertiary education, as well as colloquial understandings of the concept. "College educated" is a general term including different levels of tertiary completion and, in the United States for example, is colloquially thought to imply at least four-years of post-secondary education. In some contexts, the broadest use of the term tertiary includes at least one year of post-secondary education. For the most part the discussion in this section refers to 3-4 years or more of education in upper level tertiary institutions, *e.g.* ISCED-97 all levels 5 and 6. See OECD, 2004.

22. At the same time, there is a high correlation between the share of the native and foreign-born populations that are tertiary educated ($r = 0.68$).

23. This is a classic stock and flow phenomenon: the percentage of the total adult population with a tertiary education will be a result of the inflow of tertiary-educated youth and the stock of existing adults. During the 1970s the population share of the tertiary educated was substantially improved by the mortality of older adults (who had completed far less than tertiary education on average).

24. The remaining seven OECD countries are: Canada, United States, Japan, Australia, New Zealand, Mexico and South Korea.

25. Ancillary goals of the Bologna process are to reform the educational system to create greater compatibility between the US and European educational systems. Reforms are to facilitate student movement between countries to pursue both study and employment. It is hoped to increase the attractiveness of the European education system to non-Europeans and, in-so-doing, attract foreign students and high-skilled workers. These goals are compatible with the enhancing Europe's potential as an advanced academic research community. If the domestic supply of competitive students decreases or the capacity of the educational system increases, each of these is likely to increase the space potentially available for foreign students within the tertiary education system. The former could result either from inadequate preparation in earlier domestic education, or a declining population of college-age youth. The latter could result from policy changes emphasizing expansion of the education system or from natural growth in existing institutions to match an increasing supply of qualified applicants.

26. We would prefer ages 18 to 24, but did not have those projections available.

27. UN Forestry Division, Forecasting Economic Growth, 2002. Based on UN projections and OECD demographic data, regression analysis was used to predict equivalent baseline projection values for countries left out of UN projection studies (starred in the table).

28. As the overall numbers of young adults will decline in some countries in coming years, it is possible that there will be increased competition across sectors to recruit the best students from each graduating class. This could reduce the overall numbers going into medical professions and it certainly is likely to diminish the proportional production of medical professionals relative to overall population in those countries hit hardest by population aging.

29. The United States experienced a slow down in training in the early 1990s, in part because the accepted wisdom at the time was that there would be surpluses of medical workers created by the spread of more efficient Health Maintenance Organizations.

30. More than 17% of immigrant women in European OECD member countries work in the health sector, albeit that percentage is similar to that for native-born women. However, foreign-born women are highly concentrated in Scandinavia with 32% in Norway, 29% in Sweden, 27% in Denmark and 24% in Finland being employed in that sector (23% in the United Kingdom). See p. 65 in OECD, 2006. International Migration Outlook (SOPEMI).

31. Note that there is a close correspondence between the percentage of the total (male and female) immigrant labour force and the density of nurses in OECD countries ($r = 0.58$), but none with the density of physicians ($r = -0.06$).

32. Family immigration in contrast tends to downplay labour market skills and, partly in consequence, family migrants are less well qualified and often integrate less readily.

33. A significant caveat to this would be if the Lisbon Strategy to increase intra-EU mobility succeeds. Consider that cross-EU (in the former EU15 prior to enlargement), only about 0.1% of the working age population changes its country of residence in a given year. In comparison, about 3% of the working age population in the United States moves to a different state every year. Nevertheless, the US remains a net importer of immigrants and, clearly, increased intra-European mobility would only partly offset declines in the European working-age population. See Ester, Peter and Krieger, Hubert, 2008.

34. The top ranked of these 13 countries have *low* rates of net immigration today and are ranked high (H) on this factor. Hence, they are ranked as candidates for *increased* pull when other factors work in that direction.

35. The index on integration might proxy for sociopolitical willingness to increase migration, but it is a very imperfect gauge as both Luxembourg (high immigration) and Japan (low immigration) are assigned low integration scores.

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Chapter 3

Migration "Push" Factors in Non-OECD Countries over the Long Term

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Introduction

The OECD/IFP secretariat which prepared the "push synthesis" chapter set itself the task of pulling together data from various sources including the World Bank, various UN agencies and specialised agencies, research institutes and OECD statistics. Approximately seventy indicators were developed for all OECD countries and a selection of thirty non-OECD countries. Some of the results are used in this chapter. A large part of the international migration literature focuses on pull factors in host countries. It turned out that the push perspective is somewhat less researched. Finding reliable and comparable data for non-OECD countries has been a challenging task and the difficulty in obtaining comparable data reflects partly the shortcomings of developing countries' statistical offices. This "push synthesis" chapter draws examples – mainly qualitative – from regional notes prepared for the OECD/International Futures Programme by external experts. Their names can be found in Annex B. The experts were asked to give an overview of current and future mobility in their region. They provided a largely qualitative assessment of the likely evolution of factors in non-OECD countries which could influence the movement of people out of these countries, either in the form of intra-regional migration or to OECD countries, through to 2025/2030. The purpose of the push chapter is to give an overview and evaluate the most salient "push" factors in non-OECD countries that will impact on future migration flows, in particular to the OECD area. It was decided by the steering group supporting and guiding the preparations of the experts' workshop The Future of International Migration to OECD Countries that policies would not be discussed. The so-called Push-Pull Model used in our analysis is the most commonly known theoretical concept, inherent in most economic models on migration. This model delineates the fundamental causes of migration whereby economic factors remain the most important push factors, next to demographic and political factors. Migration is viewed therein as a short-term response to differentials between countries and regions but not as a long-term solution.

The "push synthesis" chapter discusses economic and labour market factors first. The income gap between non-OECD and OECD countries, inequalities within countries and unemployment trends will remain strong economic incentives for migration, as will the welfare provision differential between the country of origin and the potential destination country. Turning to demographic factors, the most salient aspect is demographic pressure of particularly youthful populations. In the future strong population growth in some non-OECD regions such as Sub Saharan Africa, North Africa and South Asia will continue. Relative stability of future population growth has been projected for Latin America, China and South East Asia and even some population decline in Eastern Europe and Russia. Tertiary education and training is an important migration driver. A higher return to skills in

many OECD countries paired with few opportunities for higher education in numerous non-OECD countries is an incentive for students to migrate to the OECD area. This is followed by a section on network and remittances effects. Although they are not a pure economic factor it can be a strong predictor of migration patterns as networks reduce costs and improve the exchange of information prior to migrating. Remittances sent by migrants abroad can have a multiplier effect in the source country. Environmental factors can be a strong determinant to migrate in order to escape disasters or to spread (environmental) risks within a household, but its significance in the migration decision is difficult to disentangle from other push factors. It seems to be a secondary factor in the migration decision. Last, Geopolitical factors such as rule of law; voice and accountability; political stability; and absence of fear are significant migration drivers, but future developments are almost impossible to foresee. It is also difficult to untangle them from other push factors. Future flows – temporary or permanent – to OECD countries, especially OECD countries neighbouring politically unstable countries, are volatile. Whenever feasible a brief tabular overview of the factor discussed is given at the end of each section. This broad regional overview attempted in this chapter inevitably masks the possibility that some countries in the region may be different.

The current situation with respect to flows and stocks of migrants in the OECD

About 3% of the people in the world today live outside their country of birth (United Nations, 2005). The inflow of migrants into OECD countries seems to be increasing in recent years. The inflow of permanent type migrants into the OECD area has increased by 5% between 2005 and 2006 (OECD, 2008). Figure 3.1 illustrates that 7.5% of the total population in the OECD area are foreign-born and 4.4% do not hold the nationality of their country of residence.

In roughly half of the OECD countries, the foreign-born population represents at least 10% of the total population (OECD, 2008a). Much of this mobility takes place either within the OECD area or exclusively between developing countries, but in recent times a growing percentage of this human mobility has been taking place between OECD and non-OECD countries (OECD 2007a). The largest shares of foreign-born people living in the OECD area come from Europe, followed by Latin America and Asia (OECD, 2008). For example, in 2007 over 2 million persons of Latin American origin lived in just one OECD country, Spain (Martinez Pizarro, 2008). China accounted for more than 10% of migration flows in 2006, particularly to the OECD's Asian member countries Japan and Korea (OECD, 2008b). Interestingly,

Bolivia, Romania and Poland have experienced the largest increase of emigration flows to the OECD area over the period 2000-2006 (2008b).

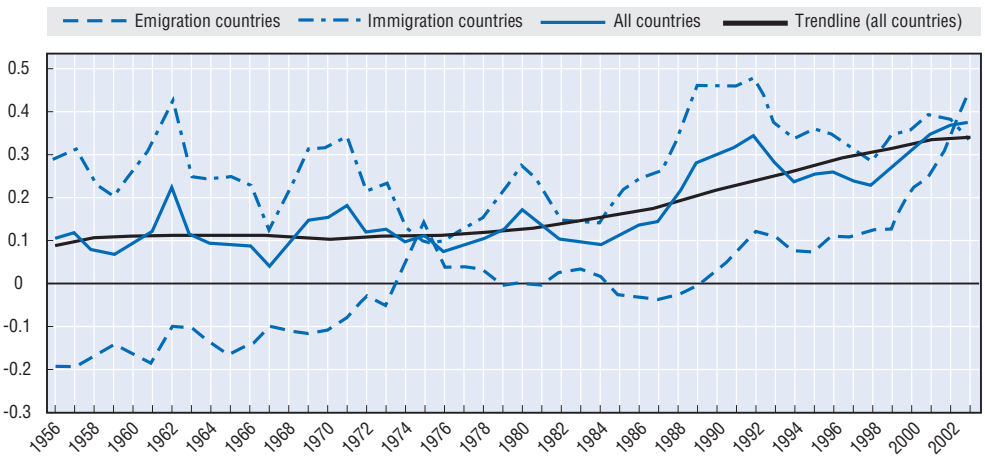
There are two "stylized facts" about where immigrants to the OECD area today come from:

(i) They tend to come from countries in close proximity. For example, Martinez Pizzarro (2008) shows that nearly half of emigrants from the whole of Latin America who left in the 1990s headed primarily to the United States. The main destination countries for Tunisians within OECD countries are France and Italy and for Moroccans the main destination countries in the OECD are France and Spain (Gubert and Nordman, 2008). However, there are also notable exceptions, for example North America is the main destination for West African nationals despite geographic distance (Bossard, 2008).

(ii) Immigrants to the OECD area are from middle-income countries and not the poorest developing countries (OECD 2007a). On average, emigration rates to the OECD are higher among richer developing countries than poor ones. Africa, the continent with the largest number of least developed countries (LDCs)[1], shows low rates of emigration to developed countries and in 2004 there were not more than 7.2 million official African migrants

Figure 3.1. **Net migration rates, traditional immigration and emigration OECD countries, 1956-2003**

Net migration as a percentage of total resident population



Source: Labour Force Statistics, OECD, 2006.

Note: For definition of immigration and emigration countries, please refer to the text.

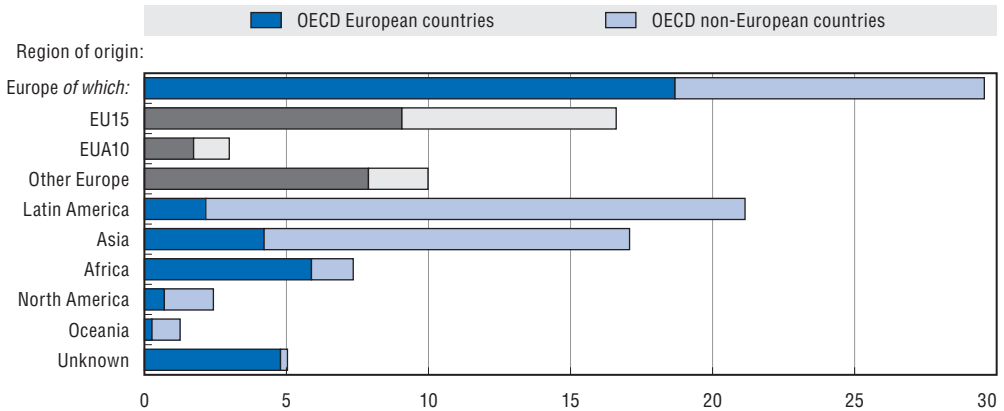
in OECD member countries, a large proportion of them from relatively developed countries such as Morocco (Bossard, 2008). According to Bossard (2008) African immigration is low in comparison with other immigrant groups. In only four European countries were the numbers of migrants of African origin sizeable without constituting a majority by any means: The Netherlands hosts 150 000 Moroccans; 310 000 Moroccans reside in Spain; the United Kingdom hosts 100 000 South Africans, 100 000 Kenyans and 100 000 Nigerians; and Italy where migrants of African origin represent one-third of the immigrant community (of which the largest groups were 155 000 Moroccans).

Figure 3.2 gives an overview of where migrants to the OECD area come from. It illustrates for example that most migrants living in the European countries of the OECD come from other European countries.

A large part of migration is still intraregional and does not cross into OECD countries. For example, Ducanes and Abella (2008) confirm that out-migration from Southeast Asian countries is significant but mainly absorbed in the region.

Some migration movements into the OECD area are irregular and it is thought that this trend will continue (OECD, 2008). Irregular flows are not officially recorded meaning that numbers of immigrants can be much higher than the official figures. Estimates can be obtained after regularisation programmes or by using residual methodology (OECD, 2008). For example, the United States has a sophisticated system of estimating the numbers of

Figure 3.2. **Foreign-born population in the OECD countries (European and non-European), by region of origin (in millions)**



Source: OECD (2005).

irregular migrants residing there. It is believed that those irregular migration flows increase when border control and visa requirements are tightened.

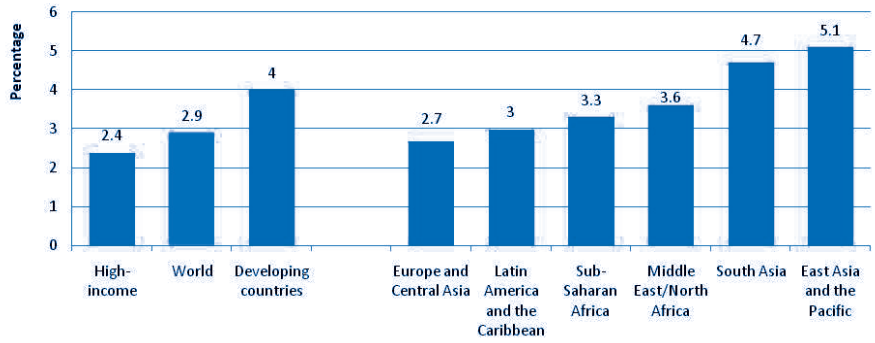
It is difficult, if not impossible, to forecast the scale and direction of future migration, but the indications are that flows from the developing world to OECD countries will increase in the coming decades. They will be influenced to a large extent by structural changes – demographic, economic, environmental, political, labour-market-related, technological, etc. – but also by shifts in developed countries' policy stance.

Key "push" factors in various non-OECD regions and their likely development to 2025/2030

Economic and labour market factors

The evolution of the economic situation is assumed to be a central determinant of migration decision. The comparison of the economic opportunities offered both in the sending and in the potential receiving countries has been extensively studied in the empirical and theoretical literature on migration, which emphasizes the complex and often ambiguous consequences of economic factors on migration. As will be shown, a distinction has to be made between the average economic opportunities offered in the countries and the distribution of those opportunities in each country. In other words taking into account the difference in development is not enough; one has also to compare the inequality of economic opportunities within countries in order to gain a more rounded perspective on economic and labour market push factors.

Figure 3.3. **Projected real GDP growth, 2008-2030**



Source: OECD, based on World Bank Global Economic Prospects, 2007.

Differences in economic opportunities between countries

Economists studying migration such as Sjaastad (1962) consider migration as a type of investment in human capital: the potential migrant weighs between different labour markets in order to maximize lifetime utility after having taken into account all the different costs of migration and comparing them to the returns of migration. In those types of models, a potential migrant is more likely to migrate if economic opportunities are better in the destination country, is less likely to migrate if the economic opportunities in the source country improve and is also less likely to migrate if the cost of migration increases.

Differences in economic opportunities between origin and host countries are captured (albeit imperfectly) by the level of GDP per capita in sending and host countries and unemployment rates in the host countries (the latter being a pull factor). Figure 3.3 illustrates the projected real GDP growth by development level and by major world regions.

The main conclusion of Sjaastad's investment in human capital model is thus very intuitive: migrants will tend to move from poor countries to rich countries (where the economic opportunities are better) and this tendency will increase if the income gap between countries increases. A convergence of per capita trends of developing countries with high income countries should decrease incentives to emigrate. If the income gap between OECD and non-OECD countries does not narrow over time, there is consequently no reason to expect a decrease in the migration pressure of migrants trying to benefit from better economic opportunities in the OECD area. See also Figure 3.4.

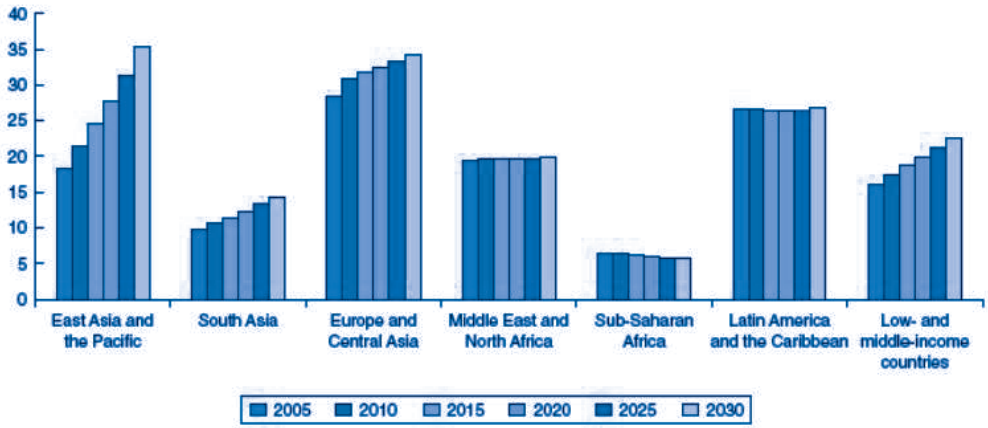
Migration Pressure and Increasing Income Gaps: Latin America and Africa

According to the World Bank (2007) the Middle East and North Africa, Sub-Saharan Africa and Latin America and the Caribbean are not expected to catch up with high income countries in terms of per capita income through to 2030. Migration pressure due to rising income gaps is not expected to decrease for those three regions and may even increase for Sub Saharan Africa. Income differentials will therefore exert considerable pull pressure in the future. Figure 3.4 illustrates future per capita income developments in five year intervals.

Hatton and Williamson (2003) have built an econometric model in which they try to estimate future migration pressure from Africa. They use various scenarios regarding the evolution of income differential between Africa and OECD countries. In their preferred scenario, real wages in the OECD countries and in African countries continue to grow through to 2025 at the same rate as between the mid 1970s and the mid 1990s. The study estimated

Figure 3.4. **Per capita income convergence trends of developing regions with high-income countries, 2005-2030**

Index: high-income countries = 100



Source: World Bank (2007) World Economic Prospects. (World Bank simulations using the Linkage model.).

Note: Ratio of PPP-adjusted per capita incomes relative to high-income average. PPP is fixed at base year (2001) level.

a lower bound of *additional* migration pressure of 0.31 per thousand inhabitants in 2025.

A study by Clark, Hatton and Williamson (2004) on the causes of emigration from Latin America to the United States (which hosted 88% of Latin Americans living outside Latin America in 2000) shows how central the difference in income between Latin American countries and the United States is to the explanation of emigration from Latin America. According to their results, a 10% rise (decrease) of United States (source country) income would lead to a 15% increase of emigration from the source country to the United States. If Latin America does not catch up with OECD countries and in particular with the United States, it is likely that economic driven migration pressure will remain high in the future.

Catching up regions and migration diversion

Migration pressure from slow growing regions is not likely to decrease overall in the future and it is not clear whether this pressure will be directed toward traditional immigrant-receiving OECD countries. As their per capita

income will be growing, other regions, such as East Asia and the Pacific will become increasingly attractive destinations for potential migrants from less developed countries, especially neighbouring countries. Thus, one could expect some of this migration pressure to be diverted from the OECD area to catching-up regions. While in line with Sjaastad's model (1962) this tendency is likely to be fairly small.

With a population of more than a billion, India is at the centre of attention when it comes to South Asian migration, as its migration trends are crucial to the understanding of the migration of the region as whole. Based on OECD projections (see Figure 3.5), India's real GDP is likely to increase by more than 200% by 2030. Indeed, since the reforms in 1991, India has left what had been called the "Hindu" rate of growth of approximately 3.5% per year to reach

Box 3.1. **Migration costs and returns to migration**

Economic models use the terms "migration costs" and "returns to migration" as generics for all the factors that might affect the incentives of an individual in his migration decision. The effective cost of migration paid by the migrant includes visas and transportation. The migration decision is directly affected by the geographical distance between the source and the destination country, as well as by the evolution of technical progress: as travel becomes less expensive, the costs associated with migration become smaller.

Also, as emphasised by Sjaastad (1962), the economic opportunities in the destination country are one of the main determinants of the returns to migration: the returns to migration are higher in a country in which the chances of being employed are higher and in which the wages are higher.

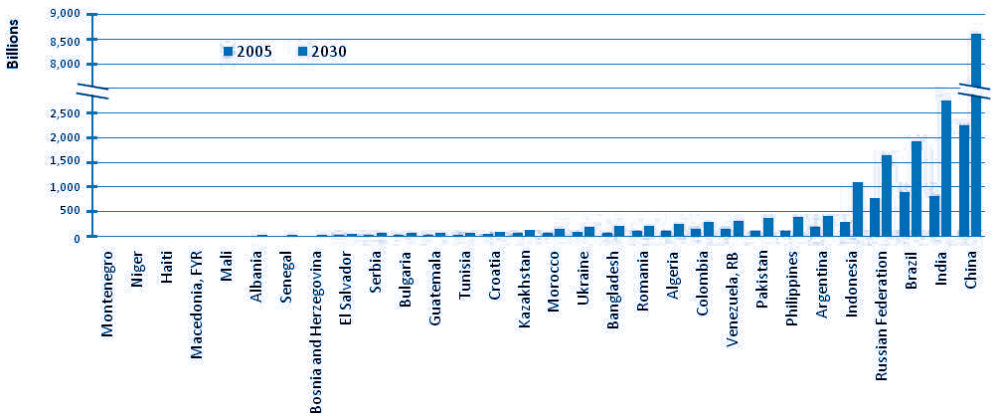
Moreover, the cultural distance between the country of origin and destination is also a part of the costs and expected returns to migration. If the destination country shares, for example, a common language, migration is likely to be easier, both by lowering the psychological barriers to migration and by increasing the migrants' returns. Chiswick and Miller (1999) for example find a strong correlation between an immigrant's earnings and language skills since being able to speak the language of the destination country is a strong determinant of migrants' income levels. Furthermore, if the source and destination country share a colonial link, migration is likely to be straightforward, as migrants' skills are more transferable (and hence more rewarded) in the former colonial power. Two interesting studies, one by Docquier, Lohest and Marfouk (2006) and the other by Gubert and Nordman (2006), show evidence of the positive role of a formal colonial link and of sharing the same language in the migration decision.

Sources: Chiswick B. and T. Hatton (2002); Chiswick and Miller (1999); Docquier, F., O. Lohest and A. Marfouk (2006); Gubert, F. and C. Nordman (2008); Sjaastad, L. (1962).

an average of 6% since then, thereby becoming the second fastest growing country in the world after China. The expected rise of India to the rank of an economic super power is likely to have a major impact on the direction of South Asian migration motivated by economic outcomes: there is a strong chance that the migration pressure from this region to the OECD countries will diminish, with the increase of economic opportunities in the region itself.

By 2030 the Philippines and Indonesia, two major sending countries in Southeast Asia, are expected to reach the income levels that Thailand and South Korea had in the mid-90s for the former and in the mid-80s for the latter. At the time Thailand and South Korea faced a rapid decrease in their emigration rate and became net immigrant receiving countries after having been sending countries (Ducanes and Abella, 2008). One would expect a very strong tendency for those countries' net migration to decrease until 2030 to a point where they stop being net emigration countries, if they follow the trends of Thailand and South Korea. Moreover, Chinese economic growth, if maintained in the future, would allow China to reach Thailand's and South Korea's level of development when they begin to be net immigration countries by the end of the decade (Ducanes and Abella, 2008). This implies that China is likely to become a more powerful immigration magnet in the future, thus diverting currently observed migration flows from Asian countries to the OECD area. Hence, the speed at which Asian countries are growing leads to fast convergence of these countries to the development level of OECD countries, providing both an incentive for the residents of these countries not to migrate and offering new migration opportunities for their neighbouring countries, whose migration flows could increasingly be directed to non-OECD countries.

Figure 3.5. **Projected real GDP (current USD), by country**



Source: OECD, based on World Bank Global Economic Prospects, 2007.

Welfare provisions

It is not only the wage or wealth differential that drives the decision to migrate, but also welfare provision in potential destination countries. The interesting thing about welfare provision is that it is a strong pull factor but also includes a push perspective. Welfare provisions available in the home country form part of the considerations of the potential migrant. In particular, people are concerned about possible unemployment or underemployment in their home country – all of which will affect their income. From a mainstream economic point of view it is more than only income, but their utility that migrants want to maximize. Of course, migrants also compare the amenities (such as universal government-provided medical care and pensions) and disamenities offered by different potential host countries, as stressed by Borjas (2000).

Figures 3.6 and 3.7 show the physician to population ratio and nurses and midwifery to population ratio respectively, thus giving a rough indication of the provision of medical services in a selected number of non-OECD

Figure 3.6. **Physicians**

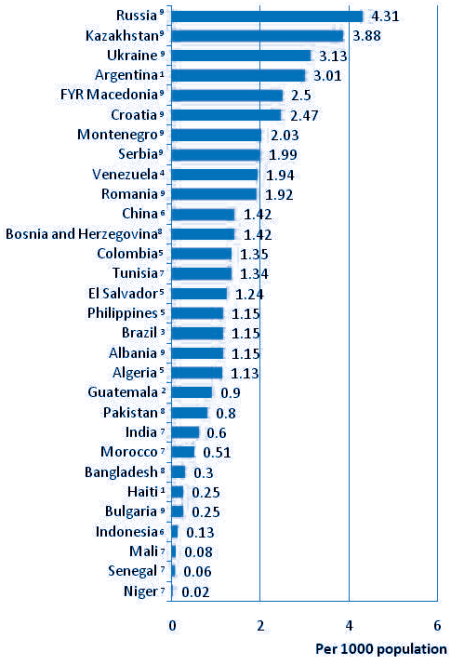
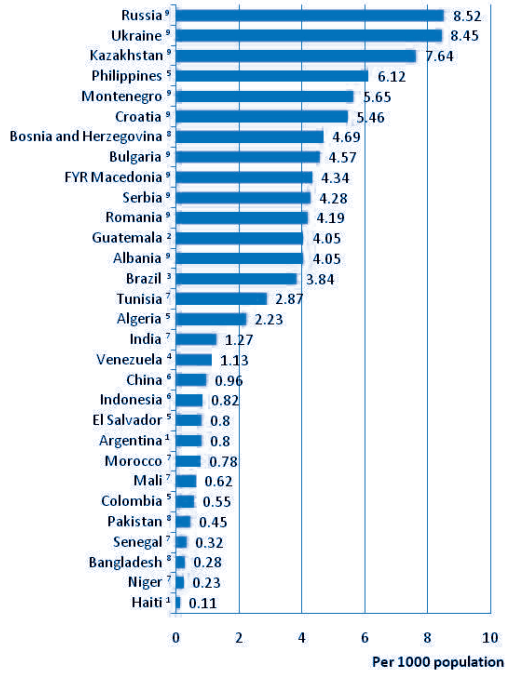


Figure 3.7. **Nursing and midwifery personnel**



Source: OECD, based on WHO Statistical Information System, 2008.

Notes: The latest available year indicated as follow: 1 = 1998, 2 = 1999, 3 = 2000, 4 = 2001, 5 = 2002, 6 = 2003, 7 = 2004, 8 = 2005 and 9 = 2006.

countries. A low ratio means that medical provision is suboptimal. For medical personnel this shortage means poor working conditions and for the general population it means less access to medical personnel. In both cases this may contribute to the decision to migrate. If the provision of medical services is already low the task of building up a health work force will have a time lag as it takes several years to properly train future health personnel. This is if financing has been secured to expand medical provisions. In countries were medical services provision (especially health personnel) is satisfactory they are likely to remain adequate in the near future, provided that no major shock occurs.

Several studies have shown that in the United States immigrant households are more likely to receive welfare benefits than native households. Borjas and Hilton (1996) show, for example, that around 21% of immigrant households benefited from welfare programmes in the United States in the beginning of the 90s while only 14% of the native households did. Of course, first and foremost, the main reason why immigrants tend to utilise welfare programmes more than native born households is due to the fact that immigrant households tend to be poorer and are therefore more often eligible for welfare benefits. This overrepresentation of immigrants in welfare benefits also highlights that welfare benefits may be part of the migration decision. Indeed, Borjas (1999) has emphasized an effect called the "welfare magnet", showing that migrants tend to arbitrage between destinations, giving more weight to the destinations with a better welfare system. See Box 3.2 for a discussion of the welfare magnet effects.

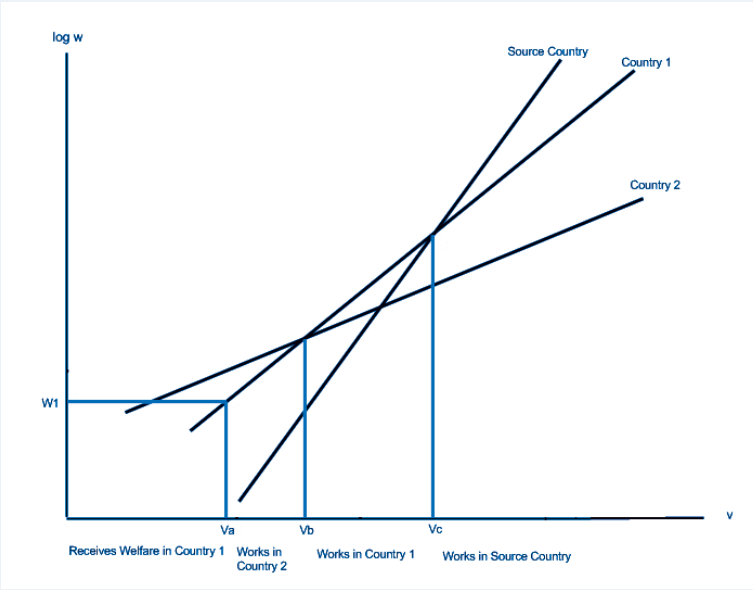
With the increasing wealth of developing countries, it is likely that welfare institutions in non-OECD countries will also improve in line with their GDP per capita. In this case, it would not be surprising to see an evolution of welfare pushed migration, probably with a time lag, following the same pattern as the economic driven one; in other words welfare institutions should improve relatively fast in countries experiencing fast growth and in slow growth countries welfare institutions should develop more slowly. The impact on future migration flows depends on the future improvements of welfare provisions. Large improvements in non-OECD countries are likely to reduce welfare provisions as a push factor for migration.

Welfare provision comparison between the destination and the receiving countries is indeed part of the migration decision, as illustrates the example of migrants' choice of state for settlement in the United States. As mentioned before welfare effects are more important as a pull than a push factor. As a push factor welfare effects are probably playing at the margin of the decision to migrate, as the gap between welfare provision at home and in the destination country might help lower the cost of migration. (See Box 3.1, Migration costs and returns to migration.)

Box 3.2. **The welfare magnet effect**

Borjas (1999) proposes a model to explain United States bound migrants' choice of state to settle in as each state offers different level of benefits. For the sake of argument the 50 states used in the model can easily be applied to the choice potential migrants make between welfare benefits offered in different destination countries. The lines represent the relationship between (the log of) wages and skill (v) in the different countries. It is assumed here that only the destination Country 1 has a welfare system, simply represented here by a minimum wage of w_1. The potential migrant will arbitrate between future income in the different countries. In the case represented in Figure 3.8, if the migrant's skill is under V_a, he will choose to migrate to Country 1 in order to benefit from its welfare system, which offers him better income than if he were to work either at home or in Country 2. Between skill V_a and V_b, he will choose to migrate and work in Country 2, between skill V_b and V_c, he will migrate and work in Country 1, while above a level of skill of V_c, he will choose to stay and work in his source country. Hence, the welfare benefits system of Country 1 induces migration from the Source Country that would not have taken place otherwise: in the absence of Country 1's welfare benefits, the migrant would have chosen to migrate to Country 2 when he had a skill level below V_a.

Figure 3.8. **Welfare magnet effect**



Source: Figure adapted from Borjas (1999).

Box 3.2. **The welfare magnet effect** *(continued)*

A strong motive for migration decisions relies in the comparison of the different welfare systems of the source country and of potential destinations. Indeed, if the Source Country was to introduce some very generous welfare benefits at the level Vc, it can be seen from Figure 3.8 that all the migration taking place between the level of skill 0 to Vb would be prevented, as the welfare system in the destination country would lead potential migrants to choose to stay at home.

Applying this model to the case of the United States, whose states have different levels of welfare benefits, Borjas (1999) shows that migrants tend to be more concentrated in states in which the welfare benefits are higher.

Source: Borjas, G. (1999).

Difference in economic opportunities within countries

By 2030 most people will be better off than they are today in absolute terms, but these developments imply a large deterioration in the relative living standards of a large share of the global population. The World Bank (2007) identified alternative typologies of countries whose citizens could fail to improve or even lose their position in the world income distribution. One group includes low- and middle-income energy exporters, *i.e.* countries whose exports of oil or natural gas exceed 20% of their total value of exports. In 2000 people living in energy-exporting countries made up 15% of the first (bottom) decile of the global income distribution. By 2030, the population share of energy exporters in the poorest decile could rise to 27%. Likewise, agricultural exporters may fall behind by 2030. While in the year 2000 their citizens accounted for just one in ten of the poorest global decile, that share could rise to 23% in 30 years (World Bank, 2007). The global middle class[2] will grow in the future making it the fastest growing segment of the world's population according to the World Bank (2007), but its composition will be different. For many countries, the correspondence between the global middle class and the within-country middle class is quite low.

Self-selection

Borjas (1987) showed that migrants are not a random sample of the population of the source country but are self selected among this population. In the OECD area, for example, the share of people with tertiary education is higher for the foreign-born (23.6%) than for the native-born (19.1%), while the average level of education is higher in OECD countries than in the non-OECD sending countries (OECD, 2008). How can we explain this overrepresentation of highly

skilled migrants? For Borjas[3] (1987), who concentrates on the wage side, it can be shown that the shape of the income distributions, both in the source and in the receiving countries, affect the skill level of the migrant population. In a model in which migrants try to maximize gains, the persons who choose to migrate are the ones whose skills are better rewarded in the destination country than in the home country. Hence, a very strong push factor for migration decision will be the comparison of the returns to skill between potential destination countries. The potential migrant will choose to work in the country in which his skills are most rewarded (*i.e.* if high skills obtain high wage at home, the highly-skilled will stay at home and if low skills obtain better wages abroad, low-skilled migrants will migrate). Also, the more similar the distribution of income between the countries, the less selection occurs. If the level of inequality is exactly the same in the sending and in the receiving country, then no selection occurs and the whole population is likely to benefit from migration. In their study of Latin American emigration to the United States, Clark, Hatton and Williamson (2004) find that their results are in line with the predictions of Borjas' model. They find that the more similar the distribution of income of the sending country to the distribution of income in the United States, the higher the immigration rate. This supports Borjas's theory (1987) of self selection among migrants: Borjas concluded that if the distribution of income of the two countries is similar, it means that the whole population might be willing to migrate, as opposed to a situation in which the income distribution is very dissimilar.

Poverty trap

Foreseeing the evolution of migration from non-OECD to OECD countries triggered by the development of economic push factors requires an understanding of the evolution of income inequalities between countries, but also of income inequalities within countries, as the latter might affect the skill composition of the migrant population. In particular, one might want to assess whether the high economic growth rates experienced by many non-OECD countries will lead to increased equality or increased inequality. Indeed, the "pro poor" growth economic literature digs into the question of the links between growth, inequality and poverty reduction. Ravallion (2004) studied the link between inequality and growth. His findings show that what really matters is the geographical and sectoral pattern of growth, as the people at the bottom of the income distribution are often concentrated in specific occupations and/or regions. In particular, the extent to which growth affects or does not affect rural regions is key to poverty reduction as most poor are concentrated in the agricultural sector. As a matter of fact, growth can mean a widening of income disparities in numerous developing countries, among which India provides a good example. Datt and Ravallion (2002) show that the Indian states which experienced the highest growth have been the ones whose growth was the least poverty reducing, while the growth of the agricultural sector – a

sector central for many poor Indians livelihood – has been lagging behind the growth of many other sectors. As this example illustrates, fast growth is not in itself the key to poverty and inequality reduction. The benefits of the increasing wealth of a country are not evenly distributed among the population and thus, growing fast could lead to a fast increase of income inequalities within the country, with also no strong impact on poverty reduction.

The evolution of income inequality within a country is thus a factor to be accounted for to understand patterns of migration: it affects both the level and the composition of migration. Moreover, the combination of growth and poverty reduction might by itself affect the migration rates. Indeed, by pulling people out of the poverty trap (see Box 3.3), the combined effect of growth and poverty reduction might create a tendency for migration to increase in the short term.

Declining inequality can mute the positive effects of growth on poverty reduction in both the short and long run, increase the risk of social alienation of people at the lower end of the income distribution and perhaps produce counterproductive backlashes against further integration with the global economy. Africa, for example, is likely to exhibit high initial income inequality, relatively high population growth and the lowest per capita income growth among developing-country regions (World Bank 2007). Depending on how these counteracting determinants play out, this could have major consequences in terms of future migration flows to OECD countries.

As we have seen, the patterns of economic motivated migration are likely to change greatly in the next decades with the rise of a new larger global middle class. The probable rise of China and India as destination countries could divert the Asian migration flows from an Asia-to-OECD-countries pattern towards an Asia-to-Asia pattern. Also, while Asian migration to OECD countries is likely to decline in the future, this is not necessarily the case with migration flows from Africa and Latin America to OECD countries.

Table 3.1. **Brief overview of economic drivers:**[4]
Future impact on the pressures to migrate

Region/Future Impact	Increase	Decrease	No change
Latin America			✓
Russia & S.E. Europe		✓	
S.E. Asia and China		✓	
South Asia		✓	
Sub-Saharan Africa	✓		
North East Africa			✓

Box 3.3. **Pro-poor growth, poverty traps and migration**

Studies such as Massey (1988), Hatton and Williamson (1998) or Stalker (2000) have underlined that, contrary to what is expected from the predictions of Sjaastad's (1962) model, it is often observed that migration actually increases with the economic development of the poorest countries. While the model predicts that economic development should push emigration down, as economic opportunities at home become better, it is in fact the poorest countries that generate the fewest migrants, compared to less poor countries. It has been observed for example that the poorer European countries in the 19th century went through an emigration cycle, moving from sending few people abroad to a large increase in emigration while the economic conditions at home improve until poverty is significantly reduced and emigration decreases. This cycle is still observed today and thus constitutes a paradox for the classic economic theory of migration.

One explanation of such a paradox relies on what economists call the "poverty constraint". Although the poorest may want to emigrate, they may not be able to do so. In particular, as detailed in Box 3.1, Migration costs and returns to migration, migration is costly and it is likely that the poorest are not able to cover the costs associated with migration. Hence, the less developed countries tend to send fewer migrants, as their population is simply not able to afford the costs of migration. But as soon as the less developed countries begin to experience higher growth, the average income increases, thus alleviating the poverty constraint and allowing migration for those who were not able to do so before. Faini and Venturini (1994) for example found that the rise of the real wage in Italy was a key determinant of the rise in Italian emigration at the end of the 19th century.

Poverty alleviation due to economic growth has been, especially for the least developed countries, a migration increasing property. This tendency for economic growth to favour migration is also likely to be stronger, the more it is essentially "pro-poor". Indeed, the more inequality reducing the economic growth is, the more it will alleviate the poverty constraint, allowing the poor to finance their emigration.

However, this increase in emigration out of less developed countries facing economic growth is likely to be limited in time, with the increase of economic opportunities at home diminishing the incentive to migrate abroad. This is why the migration cycle related to economic development is often described as an "inverted U shape curve", with migration first increasing with the alleviation of the poverty constraint allowed by the economic development and then decreasing due to the improved economic opportunities offered at home.

Source: Hatton, T. and J. Williamson (1998); Faini, R. and A. Venturini (1994); Massey, D. (1988); Sjaastad, L. (1962); Stalker, P. (2000).

Labour market factors

As discussed in the previous sections, income and its distribution are among the main determinants of migration choice. Many theoretical models and empirical studies highlight the strength of their impact on the migration decision. However, what is not accounted for in most of these models is that from the migrant's perspective, it is not the average income that really matters, but the *expected* income: the migrant contemplates the probability to have access to a higher income abroad. In other words, migrants take into consideration the conditions of the labour market in the destination country, as well as in their country of origin. What really counts is not only that wages are higher in the destination country, but also the probability for migrants to find employment and benefit from those wages. Harris and Todaro (1970) developed a framework of rural-urban migration which showed that rural population will migrate to urban areas as long as *expected* wages are higher, even if a large increase of rural population in cities creates additional unemployment. Applying this model to international migration, the potential migrant compares expected income in country of origin with expected income in the country of destination.

World Bank projections show that in 2030 most workers will be in developing countries and unskilled. The combined workforce of only two countries, China and India, will constitute 40% of the total global workforce by 2030. If these workers cannot be absorbed by their own economy they may seek employment elsewhere. Table 3.2 provides a detailed regional overview.

Two main factors to be taken into account are, first, the differential in unemployment level between sending and receiving countries, which affects

Table 3.2. **Growth in the global labour force 2001-2030**

	All workers (millions)			Unskilled workers (millions)			Skilled workers (millions)		
World region	2001	2030	Growth (% per year)	2001	2030	Growth % per year)	2001	2030	Growth (% per year
World total	3 077	4 144	1.03	2 674	3 545	0.98	403	598	1.37
High-income countries	481	459	-0.16	327	276	-0.58	154	183	0.60
Developing countries	2 596	3 684	1.21	2 347	3 269	1.15	249	415	1.78
East Asia & the Pacific	1 060	1 279	0.65	988	1 163	0.56	71	117	1.70
China	773	870	0.41	740	816	0.34	33	54	1.72
South Asia	632	1 005	1.62	589	925	1.56	42	81	2.27
India	473	712	1.42	441	653	1.36	32	59	2.10
Europe & Central Asia	236	233	-0.04	195	192	-0.06	41	41	0.02
Middle East & North Africa	119	205	1.88	87	144	1.74	32	61	2.25
Sub-Saharan Africa	313	617	2.36	293	573	2.33	20	44	2.74
Latin America & the Caribbean	236	345	1.32	194	273	1.19	42	72	1.85

Source: World Bank (2007).

the probability of the migrant actually finding a job (and thus an income). Second, as Harris and Todaro (1970) emphasize, the minimum wage plays a significant part, as it raises the expected income *i.e.* the prevailing minimum wage of migrants. Even if migrants are highly skilled it can be difficult to obtain formal skill recognition in the destination country. For example, health professionals often have to retrain for long periods of time before they can work in their profession. As has been seen in the section on Welfare Provisions, the social benefits environment also plays its role in migration decisions.

Predicting the level of unemployment in the different regions to 2030 is a pretty risky exercise, especially given that the medium to long term consequences of the recent financial crisis are not clear. However, looking at the different trends in real GDP growth might give a useful insight of what the evolution of the labour market situations in the world's different regions may be. As can be seen in Figure 3.4, the World Bank's projections show that on average, high income countries are expected to face slower growth than the rest of the world. In particular, developing countries have a projected growth per year of more than 50% higher than high income countries', at roughly 4% against 2.4% for the 2008-2030 period. Moreover, taken individually, all regions of the world have a higher expected growth rate than high income countries, ranging from +0.3 points for Europe and Central Asia[5] to +2.7 points for East Asia and the Pacific.

Thus, regarding labour market conditions as a push factor, one could reasonably expect to see a decrease of unemployment in the country of origin (as compared to the level of unemployment in OECD countries), as the labour market conditions are expected to improve due to higher growth rates in non-OECD countries.

Table 3.3. **Brief overview of labour market drivers:**[6]
Future impact on the pressures to migrate

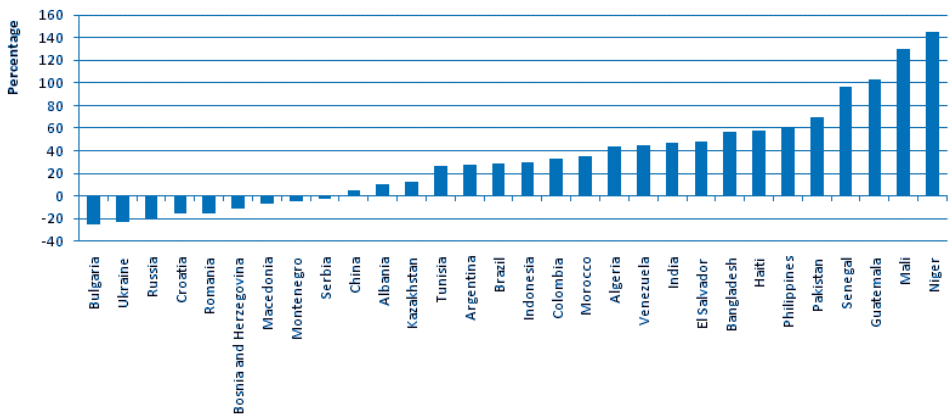
Region/Future Impact	Increase	Decrease	No change
Latin America			✓
Russia and S.E. Europe			✓
S.E. Asia and China		✓	
South Asia		✓	
Sub-Saharan Africa		✓	
North East Africa	✓		

Demographic factors

The emphasis given to economic incentives in migration should not divert from social and demographic determinants of migration. Even in the economic model of Sjaastad (1962), the migrant considers his/her life time utility of migration, thus implicitly placing great importance on the age of the potential migrant and thus on the age structure of the source country's population. Borjas (2000) argued: "Migration is most common among young workers. The human capital model provides a simple explanation for this pattern. Older workers have a shorter period over which they can collect the returns to the migration investment. The shorter payoff period decreases the net gains to migration and hence lowers the probability of migration." The younger the migrant, the larger the gains from migration, as a young[7] migrant will have a high income in the destination country for a longer duration than an older migrant. All things equal, migration incentives are higher for a young person than for an older one.

The demographics of sending countries thus can be a very strong push factor; as the younger the population, the bigger the share of the population that is the most likely to migrate. Moreover, as suggested by Hatton and Williamson (2002), there is another channel through which demography might affect migrations: demographic pressure is creating an indirect push factor by "glutting the home labour market and thus worsening employment conditions there". The increase in the youth population is not only a push factor by mechanically increasing the size of the population from which migrants are taken (the young), but also by increasing the share of candidates for migration *among* this population. As the crowding of their home labour market decreases

Figure 3.9. **Expected variation of the size of the working age population, 2005-2030**



Source: OECD, based on UN World Population Prospects, 2005 revision.

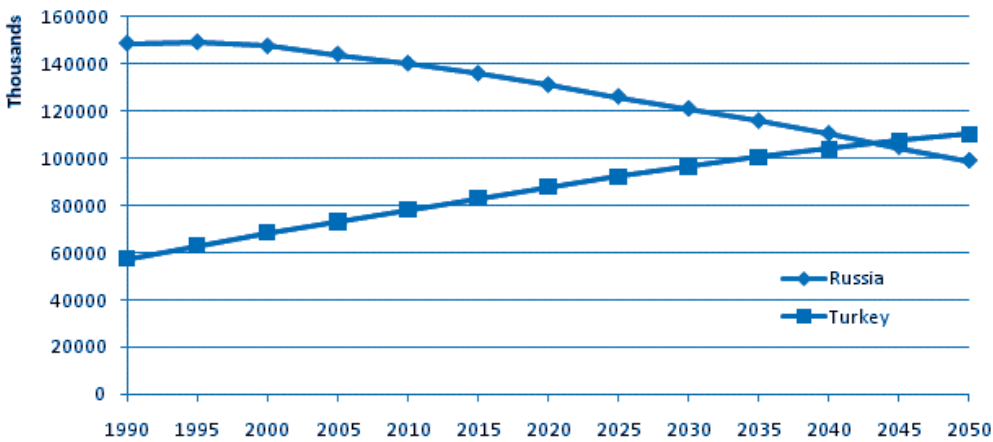
their economic opportunities at home, a higher proportion will be willing to migrate. Indeed, Hatton and Williamson (2002) show that twenty years lagged birth-rates have a strong impact on migration to the United States. Countries that have experienced a high birth-rate twenty years ago (and which now face a large increase in their working age population) tend to exhibit higher emigration rates, all other things being equal. Gubert and Nordman (2008) also report continued demographic pressure in North Africa until 2050.

Demographic pressure appears to be a strong determinant of migrations, pushing potential migrants out of their countries. OECD/IFP calculations based on United Nations (2006) show that the evolution of the working age population (15 to 64 years old) in a selected number of non-OECD countries is likely to differ greatly by country and region. Indeed, as seen in Figure 3.9, the ranking of countries in ascending order of the expected variation in their working age population from 2005 to 2030 shows similar tendencies across continents, with two striking evolutions at both ends. A group of Eastern European countries sees the size of its working age population decreasing, while at the other extreme, a group of (mainly) African countries is facing an increase in the working age populations.

Eastern Europe's demographic decline

Eastern Europe will face a very specific demographic trend, affected in particular by the evolution of Russia's demography. As underlined by Thränhardt (2008), the Russian population has been diminishing in size since the beginning

Figure 3.10. **Population projection of Russia and Turkey**



Source: UN, World Population Prospects: The 2006 Revision.

of the century, losing on average 800 000 inhabitants a year. United Nations (2006) projections show that by 2043, Turkey will replace Russia as the most populated country in Europe (see Figure 3.10). This evolution, combined with Russia's increasing economic opportunities (due in particular to the exploitation of their natural resources) now make Russia more of an immigration magnet than the source of emigration it had been after the collapse of the Soviet Union. The situation is likely to persist in the coming decades.

Population growth in South Asia, North Africa and Sub-Saharan Africa

Pakistan and Bangladesh will have massive growth in their working age population up to 2030, while India's working age population growth, even if smaller, is still expected to be in the order of 45%. This is huge in particular when this rate of working age population growth is related to the actual size of India's population. As pointed out by Khadria (2008), the subsequent increase in the share of youth in the total Indian population might prove to be a "demographic burden": "the vast increase in youth numbers will be a real challenge to all governments at the centre and in the states for their political survival." Emigration pressure from South Asia appears to be the factor to be looked at for the demographic push factors: Today South Asia already represents a fifth of the total world population and the projected increase in its population might prove to be of major importance for future migration flows, due to the sheer size of the population.

The demographic situation of high population growth in Northern Africa is somewhat similar to South Asia. The annual combined population growth of Algeria, Tunisia and Morocco between 2000 and 2010 is 1.31%, between 2010 and 2020 it will be 1.22% and 0.87% between 2020 and 2030 (Gubert and Nordman, 2008).

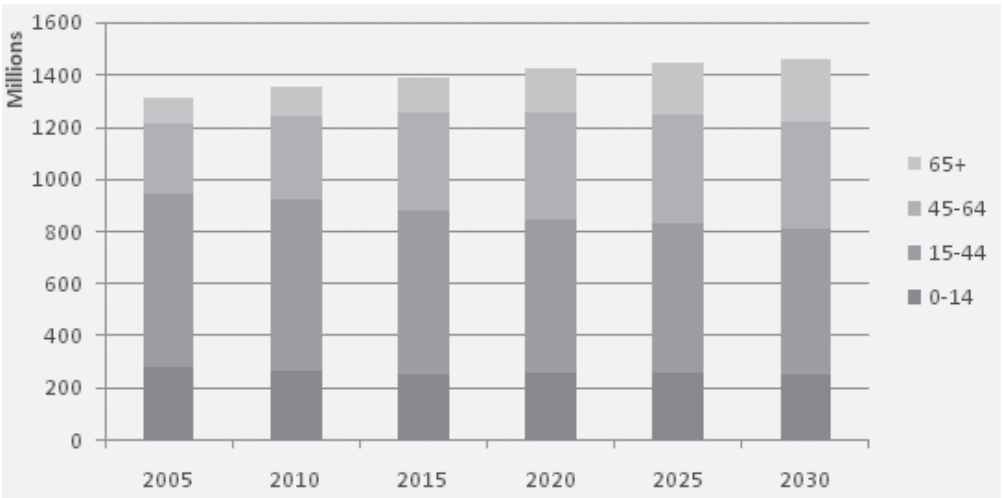
Sub Saharan Africa is also a region to be considered very carefully, as its population is growing at a very fast rate. While the population of Sub Saharan Africa represented only half of Europe's population in 1960, it is now 20% bigger (Bossard, 2008). With 60% of its population aged under 25 in 2005 and population growth rate expected to still be as high as 1.3% in 2045-2050 (2.5% in the period 2000-2005), the demographic pressure out of Sub Saharan Africa is likely to be an important issue for OECD countries. Indeed, Hatton and Williamson (2003) estimate that a 5% rise of the share of the population aged 15 to 29 in Africa would lead to an increase in emigration of 1.3 people per thousand. Hence, even if low in comparison to Indian figures, African migration due to demographic pressure is likely to increase in the coming decades and could be sizeable for a number of traditional African migration receiving countries such as Belgium, Portugal or France, for which 50% of immigrants from developing countries are Africans (Brossard, 2008).

Relative stability in Latin America, China and South East Asia

Not all world regions face the demographic trends described in the previous section. South East Asia and China are facing a very different trend. According to projections, China's working age population will face a very particular situation. Despite being currently the most populous country in the world, its population growth has been low since the adoption of the One Child policy in the 1970s. In fact, its population growth expected to average 0.42% per year to 2030 (Ducanes and Abella, 2008). Hence, while its population is still increasing, it is occurring at a very low rate and the age structure will evolve towards a bigger share of older people. Indeed, as can be seen in Figure 3.11, the Chinese working age population is expected to increase slightly. However, the details of the working age population shown in Figure 3.11 underline the increasing share of the 45 to 64 year olds in the working age population. It is thus likely that demographic pressure on migration out of China will tend to decrease, with the ageing of the Chinese population.

As pointed out by Martinez Pizarro (2008), Latin America and the Caribbean will face a similar trend, with the older adult population's share increasing, while the working age population is expected to increase at a slow rate. Clark, Hatton and Williamson (2004) show that a 5% increase in the share of the 15 to 29 year olds in the population would result in an increase of the migration rate from Latin American to the United States of 20%. However, as

Figure 3.11. **Projected Chinese population, by age cohort**



Source: OECD, based on UN World Population Prospects. The 2006 Revision Population Database.

population growth in Latin America will remain stable or fall, demography will likely not be an important push factor in this region.

Migration driven by demographic change will vary depending on past, present and projected future population growth in the different regions. On the whole, world population growth is slowing down, although at different pace in different regions. In terms of migration pressure, South East Asia and Africa (and in particular Sub Saharan Africa) will face the bigger increase in their young population, the population segment which is the most likely to migrate. Other regions or countries, such as China and Latin America and the Caribbean will experience population ageing which may mean that their citizens are less likely to migrate internationally. Other parts of the world and in particular Eastern Europe, will see their populations tend to decrease, thus relieving the pressure to migrate due to demographic factors.

Table 3.4. **Brief overview of demographic drivers:**[8]
Future impact on the pressures to migrate

Region/Future Impact	Increase	Decrease	No change
Latin America			✓
Russia and S.E. Europe		✓	
S.E. Asia and China			✓
South Asia	✓		
Sub-Saharan Africa	✓		
North East Africa	✓		

Box 3.4. **Student migration in India**

India provides a good illustration of the Cost of Training model of student migration. The Indian education system is often characterised as being relatively poor, in particular when it comes to the higher education system, with the exception of a few prestigious and renowned universities. India is often described as having become a virtual "supermarket" for the world's best international educational institutions, most of which are located in OECD countries: these institutions recruit the best Indian students, who suffer from a lack of high quality schooling institutions at home and thus find it better to get their degree abroad in order to enhance their job opportunities in their country of origin.

Source: Khadria, B (2008).

Tertiary education and training

Education and training is an important migration factor. According to Rosenzweig (2006) the United States, Australia, Canada and United Kingdom alone are admitting over 525 000 students a year, which is close to 40% of the inflows of foreign population to those countries in 2005. Explaining the causes of this type of migration is key to the global understanding of migration and to the building of projections

Theory on education migration

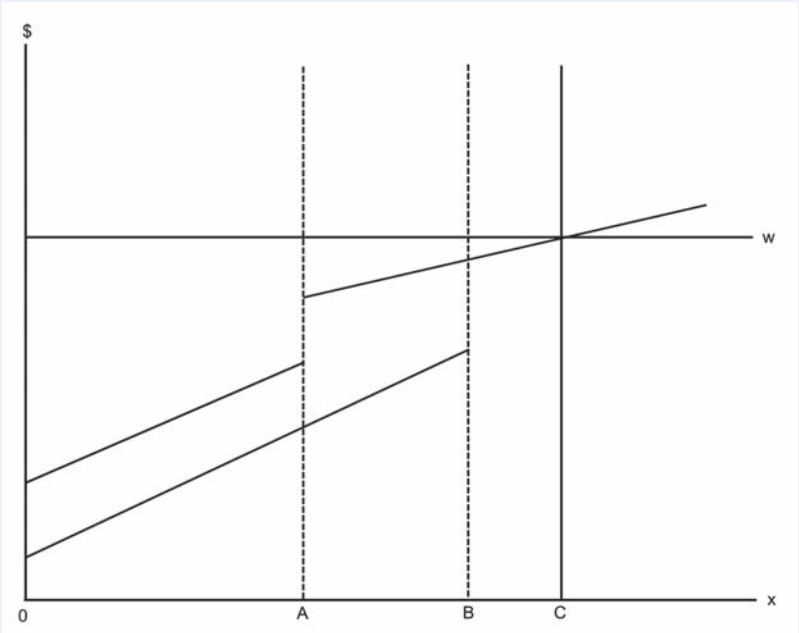
In his study, Rosenzweig (2006) identifies and models two main reasons as to why students migrate. The first one relates to a pull factor: the students are attracted to wealthier countries because of higher returns to skills. Students migrate in order to get access to better returns to their skills in the high income countries. The second reason is a push factor; the education and training migration occurs because the cost of training is simply too high in the country of origin, so students migrate to countries with better quality tertiary education institutions. "High cost" includes the actual university fees (and all other related schooling costs), but more specifically it refers to a situation where there are no tertiary education institutions available or they are of a low quality caused by a lack of financial resources, qualified teachers or due to overcrowding.

There is some empirical evidence of the extent to which students from abroad stay on as migrants in the host country. A cross-section analysis conducted by Dreher and Poutvaara (2005) examines nine OECD countries, Belgium, Denmark, Germany, Japan, the Netherlands, Norway, Sweden, Switzerland and the United Kingdom. They concluded that that the stock of foreign students from a given country of origin enrolled in a given host country is an important predictor of subsequent migration between the two countries.

In terms of policy, the implications of the two models, the "higher returns in wealthier countries" and "high tertiary education cost in poor countries" described by Rosenzweig above are very different. For the source country, the conclusions of these two models in terms of the education policy to be conducted are quite opposite. In fact, if what drives this migration is the desire among students to benefit from a higher quality education infrastructure available abroad, then an increase in the quality and quantity of education infrastructure in the source country should tend to reduce the education migration. See Box 3.5, Constrained domestic school supply model.

Considering that the main motivation for potential migrants is access to higher returns to their skills, improving the quality and quantity of tertiary education institutions in the source country should reduce emigration pressure. There is a strong incentive for students to improve their skills at home in order to gain access to a higher education institution abroad. Students start their

Box 3.5. **Constrained domestic school supply model**



Source: figure adapted from Rosenzweig (2006).

In the constrained domestic school supply model, the total amount of skill in a country X is determined by the equalisation of the marginal cost of increasing the level of skill by one unit with the marginal gain of doing it. The black line represents the marginal curve of increasing skills at home; the blue line represents the marginal cost of increasing skills abroad. Due to school scarcity, increasing skills above OA requires students to go abroad, where they will be learning until the level of skill reaches OC, the point at which the marginal cost of education equals w, i.e. returns to their skills at home. In this case, OA units of skill are produced in the source country while AB units are produced abroad.

If the source country increases its school supply, causing a rightward shift of the domestic schooling cost line, there will be an increase in the production of skills at home, from OA to OB and a decrease of the production of skills abroad from AC to BC.

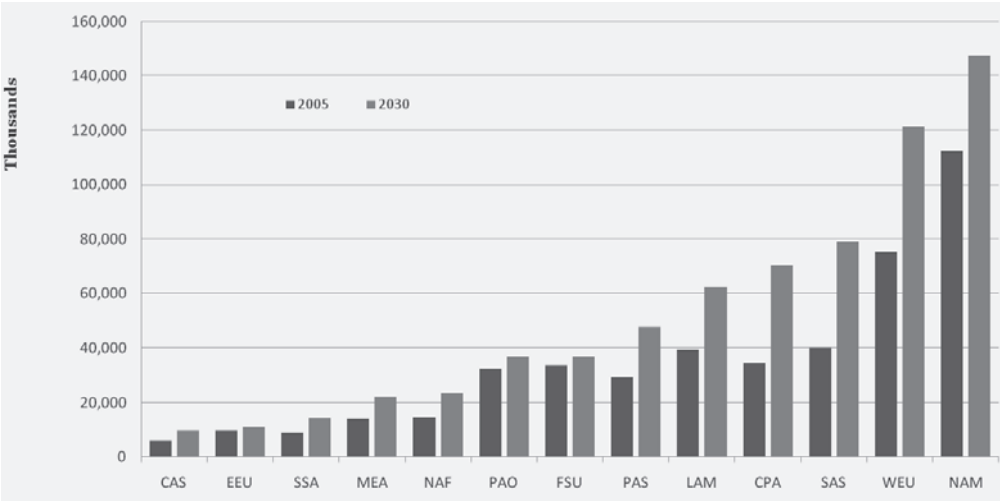
In sum, the constrained domestic school supply model shows that an increase in the supply of schooling infrastructure in the source country should diminish education migration.

Source: Rosenzweig, M. (2006).

education at home and then study abroad for a higher degree in order to ease the transferability of their skills and increase their chances of being permitted to work in the host country. Some OECD countries such as Germany or the United States grant recent graduates from abroad special temporary work permits thereby smoothing the transition from the educational institution to the labour market. An additional motivation to study abroad is the wish to immediately access the labour market in the host countries as many countries allow foreign students to work up to twenty hours per week without special authorisation. This can also at least partly offset the high costs associated with studying abroad and, if this information is known prior to departure, feed into the migration decision. A high student emigration from developing countries leads to an increased Brain Drain, a phenomenon which is elaborated in Box 3.6.

The results found in Rosenzweig's study tend to favour the "Higher returns in Wealthier Countries" model described above. Using data on student migration to the United States, he shows that an increase in the number of universities and their quality in the source country tend to increase student migration to the United States.

Figure 3.12. **Enrolments in tertiary education: Constant scenario**



Source: OECD, based on IIASA projections, 2008.

Note: The "constant transition rate" (short "constant") scenario assumes that no improvements are made over time in the proportion of a young cohort that acquires different levels of education, while fertility, mortality and migration trends follow the median demographic assumptions.

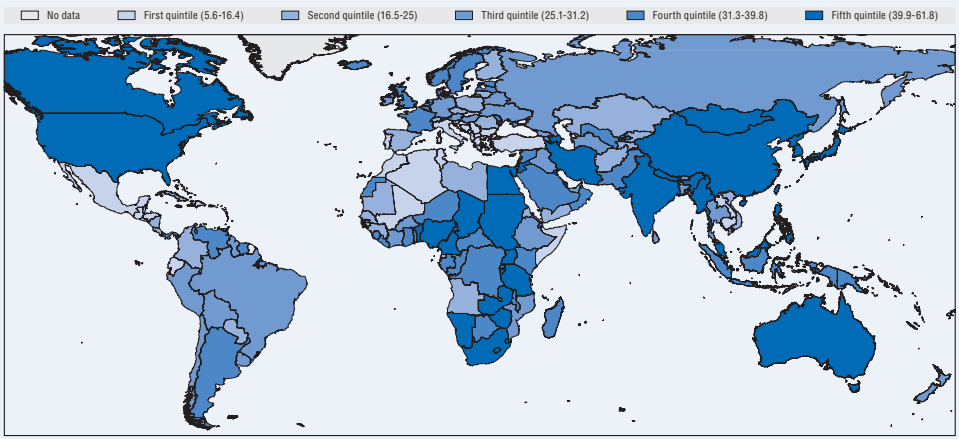
CAS = Central Asia, CPA = China and CPA, EEU = Eastern Europe, FSU = Former Soviet Union, LAM = Latin America, MEA = Middle East, NAF = North Africa, NAM = North America, PAO = Pacific OECD, PAS = Pacific Asia, SAS = South Asia, SSA = Sub-Saharan Africa, WEU = Western Europe.

Box 3.6. **Brain drain**

The question of education and training motivated migration cannot avoid the debate on Brain Drain. As shown in Hatton and Williamson (2004), the migration of tertiary educated migrants represents often a vast share of the total of tertiary educated people in the sending countries. In Algeria, for example, tertiary educated migrants represented 55% of all Algerian tertiary educated individuals in 1990. Even if this example might not be representative of the drain that migration exerts on the skilled population of sending countries, it illustrates that migrants from less developed countries tend to be much more highly skilled than the average population in the host country.

Figure 3.13. **Proportion of emigrants to OECD countries with a tertiary level of education, by country of origin**

Percentage of the 15+ population



Source: OECD (2008).

There are two aspects being emphasized regarding the impact of the brain drain on the sending country. The first one, the "brain effect", sees the brain drain as an opportunity for the sending country, as the migration opportunity increases the incentive to get educated and thus, increases overall education in the country of origin. However, this positive effect is mitigated by the "drain effect", the fact that emigration reduces the proportion of highly skilled "brains" in the home country. For example, Gubert and Nordman (2008) studied Algeria, Morocco and Tunisia and found that the brain drain is responsive to demographic pressure in the origin country and its magnitude increases with the education category. As can be seen in Figure 3.12, the share of tertiary educated migrants among the overall migrant population can be very high for certain countries, showing the potential importance of this "drain" effect.

Box 3.6. **Brain drain**
(continued)

Docquier (2006) re-examines these different points of view and highlights the fact that for the majority of the sending countries, it is the "drain effect" that dominates. Although the "drain effect" is normally a pull factor and causes a reduction in the level of *ex post* average level of schooling in the sending country, Doquier (2006) identifies several mechanisms for which the "drain effect" acts as a push factor for migration. The possibility of emigrating might affect the choice of education of students, who would chose to specialize in fields corresponding to international demand more than to national needs.

Lucas (2004) reports for example that it is the case for Filipino students. This could lead to a shortage in the skills specifically needed by the source country which could in turn affect the country's ability to benefit from its human capital, hence restraining its growth potential and, in turn, providing new incentives to migrate. Bhargava and Docquier (2006) show that medical brain drain which have been shown to have a central role in countries' level of growth, is also caused due to the increase of the AIDS death toll.

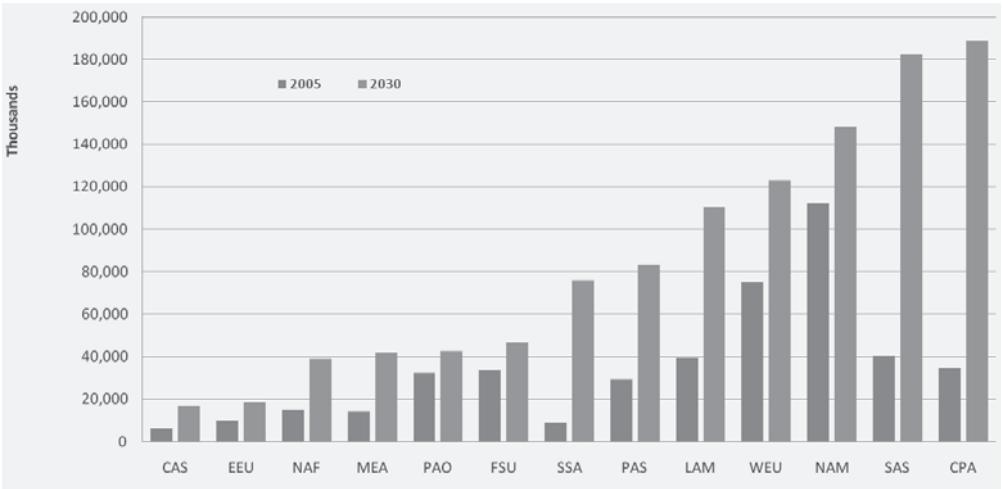
Sources: Bhargava, A. and F. Docquier (2006); Docquier (2006); Gubert, F. and C. Nordman (2008); Hatton, T. and J. Williamson (2004); Lucas, R. (2004).

Education supply in non-OECD countries and migration

If the differential in the returns to skills between OECD and non-OECD countries stays constant, then Rosenzweig's model (2006) would predict an increase in migration with the increase of schooling provisions in the sending countries. A number of scenarios under different assumptions have been projected by the International Institute for Applied Systems Analysis (IIASA) in Austria for future trends in enrolments in higher education trends up to 2030.[9] They range from a restrained "Constant" scenario to an optimistic "American" scenario. The "constant transition rates" (short "constant") scenario (see Figure 3.12) assumes that no improvements are made over time in the proportion of a young cohort that acquires different levels of education, while fertility, mortality and migration trends follow the median demographic assumptions. On the other extreme the "American" scenario (see Figure 3.14) assumes the "convergence to North American transition rates by 2030", in other words the scenario is based on the assumption that all regions experience linear improvements in their enrolment which by 2025-2030 will bring them to the school enrolment levels of North America today. In other words, all children will receive at least some primary education and up to 98% will receive some secondary education. The participation in tertiary education will increase to 55%. The "American" scenario also implies a closing of the gender gap at all levels of the educational scheme by 2030. Located on the spectrum

somewhere between the "Constant" Scenario and the "American" Scenario are two more moderate scenarios. The "ICPD" Scenario (see Figure 3.15) reflects the quantitative goals concerning education that were agreed at the International Conference on Population and Development (ICPD) held in Cairo in 1994. These explicit goals are mainly related to the spread of education in developing countries and refer especially to girls' enrolment. The "Global Trends" Scenario (see Figure 3.16), on the other hand, captures an average pattern across all countries undergoing expansion of school provision. It is a positive scenario which takes into account development according to the global speed of education development. It will probably be realistic in the context of developed countries and more of a wishful thinking scenario for less developed ones. However, it does not capture the specific circumstances of individual countries. Country-level trajectories should not be interpreted as

Figure 3.14. **Enrolments in tertiary education: American scenario**



Source: OECD, based on IIASA projections.

Notes: The "convergence to North American Transition rates by 2030" (short "American") scenario assumes that all regions experiences linear improvements in their enrolment that by 2025-2030 will bring them to the school enrolment levels of North America today. All children will receive at least some primary education and up to 98% will receive some secondary education. The participation in tertiary education will increase to 55%. The "American" scenario also implies a closing of the gender gap at all levels of the educational scheme by 2030.

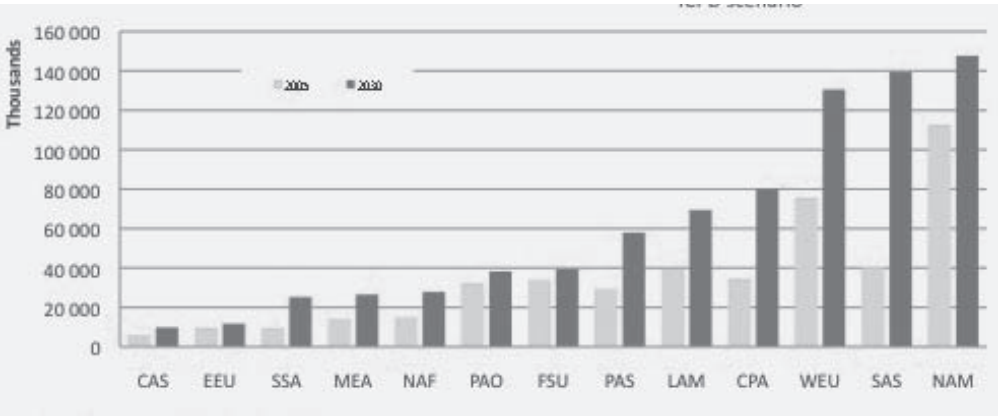
CAS = Central Asia, CPA = China and CPA, EEU = Eastern Europe, FSU = Former Soviet Union, LAM = Latin America, MEA = Middle East, NAF = North Africa, NAM = North America, PAO = Pacific OECD, PAS = Pacific Asia, SAS = South Asia, SSA = Sub-Saharan Africa, WEU = Western Europe.

an anticipation of actual future development, but as indicative of educational development under the assumption that the country converges with global trends, barring discontinuities and external shocks.

Among the scenarios described above, the "ICPD" scenario seems the most likely as it captures in particular the increase in educational enrolments in developing countries. In this scenario, enrolments in tertiary education will increase in all regions. In some regions this increase will be significant. In South Asia, for example, enrolment rates will more than triple, in China & CPA[10] enrolment rates will more than double and in Latin America it will nearly double. According to the "ICPD" scenario the smallest increase will occur in Eastern Europe, Pacific OECD and the Former Soviet Union. One would thus expect the biggest increase of such type of migration pressure to come from South Asia, China & CPA and Latin America, as those regions are the ones that are expected to experience the biggest increase in education enrolments.

Thus, one of the main components that seem to be driving education migration from non-OECD to OECD countries is, as for other types of migration, the difference between the returns to skills in source and destination countries. Gubert and Nordman (2008) found that migration flows of low-educated workers from Algeria, Morocco and Tunisia may be responsive to future trends in origin countries' GDP

Figure 3.15. **Enrolments in tertiary education: ICPD scenario**

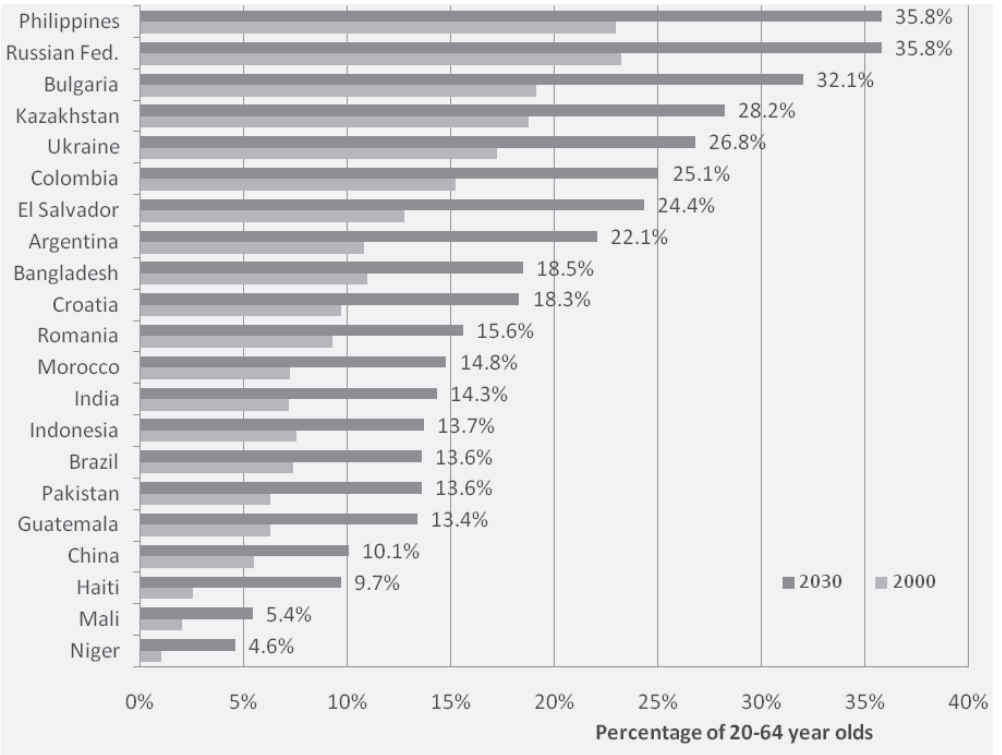


Source: OECD, based on IIASA projections, 2008.

Notes: CAS = Central Asia, CPA = China and CPA, EEU = Eastern Europe, FSU = Former Soviet Union, LAM = Latin America, MEA = Middle East, NAF = North Africa, NAM = North America, PAO = Pacific OECD, PAS = Pacific Asia, SAS = South Asia, SSA = Sub-Saharan Africa, WEU = Western Europe.

per capita but highly educated workers may be less responsive to future trends in GDP per capita. To make projections regarding the evolution of education migration would require a better understanding of the future path of return to skills in the different countries, as well as the evolution of the supply in education. It has been observed that globally the supply of education will be increasing in most non-OECD countries, often in a very significant manner. The poor quality or lack of education institutions in many non-OECD countries constitutes an undeniable push factor. The increase in both the quality and quantity of education infrastructure in non-OECD countries in the future is thus likely to decrease this incentive for migration. However, as explained in Rosenzweig (2006) and in Box 3.5 (the

Figure 3.16. **Enrolments in tertiary education: Global trends scenario**



Source: OECD, based on IIASA Population projections by level of education, 2007.

The global trend scenario captures an average pattern across all countries undergoing expansion of school provision. It does not capture the specific circumstances of individual countries. Country-level trajectories should not be interpreted as an anticipation of actual development, but as indicative of educational development under the assumption that the country converges with global trends, barring discontinuities and external "shocks".

Constrained domestic school supply model), an increasing education supply could also create a larger brain drain, as more "brains" would be trained in traditional sending country. Even if Rosenzweig (2006) finds that the latter effect might be important, it is unlikely that the effect he describes will dominate over time: if non-OECD countries offer students economic opportunities matching the skills they have acquired, the brain drain should not be amplified by an improvement in the education systems of non-OECD countries. As a matter of fact, education has been shown to be central for economic growth (Romer, 1990). It is thus likely that with the development of new schooling, opportunities will also appear for the newly educated cohorts to employ their skills, thus mitigating the drain effect.

Table 3.5. **Brief overview of education and training drivers: Future impact on the pressures to migrate**

Region/Future Impact	Increase	Decrease	No change
Latin America			
Russia and S.E. Europe	✓		
S.E. Asia and China		✓	
South Asia		✓	
Sub-Saharan Africa	✓		
North East Africa			

Network and remittances effects

The section on economic and labour market push factors above showed the importance of "pure" economic factors as strong push determinants of migration flows, but other, "soft" factors can also play a significant role. The impact of social networks on migration, also called the "friends and relatives effect" has been put forward by many studies. Migration networks have been defined by Massey et al. (1993) as "… sets of interpersonal ties that connect migrants, former migrants and non migrants in origin and destination areas through ties of kinship, friendship and shared community origin".

They can affect migration decisions in several ways. First of all, they have an effect which is more on the pull side as indicated by Lowell (2008) in his contribution in this volume. Migration networks reduce the cost of moving, as the potential migrant benefits from better information and thus a smoother integration into the destination country. Moreover, the author underlines that, still on the pull side, migration networks can become migration incentives by themselves, apart from their migration cost reduction aspect. Indeed, networks can structure the job market of the destination

country and "employers may become dependent upon hiring from within immigrant networks and certain industries may become 'colonized' by particular immigrant groups" (Lowell, Chapter 2 above).

Empirically, many studies show the importance of networks in migration decision, as the stock of migrants from a specific country tends to have a positive impact on migration from the country. Hatton and Williamson (2002a), for example, find that the bigger the population of migrants from a particular country living in the United States, the bigger the immigration from this country of origin to the United States. The impact on emigration is strongest where networks include a large number of migrants who have already established themselves in the destination country.

Remittances and Economic Development

Network effects do not only play on the pull side, but the push aspects should also be taken into consideration. Networks not only affect the conditions in the destination country, but also have a direct impact on the situation in the source country. Networks allow for a better flow of information from the destination country to the source country and for a better integration into the destination country. They are also an important source of monetary flows, as migrants send remittances to their kin at home. As can be seen in Figure 3.17, remittance transfers remittances often represent a significant share of countries' GDP.

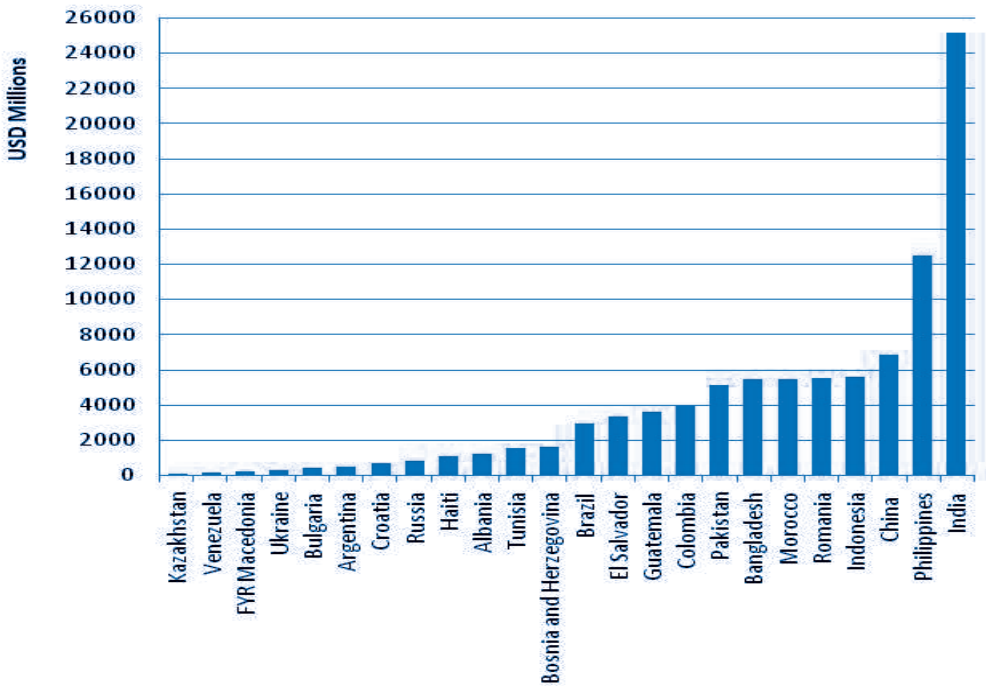
Remittance flows are a major source of external funding for developing countries. According to the World Bank (*Global Development Finance 2008*), they are of primary importance for developing countries and in 2007 they were equivalent to 1.8% of their cumulative GDP. They have a greater weight in the low income and lower-middle income countries, for which they often represent more than 10% of the GDP (for example, 40% of GDP in Tonga and 25% in Lesotho, according to the OECD's *International Migration Outlook 2006*). Thus, remittances are not to be neglected as they are at the centre of migration networks and deeply influence the economic conditions in the source country. Several studies have examined those impacts, many of which are of interest in terms of migration decisions.

First of all, due to the large amount of currencies they represent, remittances are likely to have macro economics impact, both in the short and in the long run. Rapoport and Docquier (2005) provide a review of the different macro economic impacts that remittances might have on the country receiving them. Most studies try to capture the effect migration and remittances have on welfare and try to assess whether the decline in output due to migration is compensated by the remittances sent by migrants. In the short run the multiplier effect remittances are likely to have is emphasized. The strength

of the multiplier effect depends mainly on the way remittances are used. Remittances are likely to have a different impact depending on the country and the consumption behaviour of its citizens. Glytsos (1999) for example shows remittances have a large impact on output for Egypt and Jordan, but a much smaller impact on output in other Mediterranean countries. Indeed, if the remittances are spent on imports, the multiplier effect is likely to be relatively small. However, in this framework, remittances represent an increase in disposable income and thus allow for higher growth for the country benefiting from those remittances. In terms of projection, this could mean that the pull and push aspects of migration networks could go in different directions. Strong networks tend to increase migration on the pull side by decreasing the cost of migration. At the same time, remittances, by improving the economic conditions of the source country, might in time decrease migration incentives.

Other aspects should also be taken into consideration to account for the impact of remittances on migration decisions. At the micro level, as illustrated in Box 3.3, Pro-poor growth, poverty traps and migration, the

Figure 3.17. **Workers' remittance transfers, 2006**



Source: OECD, based on IMF BOPS, 2008.

migration decision is affected by the resources available to the household. The desire to migrate does not induce migration if no funds are available to cover the expenses of migration. Therefore, if a household constrained in its migration decision receives remittances, thereby increasing its income, additional members of this household will be able to migrate. In this case, remittances, by relaxing the income constraint on migration decision in the source country, would favour migration and the push and pull aspects of migration networks would both press in the direction of an increase in migration. However, this is true only if the households receiving remittances are the ones that are the most concerned by poverty traps. This is often not the case as the literature on the impact of remittances on inequality suggests.

Remittances and inequality

As the poverty trap is affecting only the poorest households, it is mainly the wealthier households that are able to send one or several family members abroad, thus benefiting from remittances. Migrants' remittances might therefore increase the inequality of their country of origin, as their remittances constitute an additional income for already better off households. Stark, Taylor and Yitzhaki (1986; 1988) propose a dynamic framework in which they show that the impact of remittances on inequality might follow an inverted U shaped relationship, the inequality increasing dimension of remittances lowering over time. Indeed, a first insight would be to consider the fact that with networks growing in size, migration costs decrease, allowing poorer households to send some of their members abroad in order for the family to receive remittances. Focusing on rural income distribution in two Mexican villages, they found that the income distribution effect of remittances depends decisively on the migration history and on the degree to which migration opportunities are diffused across households. At the beginning of the last century, when few migration networks existed, the cost of migration was very high and only wealthier households could afford to send someone abroad. But with this first wave of migration, migration costs decrease through network effects, allowing poorer households to migrate. In terms of impacts on inequality, this means that during the first period, remittances will increase inequality, but this negative impact on inequalities will decrease with time and with the lowering of migration costs. Therefore, after a time lag, poorer households may also benefit from remittances.

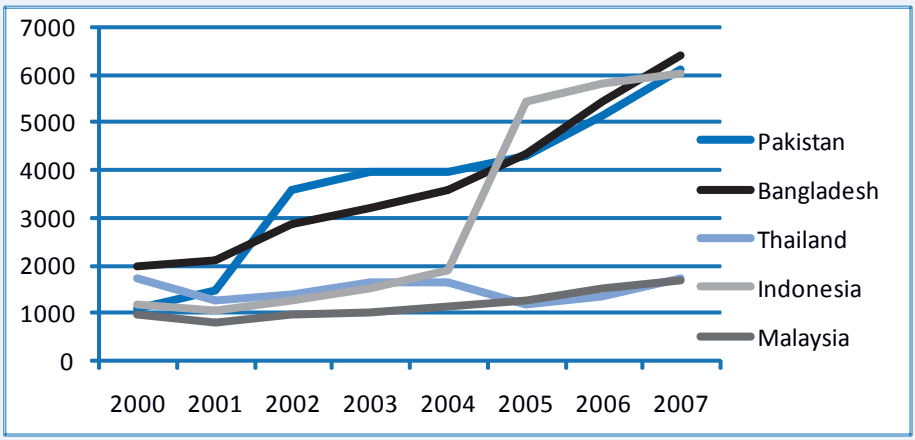
The empirical literature does not always support the conclusions of Stark, Taylor and Yitzhaki's (1986, 1988) model. Docquier and Rapoport (2003) show that a decrease in migration costs through migration networks is not necessary to obtain an inverted U shaped relationship. They build a framework providing an interesting explanation as to why the empirical studies do not confirm Stark, Taylor and Yitzhaki's (1986; 1988) models. Indeed, they show that when taking into account the impact on local wages of migration,

Box 3.7. **Remittance in Pakistan**

Pakistan's total remittances are among the highest in the world. Six out of the top ten destination countries for Pakistani migrants are OECD countries. The top ten destination countries are: India, Saudi Arabia, United Kingdom, United States, Canada, Oman, Germany, Italy, Spain and Singapore (World Bank, 2008). Out of the 159 million Pakistani citizens, the current expatriate population is an estimated 7 million, of which 2.5 million live in the OECD area (Statistical Division Pakistan, 2009). As a result, Pakistan is one of the largest recipients of remittances in the developing world in 2008, after India, Philippines, China, Indonesia, Romania, Morocco and Bangladesh. Remittances in Pakistan often exceed the amount of foreign direct investment and official development assistance. The main sources are still Pakistanis working in the Gulf States which currently experience economic prosperity, such as Saudi Arabia, (28% of total cash remittances) and the United Arab Emirates (17.5%), but also permanent migration countries such as the United Kingdom (7.5%) and the United States of America (12.4%). In comparison, the European Union countries without the United Kingdom make up only 2% of total cash remittances and Canada only 0.5% (State Bank of Pakistan, 2008). Research shows that remittances are predominantly used to meet daily expenses in Pakistan.

Pakistan's total remittances are an estimated 7 billion, out of a world total of over 300 billion remittances (World Bank, 2008). The total Pakistan remittances are estimates, since large portion of remittances flows is remitted through the unofficial but very efficient "hundi" network, in which money is handed over in any major city in the world and delivered to a Pakistani doorstep within two days.

Figure 3.18. **Total remittances selected countries (in million USD)**



Source: World Bank Migration & Remittances Factbook (2008).

Note: These figures represent officially recorded remittances. The true size of the remittances is believed to be larger.

Box 3.7. **Remittance in Pakistan** *(continued)*

Emigrating becomes an even more attractive option when Pakistanis see the amounts of money migrated workers earn. Recognising the important role remittances play, the Pakistan government follows a remittance promoting policy, by making the transfers easier to ensure that remittances flow through official channels instead of unofficial ones. As Pakistan does not exhibit the economic growth figures of China and India, emigrating will remain an attractive option for Pakistan's population and remittances are expected to continue to grow.

Sources: United States Library of Congress (2005); State Bank of Pakistan (2008); Ministry of Economic Affairs and Statistics Pakistan (2009); Steimann, B. (2005); UN Population Statistics (2008); World Bank (2008).

initial levels of inequality are of great importance in determining the impact of remittances on inequalities. When inequality is high, local wage adjustment and remittances' effects on inequalities tend to reinforce each other, but may have opposite effects when initial inequality is low.

Future trends

Network effects and in particular remittances, appear to be very important in determining migration patterns. In the short run, networks is one of the key pull factors by lowering the cost of migration. On the one hand, from the push perspective, the impact of networks is more ambiguous. On the other hand remittances might permit higher economic growth for the country of origin, thus decreasing the incentives for migration. A good example of a sending country government's strategy to engage with the diasporas is India. The Indian Government's recently established Overseas Indian Facilitation Centre (OIFC), designed as a one-stop shop for the Indian Diaspora, promotes the use of investments by Overseas Indians, including innovative investments and policy initiative. Conversely remittances have a very ambiguous impact on inequality and thus, on the selection of migrants from the source country (see above, Economic and Labour Market Factors, page 144, for a more in-depth discussion on selection). The characteristics of migrating households are likely to evolve through time, with the poorer households becoming more and more financially able to cross borders.

In the future, two trends will become more apparent. In countries where networks are already well established any push effects will be immediate and are likely to remain strong in the future. In countries were networks have to build up it takes time before any effects trickle through to the source country.

Environmental factors

Most classical theories on migration tend to disregard the environment as a driver of migration.[11] Dun and Gemenne (2008) confirm that there is currently no consensus on definitions of environmental migration and the resulting variety of terms used is not just confusing but unhelpful. The main reason for the lack of definition of environment-induced migration is, according to Dun and Gemenne (2008), linked to the difficulty of isolating environmental factors from other drivers of migration. Another obstacle lies in the confusion of forced versus voluntary migration: Environmental migration commonly occurs where there is a slow-onset environmental change or degradation process (*e.g.* desertification) affecting people who are directly dependent on the environment for their livelihood. When environmental degradation is a contributing – but not key – factor it becomes uncertain whether such migration can be called environmental migration. According to the UNHCR (2002) approximately 24 million people have fled because of famines, floods and other environmental disasters.

Variations in average environmental conditions

Climate change, according to the scenarios elaborated by the Intergovernmental Panel on Climate Change (IPCC), will have two main characteristics. The first one, discussed in this section, concerns the evolution of the average environmental conditions faced in the different regions of the world and the second characteristic, an increase in volatility, will be discussed in the next section. In the future, an increasing number of people worldwide will experience more extreme weather events, sea level rise and/or more intense weather-related hazards. The average temperature, as well as the amount of precipitations, is expected to increase in six different scenarios elaborated in the IPCC report.

Climate change is therefore a probable source of incentives to migrate from non-OECD countries to the OECD area. Indeed, as analysed by the IPCC (2007a), non-OECD countries are going to be the most affected by climate change:

> Africa is likely to be the continent most vulnerable to climate change. Among the risks the continent faces are reductions in food security and agricultural productivity, particularly regarding subsistence agriculture […], increased water stress […] and, as a result of these and the potential for increased exposure to disease and other health risks, increased risks to human health […]. Other regions also face substantial risks from climate change. Approximately 1 billion people in South, South-East and East Asia would face increased risks from reduced water supplies […], decreased agricultural productivity […] and increased risks of floods, droughts and cholera […]. Tens of millions to over a hundred million people in Latin America

> would face increased risk of water stress […]. Low-lying, densely populated coastal areas are very likely to face risks from sea-level rise and more intense extreme events […]. The combination of land-use changes and climate change is very likely to reduce biodiversity substantially […]."

To give an example, Ducanes and Abella (2008) estimate that in Indonesia's ports of Jakarta, Palembang, Surabaya and Ujung Pandang, 700 000 people might be vulnerable to flooding. Khadria (2008) reports that three countries alone – Pakistan, Bangladesh and India – are predicted to face approximately one third of the projected global threat from flooding occurring in the future.

Gubert and Nordman (2008) point out that water scarcity will be particularly severe in Algeria, Morocco and Tunisia leading to problems with local food production and economic development by 2025 unless the region will be wealthy enough to apply new technologies for water use, conservation, or recycling.

The increase in the mean temperatures can be interpreted as a decline in the average economic conditions of the country: poorer harvest, increased water stress, not to mention increasing risk of floods for coastal cities. In terms of the economic model described in the section above on economic factors, this decline would translate in a decrease of the utility procured by staying in the affected countries. Due to more difficult average climate conditions, the average economic opportunities offered in the country of origin would worsen. In particular, the effect of climate change on purchasing power is not to be neglected: with lower agricultural productivity, agricultural prices would tend to rise, affecting the economic well being of both urban and rural populations. Climate change is thus likely to create a new kind of migration although it may not be easily distinguishable from economic or demographic push factors.

Figure 3.19 shows the projected exposure of a selection of non-OECD countries to coastal flooding. OECD projections of the estimated 147 million people exposed to coastal flooding worldwide in 2070-2080 found that the highest risk countries among the non-OECD countries studied are India, China and Bangladesh.

Variation in the occurrence of extreme environmental events

The second characteristic of climate change elaborated by the Intergovernmental Panel on Climate Change (IPCC) will be an increase in volatility. It is expected that the occurrence of extreme events will increase with climate change. Certain parts of the world will become less viable places to live due to unreliable food and water supplies and growing severity of floods and storms.

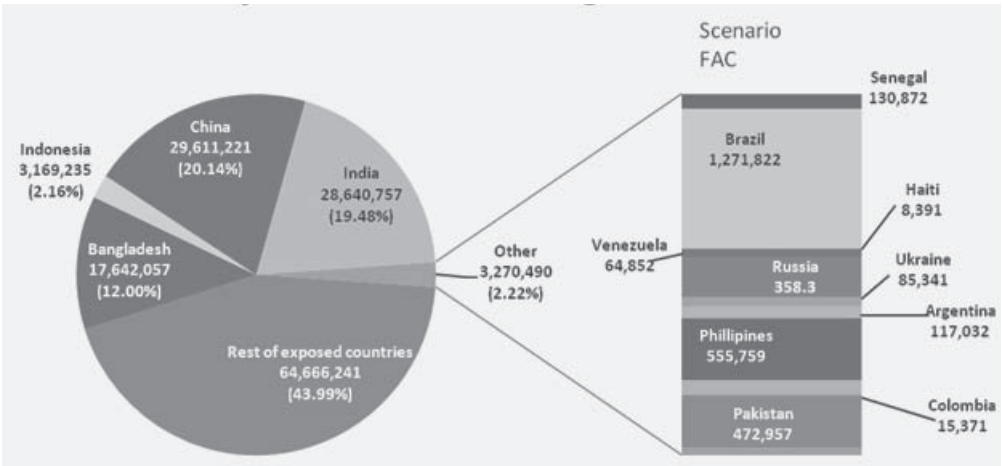
Environmental unpredictability could constitute by itself another channel through which climate change might affect migration patterns. As underlined

by Stark (1991), the main motives of migration emphasized in the economic literature are strictly economic ones: differences in (expected) income and wages between countries, as well as returns to education differential, motivate the decision of an individual maximizing his or her own expected life time income.

As already suggested in the section Network and Remittances above, migration is not necessarily an individual decision: the decision to migrate can be taken by a household as a whole more than by an individual (Borjas and Bronars, 1991). Rosenzweig and Stark (1989) show that the migration decision is typically a decision taken at the household level, as it can be a very effective way to cope with the risk faced by the household. For this reason, the migration decision is very likely to take into account the needs of the household, creating new incentives for migration.

Environmental risk will be more and more part of the life of households in future decades. In particular rural households' harvest yield will become more unpredictable due to more variability in weather conditions and more frequent extreme conditions such as droughts or floods. These unanticipated shocks change the incentives of the potential migrants in a different manner than the change in the average environmental conditions does, as it is not only the mean weather that will change with climate change, but also its variability, not only creating a worst situation for the household, but also a

Figure 3.19. **Projected coastal flooding in 2070-2080**



Source: OECD, based on Environment Working Papers No. 1, 2007.

Notes: An estimated 147 million people (representing 5% of world population, it is equal to 100% for the purpose of this graph) are exposed to rising sea levels, storm surges and subsidence.

more risky one. Climate change is not only about "better" or "worse" average climate, but also about the variability of the meteorological conditions. For a rural agricultural household there is a difference between having some days of rain which would be good for the crops, to having only one day of very heavy rain after a period of drought which could entirely destroy the crops. Even if the average conditions are the same (*i.e.* the same amount of rain fall during the year), it is very important to also take into account the variability of those conditions, as they are very important for rural households whose income is directly related to meteorological conditions.

Rosenzweig and Stark (1989) explained how the migration of one or several members of the household can help reduce the risk for the household as well as smooth its consumption (see Box 3.8 for more details). The increasing risk due to climate change faced by the households (and in particular of the large numbers of rural households prevalent in many non-OECD countries) will change their migration behaviour. Thus, their incentives to send some of their members abroad would increase in tandem with the future increase of vulnerability to climate change induced migration.

Box 3.8. **Migration and weather variability**

Rosenzweig and Stark (1989) propose a model explaining the migration of brides to their husband's household as a way to cope with a risky agricultural environment. Indeed, as they write: "A distinguishing feature of the agricultural sector is that income risk has a strong spatial dimension. As a consequence, the pooling of risks entails the transfer of funds or resources across space."

Basic portfolio theory implies that one can reduce the risk of the portfolio just by holding imperfectly correlated instruments. From the household perspective, this means that a reduction of environmental risk can be achieved by making some members of the household migrate far enough not to be affected by the same environmental shock as other members of the household who stayed in the region of origin. The rationale behind this is that floods or droughts are not likely to happen at the same time in different regions or countries. Migrants faced with such shocks would be able to compensate for the income loss of their household, while the reverse is also true if it is the migrant which is affected by an environmental shock as the migrant's household of origin can give support to weather the shock.

For this reason, in a situation of increased environmental uncertainty, the incentives for some members of a household to migrate in order to spread household income risks are likely to increase.

Source: Rosenzweig, M. and O. Stark (1989).

It is generally accepted that increased natural disaster and chronic environmental degradation due to climate change will induce population movements but the magnitude and direction of future flows is problematic to foretell as there are few comparable past events on which future behaviour can be based. The impact of environmental factors on the migration decision over the coming decades will increase, but for OECD member countries this push factor alone is likely to be less significant compared to other push factors discussed above. People affected by environmental hazards are likely to stay within the county because of the high cost of moving further away and/or return home quickly after a disaster. Affluent people affected by environmental degradation might decide to move further away, possibly to OECD countries. Overall, the impact of climate change on migration will mostly be *indirect* by stunting the capacity of some key growth sectors such as tourism or agriculture to generate growth (Gubert and Nordman, 2008). In brief, environmental migration is a new type of migration and, even if small in observed magnitude so far, it should not be neglected as its importance could increase in the future.

Table 3.6. **Brief overview of environmental drivers: Future impact on the pressures to migrate**

Region/Future Impact	Increase	Decrease	No change
Latin America	✓		
S.E. Asia and China	✓		
South Asia	✓		
Sub-Saharan Africa	✓		
North East Africa	✓		

Geopolitical factors

Geopolitical factors, understood here to include Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law and Control of Corruption, in line with Kaufmann, Kraay and Mastruzzi (2008), are strong determinants for migration. To give a few examples, Shami (1999) underlines that Lebanon, Palestine and Jordan's wars and instability were central in the mass migrations from those countries to their Gulf States neighbours. For Africa, Hatton and Williamson (2003) find that civil war is the most important variable explaining refugee displacements across borders. For Latin American, Clark, Hatton and Williamson (2004) find that civil wars increase migration from Latin American countries to the United States by about 22%.

Indeed political instability and its evolution will be part of migration patterns for the coming decades. Khadria (2008) emphasises that although India has experienced relative political stability in the past this may not remain true for the next decades. Nearby Pakistan and Bangladesh, for example, both share political instability and a military regime. As a matter of fact, India, Pakistan and Bangladesh fare badly on corruption in the Transparency International corruption index for 2008. India is placed in 84th position, Pakistan ranks 134th and Bangladesh is in 147th position. Geopolitical factors are thus likely to be a major push from those countries, as Khadria (2008) highlights; polity and governance are expected to be important migration causes. In South East Asia, Ducanes and Abella (2008) highlight that in the Philippines two long running armed conflicts (the conflict with the Muslim separatists in Mindanao and the conflict with communists insurgents) have displaced 3.3 million people overall within the country during their worst phases. Bossard (2008) emphasises that the great number of refugees of West Africa is mainly due to poor people fleeing in emergency situations.

Geopolitical factors are push factors out of non-OECD countries to OECD countries as OECD countries are generally perceived to be safe and stable. According to Gubert and Nordman (2008), lower degrees of political rights in the country of origin create emigration incentives. The migration literature highlights the fact that this type of migration – refugees – is often regional and temporary. In Africa, the continent which receives the most refugees in the world with 2.7 million, refugees remain primarily in the region because migrants fleeing from these type of emergency situations are often poor and tend to go to neighbouring countries. Hence, "the numbers of people who had the means to seek asylum in developed countries was and will stay marginal" (Bossard, 2008). Also, according to the same source return migration is high and few refugees change status and stay in the long-term.

Geopolitical trends are highly unpredictable, making it difficult to formulate accurate predictions. What can be said with some certainty is that migration pressures caused by geopolitical factors are at the moment relatively modest for most OECD countries as most people do not cross the borders or at least, they remain in the region, but this push factor is not likely to decrease and can be of great concern in the future. OECD member countries, such as Mexico, Turkey and South European OECD countries, which are located near politically instable countries, may be more susceptible to become destinations for migrants leaving for geopolitical reasons.

Conclusion

Will people continue to migrate? Will they continue to choose the OECD area as their destination or will other regions or countries become more attractive in the future? This chapter discussed the so-called push factors that contribute to people's decision to migrate. Two things have become clear: A combination of push factors are feeding into the decision to migrate from non-OECD countries and at times it is difficult to separate the relative importance of the different push factors at work. This chapter has identified that the principal push factors driving migration from non-OECD countries are demography as well as the economy and the labour market. They are linked in so far that population growth requires economic growth in order to create new jobs for a larger population and whenever they are not aligned it creates a push incentive. The other push factors discussed in this chapter, education and training; network and remittances; welfare effects, environmental factors and geopolitical factors often constitute add-on push incentives. For example, the decision to study abroad is also closely linked to consideration of how and where to maximise returns to skills and the level of welfare provisions is habitually tied to GDP. Environmental factors and geopolitical factors are difficult to extrapolate from the principal push factors mentioned above. For example, political unrest, (civil) wars or large-scale environmental disasters often go hand-in-hand with economic decline making one of them the contributing, but not key factor, triggering migration.

Income differentials between OECD and non-OECD countries will continue to exert considerable push pressure in the future although the directions of flows may change to include alternative non-OECD country destinations which will have experienced high economic growth such as China or India.[12] A new, larger global middle class will appear in the coming decades but inequalities within countries may not decrease.

World population growth is slowing down. In the near future there will be considerable disparities between regions. In some regions, notably Sub-Saharan Africa, North Africa and South Asia, population growth will continue in the years to come until the demographic transition is completed. In these regions demography will remain an important push factor.

At present, the small numbers and/or poor quality of education institutions in many non-OECD countries constitute a push factor. It has been observed that globally the supply and quality of education will be increasing in most non-OECD countries in the future which is essential for economic growth and development. This positive development is thus likely to decrease the incentive for migration.

The chapter on push factors has also demonstrated that the decision to migrate takes into account the needs of the household, thereby creating new

incentives for migration. Remittances are used as a coping mechanism to complement fluctuating income but remittances do not necessarily reach the poorest segments of societies. Network effects and in particular remittances, appear to be key in determining migration patterns, a trend which will continue in the future.

Potential migrants consider welfare provisions available in the source country and in the potential host country. When GDP per capita increases in non-OECD countries it is likely that their welfare institutions will improve accordingly thereby reducing the importance of welfare considerations as a push factor.

Geopolitical and environmental push factors, although difficult to distinguish from other push factors, are likely to become important in the future, although for the OECD area, they are likely to remain of relatively little concern as migrants tend to stay in their country or the region. The exact magnitude and flows caused by geopolitical and environmental push factors are difficult to forcast due to its volatile nature. Moreover, whether to recognise and admit political or environmental refugees is a policy choice.

What has become clear is that more data is needed to analyse current migration drivers and to project future trends. The decision to migrate is based on complex interactions of push and pull factors. Considering push factors alone will be insufficient to make predictions about future migration patterns. Chapter 2, "Immigrant 'Pull' Synthesis Factors in OECD Countries Over The Long Term", discusses the most pertinent pull factors that play a part in the decision to migrate.

Notes

1. Thirty-four African countries out of a total of fifty were classified as being least developed according to the United Nations (UN-OHRLLS http://www.un.org/special-rep/ohrlls/ohrlls/allcountries-regions.pdf).

2. The World Bank (2007) defines the "global middle class" as having a per capita income threshold of approximately equal to USD 4 000 and USD 17 000 (in 2000 international dollars).

3. Borjas (1987) argues that individuals migrating from countries with high earnings inequality to countries with low earnings inequality will tend to be negatively self-selected. Income inequality is substantially higher in most non-OECD countries than in OECD countries. In the case where the skills are better rewarded in the source country (that is in countries where the income distribution is relatively unequal, in other words, where the access to economic opportunities is highly unequal between high and low skilled) than in the destination country, the migrants will be negatively selected, that is the person who will decide to migrate will have a below average skill level. The opposite is also true. In the source countries in which the reward to high skills is relatively low (that is, in countries where the income distribution is relatively equal and hence economic opportunities) compared to the destination country, then positive selection will occur which means that migrants will tend to have higher than average skills.

4. Information is based on expert's regional notes and some additional research mentioned in the paper.

5. The World Bank definition of Europe and Central Asia includes Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, FYR Macedonia, Georgia, Hungary, Kazakhstan, Kosovo, Kyrgyz Republic, Latvia, Lithuania, Moldova, Montenegro, Poland, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia, Tajikistan, Turkey, Turkmenistan, Ukraine and Uzbekistan.

6. Information is based on expert's regional notes and some additional research mentioned in the paper.

7. A definition of what age bracket is included varies greatly among different studies. Usually, people considered as "young" are either between 15 to 24 years old, or between the ages of 15 to 29 years old.

8. Information is based on expert's regional notes and some additional research mentioned in the paper.

9. See www.iiasa.ac.at for more information on their data sets.

10. CPA includes Cambodia, Hong Kong, Laos, Mongolia, North Korea, Taiwan and Vietnam.

11. Incidentally, most theories on environmental governance also ignore migration flows.

12. This is not taking into account recent developments set in motion by the financial crisis.

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Chapter 4

Scenarios for the Global Economy and Implications for Migration

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Introduction

The objective of this chapter is to use scenario planning techniques to:

- Explore how the global economic, political, technological, environmental and social outlook might develop out to 2030
- Assess the implications for migration from poorer to richer nations, and
- Examine the particular policy challenges raised for OECD countries.

Five scenarios are presented. These were created for and then elaborated at a focus group discussion with migration experts organised by the OECD/IFP secretariat in July 2008. The scenarios were subsequently developed further based on the focus group input. They were then reviewed and discussed at an OECD/IFP expert workshop in December 2008 and refined as a result of those discussions. A fuller description of the scenario development process is set out in Annex 4.A1.

The chapter is structured into five main sections and five key annexes:

This section, "Introduction", presents the rationale for use of a scenario planning approach and outlines the methodology adopted.

The second section, "The underlying patterns of change", sets out nine critical underlying patterns of global change which we believe could have the greatest influence on how the scenarios develop.

The third section, "The Five Scenarios", introduces the five scenarios and provides a summary of their key features.

The fourth section, "Scenario narratives and implications", provides a more detailed discussion of each scenario and the implications for migration and migration policy.

The fifth and last section, "Conclusion : Core impacts on migration flows", draws conclusions – examining the migration implications of the scenarios for the main sending regions, assesses the overall strength of the "Pull Factors" and suggests possible net migration impacts for the OECD countries under each scenario.

Annex 4.A1 provides a more detailed description of the methodology for scenario construction.

Annex 4.A2 sets out a detailed description of the impact of key trends and forces each scenario.

Annex 4.A3 explores the possible impact of the critical Pull Factors under each scenario.

Annex 4.A4 describes the possible impact of key Push Factors for each scenario.

Annex 4.A5 examines possible wild cards (low probability, high impact events) and their implications for migration and migration policy.

Annex 4.A6 shows the range of underlying factors that have been considered under each of the Pull and Push factor headings.

Why use a scenario planning approach?

Why adopt a scenarios-based approach? The current economic downturn has highlighted how rapidly our expectations about the likely or "preferred" future can be disrupted. Indeed it is now recognised as positively dangerous fur governments and businesses to rely on a single plan and underlying set of assumptions about how even the short term future may play out. We need to prepare for a range of possible futures. The further out we try to look, the greater the uncertainty becomes. Scenarios are a tool for helping us order our perceptions and address uncertainty.

There are a number of economic, geo-political, social, technological and environmental factors which will have a bearing on the outlook for 2030. With inherent uncertainties in each of these areas, it is impossible and inappropriate to envision or predict a single view of what the world in 2030 might look like. For policy makers, it is far more useful to think about the underlying uncertainties and key drivers of change and to explore how they might combine to create a range of different possible "scenarios" of what the world could look like in 2030. These insights can then be used to test and challenge current thinking and to develop a robust range of policy options to address the different possible scenarios that may unfold.

Scenario planning methodology

Scenarios are a tool that enable you to create a series of plausible and feasible "stories" about alternative possible futures that could play out – they are not forecasts, projections or predictions. Assessments of plausibility may vary between observers – the key is to consider a range of possible futures even if some don't seem as likely from where we stand today. In order to build scenarios, we identify a range of driving forces and parameters which form part of each scenario. In the approach adopted for this study, known as the driving force model, the start point for scenario building is to identify two key forces which are expected to have the greatest bearing on how the scenarios will play out.

Hence, in terms of global economic development and international migration, the two forces that are expected to have the most significant bearing on the scenarios are the level of growth in the OECD economies and the level of

social development in non-OECD states. A breakdown of the key steps in the scenario development process adopted is presented in Annex 4.A1.

For the OECD/IFP Future of International Migration to OECD Countries Project we have looked at how the driving forces could combine to create five different scenarios. These scenarios and their potential impacts are summarised in section three and described in detail in section four. Also summarised below in section two are key patterns of change evident in the world today which will have a bearing on how the global economy could develop in the period to 2030.

To elaborate on the scenarios, we have identified four sets of parameters:

- A set of descriptors of the baseline scenarios – these are summarised below and presented in full in Annex 4.A2
- The leading "Pull Factors" that would encourage people to go to a particular country – (Annex 4.A3).
- The leading "Push Factors" that might drive people to leave their home country (Annex 4.A4).
- Wildcards – low probability, high impact events (Annex 4.A5).

The following key parameters were considered for the baseline scenarios:

- Geopolitical Outlook
- Global Economy and Trade – GDP Growth and GDP Per Capita
- Socio-Economic Development
- Resources / Commodities
- Environmental Concerns
- Technology
- Infrastructure
- Regional Co-operation and International Aid

The underlying patterns of change

There are nine key patterns of change which we believe will have a strong bearing on how the scenarios will play out:

- Demographic shifts
- Changing economic landscape
- Political complexity
- Expanding business agenda
- Science led innovation and growth

- An ageing society
- Talent shortages
- Global internet expansion
- Rising environmental risks

These are described below.

Demographic shifts

The United Nations "World Population Prospects 2008 Revision" (2009) forecasts that we will see dramatic growth of population globally from around 6.8 billion in 2009 to 9.2 billion by 2050. We are also experiencing a rapidly changing ethnic mix of the population – particularly in Europe and the U.S. – for example, *The Brussels Journal*, citing the *Daily Telegraph* (2007), reports that there is an expectation that an average of up to 2.2 million people could migrate from poor to rich countries every year through to 2050. In the U.S., the World Future Society forecast that Hispanics could be one-fourth of the population within ten years (Cetron and Davies, 2008).

Changing economic landscape

The credit crisis and resulting global economic downturn which started in 2008 highlight how integrated the global economy is and highlight how quickly shockwaves can spread across the system. Indeed many commentators suggest that it is the more developed economies such as the US, UK and Germany that could feel the greatest impact and take the longest to recover. Despite the downturn, there is still a strong expectation that increasing economic power will be exerted by the BRIC economies (Brazil, Russia, India and China). Current forecasts from the OECD suggest that China's GDP could overtake that of the U.S. as early as 2015 (Maddison, 2008).

A number of other emerging nations have been developing stronger economies – creating new opportunities and potential threats for OECD based enterprises. How they fare during the downturn could determine the extent to which their promise is fulfilled in the period to 2030. Particular attention has been focused on what Goldman Sachs described in 2005 as the "Next-11" high potential economies (O'Neil *et al*., 2005). These are countries which could follow the BRICs to become top 20 economies as early as 2025. The list includes Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, South Korea, Turkey and Vietnam. The key selection criteria were macroeconomic stability, political maturity, openness of trade and investment policies, and the quality of education. These economies have the potential to be both a source and destination for migrants over the period to 2030.

For many of the Less Developed Countries (LDCs), economic advancement could actually lead to higher migrant outflows initially as rising incomes and higher educational achievement could help citizens seek out better opportunities elsewhere. For most nations though, assuming some degree of political and social stability, there comes a point when wage differentials begin to erode between recipient and sending countries and the rate of economic migration begins to slow. Discussions at the July 2008 focus group put this figure at between 30% to 50%.

Rising political complexity

The global political agenda is becoming more inter-connected and complex. At the same time, there are more actors on the global stage wanting to have a political say. Hence the voices of Europe and the U.S. are no longer as loud and as distinct in the international arena. China and India are increasingly becoming "spokesnations" for the developing world and fault lines are beginning to appear in institutions like the United Nations as the old and new worlds collide on a range of topics from trade rules to security issues and environmental policy. There is a growing dialogue on the need for changes in the institutional framework to better represent the developing world.

At the same time, there is clearly potential for strengthening and expansion of the role of existing political groupings such as ASEAN (Association of Southeast Asian Nations), the African Union, USAN (Union of South American Nations), the OAS (Organization of American States), the GCC (Gulf Co-operation Council), the SCO (Shanghai Cooperation Organization) and the CIS (Commonwealth of Independent States). In addition, new entities could emerge which better reflect the needs and aspirations of developing countries and LDCs who feel under-represented in the current set-up of international institutions. Hence, the global institutional landscape could have changed quite significantly by 2030.

In the U.S. the expectation is that the political agenda will become increasingly crowded and complex with a range of existing and new challenges. These include tough choices around the level of engagement and funding for the campaigns in Iraq and Afghanistan and how to address rising tensions in and with Iran and Pakistan. Domestic economic choices will also require tough political trade-offs in deciding how to fund them – for example, the American Society for Civil Engineers "2005 Report Card for America's Infrastructure" estimates that USD 1.6 trillion is required for infrastructure improvement over the next five years. At the same time, healthcare costs are projected by the American Congressional Budget Office to reach 25% of GDP by 2025 and 49% of GDP by 2082. At the time of writing, the potential scale of the economic crisis also continues to rise – with the International Monetary Fund April 2009 Global Financial Stability Report now estimating total losses

on loans and securities of up to USD 2.7 trillion for the USA and around USD 4.1 trillion globally.

Expanding business agenda

Businesses in many parts of the OECD are facing tougher domestic conditions as the global downturn spreads. European and U.S. businesses can no longer assume leadership in every sector. For many businesses in the OECD, domestic slowdowns could become an increasing incentive to focus on emerging markets and LDCs and take a longer term focus. At the same time the pressure is on business to put an increasing focus on work-life balance and pay much closer attention to a broader responsibility to their employees around the globe – the triple bottom line of profit, people and the planet. This could help improve the economic prospects, employment opportunities and social conditions in developing markets and reduce migrationary pressures.

Science led innovation and growth

Science and technology are "going mainstream" and becoming increasingly critical to innovation in business products and processes. Fields like nanotechnology, green technology and biotechnology all hold the promise of becoming trillion dollar sectors. The rate at which research and development globalizes and the pace of technological diffusion will be critical to changing the prospects for growth and development in non-OECD nations.

An ageing society

The world's aging population will be a key demographic story of the 21st century. The United Nations "World Population Ageing Report 2007", highlights that since 1945 the life expectancy of citizens living in the wealthier countries around the world has increased by one year in every five. Expanded access to basic healthcare, nutrition, and safe water supplies has resulted in an increase in global life expectancy. The American Academy of Anti-Aging Medicine (2005) believes that average life expectancy in the US will reach 100 by 2029.

Aging has wide-ranging implications related to wealth distribution, pensions, social services, healthcare, financial services, consumer spending, industry sector make up, labor markets and political policies. A UN report, *World Population Aging* (2002/2007 update), indicates those aged over 60 represented 8% of the global population in 1950, rising to 11% in 2007 and are forecast to reach 22% by 2050 (O'Brien, 2007). The report highlights that by 2050, those aged 60 and over will comprise one-third of the population in developed regions.

Ageing of the developed world will have major implications for the shrinkage of the working population and the resulting demand for migrant labour. The UN study suggests the global ratio of workers aged between 15 and 64 to older persons could decrease from 12 to 1 in 1950 to 4 to 1 by 2050. Asia and Europe are expected to age faster than other regions. By 2015 the EU is projected to have 26% more people in the 50 to 74 age bracket and one-third more aged over 65 than in 2007. This will be accompanied by a 16% decline in the 15 to 44 cohort. In the United States, the proportion of the population aged over 65 years is projected to increase from 12.4% in 2000 to 19.6% by 2030. Over the same time period, life expectancy in China is expected to reach 75, the Russian Federation 72 and India 71.

Talent shortages

With up to 70% of the valuation of public companies being based on their talent pool and intellectual property (Fleming, 2007), there is growing concern amongst employers in the developed world over the talent gap between demand and supply in almost every sector. Again the problems are most pronounced in the U.S. where the US Bureau of Labor Statistics *Employment outlook: 2006-16* reports that retirement of the baby boomer generation is taking around 77 million people out of the U.S. workforce. While 'Generation X has bought around 40 million into the workforce, Generation Y (born 1978-1995) that follows them is estimated at 77 million (Deloitte, 2005). At the same time, a 2005 US National Association of Manufacturers study found that 84% in U.S. manufacturing industry say they are not happy with the quality of school and high school education.

Global internet expansion

The rise of the global internet is accelerating the pace of technological diffusion and making it easier for would be migrants to understand the opportunities and challenges in potential recipient countries. Internet World Statistics estimates suggest there were around 1.6 billion total users as at 31 March 2009. Additionally, rapid growth in popularity led to estimates of 691 million unique social network visitors in November 2008 (Schonfeld, 2008). The web increasingly allows people to service global opportunities while staying in their home countries and research global migration opportunities. The online channel and mobile devices will also become critical tools in distributing educational content in an affordable manner.

Rising environmental risks

The challenge of managing natural resources and reducing our environmental footprint will be key to reducing the number of environmental refugees. We know that current consumption rates are already exceeding the planet's capacity – if the developing world wanted to consume at the same rate as Europe, we would need three planets. Energy demand is far exceeding our ability to supply it and global requirements are projected by the US Energy Information Administration to increase by 50% from 2005 to 2030.

The five scenarios

The analysis of the key change drivers identified in section 2 above suggested five plausible scenarios for the global economy for the period to 2030. These are shown in Figure 4.1 and are summarised below.

Clearly the global economic downturn taking place at the time of writing will have a significant bearing on the near term economic outlook. These shorter term scenarios will in turn influence the possible economic development pathways to 2030. However, to posit a range of scenarios for the near term and then define a set of scenarios from each of those possible starting points would have led to an unmanageable number of scenarios to work with for the 2030 analysis. Hence, in constructing the scenarios, we have adopted an assumption that the global economy has fully recovered from the economic downturn by 2013 and is back to the levels of growth witnessed in 2007-08. The five scenarios are summarised as follows:

Scenario 1 – Progress for All – growth and development have delivered advancement in social welfare across the planet. There is strong demand and intense competition for skilled and unskilled labour across both the OECD and many developing economies and a high circular flow of migrants results – particularly amongst skilled labour.

Scenario 2 – OECD Long Boom – high levels of innovation-fuelled growth in OECD countries are not matched by the BRIC economies – who are beset by internal challenges. However, many other developing nations achieve advancement. There is strong demand for skilled and unskilled migrants from the OECD but there is less competition for talent from non-OECD nations.

Scenario 3 – Uneven Progress – While OECD and BRIC countries continue to develop, the gap with other emerging nations and LDCs grows. There is intense competition between OECD nations and the BRIC economies – particularly for skilled migrants.

Scenario 4 – Globalisation Falters – A series of global economic slowdowns dramatically reduce demand for all but the most specialist of skilled labour.

Scenario 5 – Decoupled Destinies **–** There is an economic decoupling as OECD nations struggle with the increasing cost of recovery from a series of punishing downturns. The developing nations however are propelled by an influx of long term investment capital. While there is low demand even for specialist skills in the OECD, opportunity improves both domestically and in other developing nations across the non-OECD universe.

A short overview of the key features of each scenario is presented in Table 4.1 below. A more detailed description is presented in Annex 4.A2. In the interest of clarity and brevity, the analysis is presented at a summarised level rather than looking at a country by country picture. The scenarios can be viewed as variations on scenario one – "Progress for All" – as this could be considered the "preferred future" for developed and developing economies alike.

As can be seen, under scenario one, the broad outlook is of continued economic progress and improving political and social stability – particularly in LDCs. Widespread investment in infrastructure is enabling higher levels of diffusion of technological innovations that can help improve the quality of life. Initially, improving stability, domestic growth and rising education levels in emerging economies and LDCs are expected to actually drive higher levels of out-migration. In these circumstances, more citizens have the financial capacity to leave in search of higher levels of opportunity. In the longer term, migration levels could fall and returnees increase as the levels of income disparity reduce between sending and recipient countries to within 30-50%.

Figure 4.1. **The five scenarios**

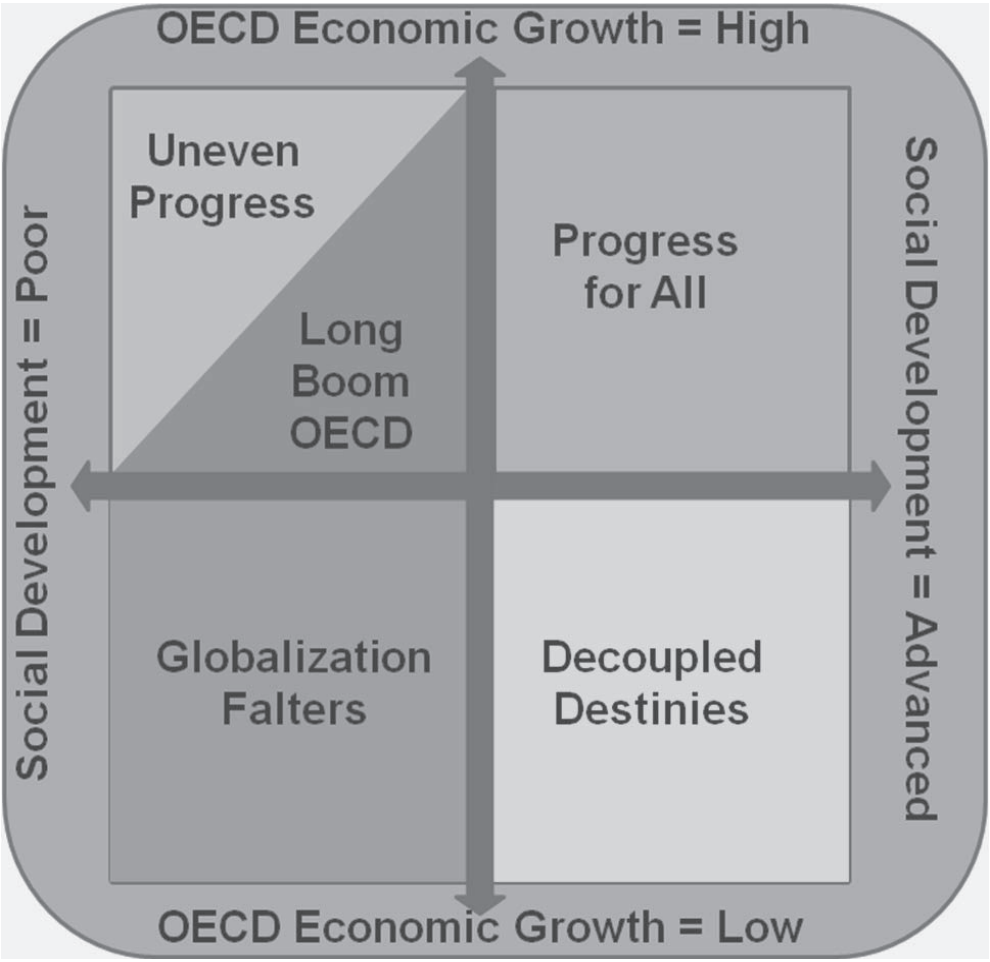

Table 4.1. **The five baseline scenarios**

Scenario Overview	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Geopolitical Outlook	• Stable geo-political outlook – driven by priority of global economic growth • Reducing internal conflict in most LDCs enables greater economic progress	• Relatively benign context for international co-operation although tensions rising between OECD and BRIC nations • Targeted assistance from OECD countries to help selected emerging economies and LDCs	• BRICs and some Middle Eastern states play out their dominance against more vulnerable states • Developed nations more interventionist to secure natural resources and prevent domestic and regional conflicts	• Deterioration of international cooperation between developed and developing nations • Increasing tensions and conflicts between poorer nations over resources such as water	• New political institutions evolve to focus on the needs of developing nations and LDC's – potentially marginalising UN, World Bank, IMF and OECD • Greater cooperation between emerging nations and LDCs
Global Economy and Trade	• Average annual growth rates (2000 PPP USD): – World: 4-4.5% – OECD: 2.5% – Non-OECD: 5-6% – China: 7.5% – India: 6% – Africa/ME/LA: 3.5-4.5%. • Average annual per capita income growth: OECD – 2%; non-OECD – 5%. • Rapid integration of world trade	• Average annual growth rates (2000 PPP USD): – World: 3.5-4.0% – OECD: 2.5%+ – Non-OECD: 4-5% – China: 3-5% – India: 2-4% – Africa/ME/LA: 3.5-4.5%. • Average annual per capita income growth: over 2% for OECD countries; non-OECD – 3-4%. • Increasing integration of non-BRICs into world trade, BRICs internally focused	• Average annual growth rates (2000 PPP USD): – World: 4.-4.5% – OECD: 2-2.5% – Non-OECD: 5-6% – China: 8%+ – India: 6%+ – Africa/ME/LA: 2.5-3.5%. • Average annual per capita income growth; OECD – 2%; non-OECD – 5% • Strong integration of OECD with key developing nation partners	• Average annual growth rates (2000 PPP USD): – World: 1.5-2.0% – OECD: 0.5-1.5% – Non-OECD: 2-4% – China: 4-6% – India: 3-5% – Africa/ME/LA: 1.5-2.5%. • Average annual per capita income growth: OECD – 0.5-1.0%; non-OECD – 1-3% • Trade, investment and aid flows slow significantly	• Average annual growth rates (2000 PPP USD): – World: 3-4%; – OECD: 0.5-1.5% – Non-OECD: 6-7% – China: 8%+ – India: 7%+ – Africa/ME/LA 3.5-5.0%. • Average annual per capita income growth: OECD – 1%; non-OECD – 5-6% • Increasingly strong integration of emerging economies and LDCs

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Table 4.1. **The five baseline scenarios** *(continued)*

Scenario Overview	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Socio-Economic Development	• Broad-based social progress across non-OECD regions • Advancement of many LDCs actually accelerates migration push in the shorter term but helps erode wage inequalities in the longer term	• While the BRICs stall, LDCs continue to develop through strengthened ties with OECD	• Uneven progress towards higher living standards across non-OECD regions	• Increasingly sharp divisions between winners and losers	• Steady progress by BRICs, other emerging economies and many LDCs
Resources / Commodities	• Innovations in alternative energy and food production keep price inflation under control	• Slowing BRIC growth reduces food and energy demand, innovation drives up supply	• Slowing demand growth and supply-side innovation keep price growth in check	• While demand growth decreases, pace of innovation slows and resource prices remain high	• Energy prices rise while agricultural innovation helps control food prices
Environmental concerns	• Increasingly co-ordinated global progress on environmental protection and climate change reducing the environmental drivers of migration in many countries by 2030	• Most OECD states makes strong environmental progress, emerging economies and LDCs struggle to hit targets	• Many OECD countries progress according to plans – developing nations and LDCs increasingly fall behind global targets	• Increasing environmental degradation and adverse climatic effects as countries struggle to fund improvement	• Environmental degradation increases as rising food demand places increasing pressure on agricultural supply chain
Technology	• Increased technological diffusion and take-up helps developing world advance	• Technological innovation accelerates development across many OECD countries – slower, uneven take-up for developing world.	• Most OECD states maintain pace of progress, emerging economies increase take up, LDCs continue to struggle	• Slowing growth and negative geo-politics reduce technological diffusion.	• Improvements in power distribution help accelerate technological diffusion across the developing world

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Table 4.1. **The five baseline scenarios** *(continued)*

Scenario Overview	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Infrastructure	• Economic growth and aid drive spending on physical, educational and health infrastructures in emerging economies and LDC's	• Emerging economies and LDC's struggle to fund their burgeoning infrastructure requirements	• While the BRICs and many emerging economies increase infrastructure spending, LDCs make limited progress	• Significant slowdown in global infrastructure investment	• While infrastructure spend accelerates across non-OECD nations, OECD investment slows – further hampering recover and growth
Regional co-operation and international aid	• Existing and new regional and pan-regional institutions flourish – encouraging political goodwill, global trade, aid flow and reduced corruption.	• Strong relations and alignment between OECD countries increases exertion of influence on non-OECD states in return for aid. Slowing BRIC / LDC collaboration.	• Greater integration among emerging nations, increased assertiveness towards the OECD and higher "targeted" aid flows.	• Global and regional institutions blunted, aid flows reduced and corruption goes unchecked in many LDCs.	• Increasing tensions between "old" and new world institutions. Less aid from OECD, higher flows from BRICs.

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Scenario narratives and implications

In this section we look at the dynamics of each scenario in greater detail and examine the critical implications for migration and migration policy.

Scenario 1 – "Progress for all"

Overview

By 2030, the benefits of increased global economic integration and growth are benefitting most nations – even the Less Developed Countries (LDCs). There is strong integration of the global economy, a relatively benign political context and worldwide progress on tackling environmental risks. The EU has enlarged and strengthened as an institution. Strong regional institutions have also emerged in Asia, Africa, the Gulf States and Latin America. Institutional strength has helped to strengthen regional economies, enhance international trade and establish global agreements on the mobility of workers. The ageing of OECD populations, high economic growth and skill shortages across most sectors are key drivers of demand for inward migration. The emergence of regional growth poles encourages increased intra regional migration.

The continued globalization of corporations from both the developed and developing world has helped increased the competition for both skilled and unskilled labour in OECD and non-OECD countries. There is a strong circular flow – particularly of professionals and skilled labour between the OECD, BRICs and other developing nations. The attractions of migration are being countered by the increasing range of opportunities in people's home countries – although the wealth and income gap with the OECD and BRICs remains high.

A key feature of the scenario is international co-operation which helps drive globalization, accelerates global trade for most regions and increases the flow of aid from OECD and BRIC countries to other emerging nations and LDCs. Although, the outlook for emerging nations and LDCs improves over the period to 2030, we are unlikely to see a change of "push" factors over the first 10 years.

4.1.2. Implications for migration and migration policy

The key features of this scenario for OECD countries are constant growth, high domestic employment rates, low fertility rates, an ageing population, increasing ratios of retirees to workers and increasing global competition for top talent. While the majority of migrants are expected to move to traditional powerhouses in the OECD or the BRICs, a significant minority, will migrate

to less traditional locales in the developing world – helping intellectual and technological diffusion along the way.

The highest levels of foreign born populations are expected in the richest counties *e.g.* the USA. Higher levels of domestic growth and rising incomes in regions such as Eastern Europe, the BRICs and North and Sub-Saharan Africa may reduce the inclination to migrate among higher skilled workers while also increasing the range of opportunities available to them globally. In regions such as Africa, intra-regional migration is expected to increase.

To help increase the overall talent supply, an increasing number of OECD educational institutions are expected to establish educational programmes and campuses in developing world locations. Environmental factors such as water shortages, soil degradation and flooding could drive up migration – particularly to neighbouring states. Technological diffusion such as increased penetration of mobile phones may increase circular migration as individuals can stay in contact with their national diaspora and move in line with emerging opportunities.

The key implications for OECD countries could include:

- High locally unmet demand for skilled and unskilled workers
- Pressure from employers to develop more immigrant friendly policies
- High migrant flows likely to countries with strong existing foreign born networks
- Reduced transaction costs where a large foreign born population exists already
- Growing concerns over "brain drain" of top talent from developing nations and LDC's
- Increasingly intense competition for talent with developing nations
- Possible rise in resistance to immigration when it reaches a high threshold
- Countries with low foreign born population levels could become more popular with migrants if there is a backlash in countries with a high/higher rate.

From a policy perspective, the key challenge will be ensuring a strong flow of appropriate talent to maintain economic development whilst avoiding high levels of domestic resistance to in-migration. Measures to increase domestic fertility will need to be in place by 2010 to have any real impact on the working population by 2030 – hence the demand for inward migration is likely to grow. The European Union already has open borders for European workers and under this scenario, similar schemes could be adopted across

the bulk of the OECD as long-term growth and social and political reforms remove many barriers to integration. Critical challenges for policy makers will include:

- Demonstrating to their citizens the need for high in-migration and proving that appropriate monitoring policies and controls on migration are in place
- Determining the right balance between permanent and temporary migration requirements to address skills shortages
- Balancing migration with extension of retirement age to grow the working population
- investment to ensure the education, capability and productivity of migrants – possibly even in their own countries
- Addressing language and cultural integration difficulties to avoid social tensions
- Thinking through the second and third order effects of mass migration – such as how employment markets will be affected and the impact on local communities.

Scenario 2 – OECD "Long boom"

Overview

This scenario presents a view of perpetuation of a 20th century development model where richer countries continue to prosper while developing countries struggle to fulfil their potential. While the OECD countries have been fuelled to new levels of economic prosperity on the back of high investment in technological innovation, the BRIC countries have failed to maintain their stellar growth rates o the late 1990s and early 2000s. Internal barriers such as under-investment have held back BRIC progress, while other developing nations have been pulled along in the slipstream of OECD growth. Institutions such as the EU and OECD have grown and strengthened whilst across the developing world other regional groupings have failed to act as a coherent driver for growth and progress. The demand for in-migration remains high in the OECD, but there is less intense competition from the BRICs.

Implications for migration and migration policy

Given rising OECD growth, skills shortages and an ageing population, in-migration will be a key tool to ensure a steady flow of labour to fuel

continued progress. The key ramifications of uneven development across the OECD and BRIC economies could include:

- BRICs expected to be net exporters of migrants over the period to 2030
- A rising flow of students from the BRICs to OECD states
- Limited competition for top talent globally as sluggish emerging economies will struggle to retain / attract the very best
- An increasing growth gap between developed and developing nations
- Rising poverty levels in less developed nations
- Increasing informal / clandestine migration.

From a policy perspective, low OECD inflation rates relative to those in the developing world may also prove particularly attractive for nationals who have gone back to their emerging countries but are now struggling to achieve economic advancement. If skilled worker opportunities are limited in non-OECD states, higher levels of tertiary education and the presence of foreign educational institutions could act to accelerate and increase the "brain drain" to OECD states. This could further widen the gap between have and have-not nations. This also creates the possibility of "brain waste" in OECD countries if skilled migrants are underutilized.

The negative effects of low growth – *e.g.* political instability, poor governance, slow development and corruption could increase the desire of skilled and non-skilled alike to migrate to richer nations. In the longer term an increase in unregulated migration could create increased economic costs which reduce growth potential. Lower environmental protection funding from BRIC countries will increase risks and drive up both internal and external migration. This could be partially countered by the potential for greater aid funding from OECD states. Such aid could help to reduce environmental risks and improve clean water provision, sanitation and coastal protection in poorer at-risk nations and help reduce migrationary pressures.

High levels of in-migration could drive up domestic tension in OECD states. There may be increasing restrictions on entry of non skilled workers as and when the OECD has topped up its workforces. What could follow is a tightening of border control and a surge in illegal migration. This could lead to tensions between OECD and non-OECD countries.

Increased growth should provide more resources to enable OECD countries to integrate, develop, and enhance foreign born populations. Conversely, failure to integrate effectively could lead to problems of political stability and social cohesion in the OECD.

Key policy challenges will include:

- Effective integration of foreign born populations to address the social cohesion issues in trying to achieve a harmonious "melting pot" society
- Striking the right balance between raising the domestic retirement age, increasing the level of permanent in-migration and temporary work permits to address peaks and troughs in domestic skills supply
- Addressing potentially greater health issues given the rise in the number of poor people globally who want to migrate to the richer nations
- Education and capability development of migrants to ensure a high economic contribution and low or zero net overall cost to the receiving country
- Tensions between countries may require the strengthening of border controls in OECD states which will act to raise tension. Increasing the numbers of refugees allowed in by OECD countries may also raise tensions.

Scenario 3 – Uneven progress

Overview

The OECD countries and BRICs make strong progress and achieve close economic and trade integration. The gap increases with many other developing countries and LDCs who cannot to afford to invest as much in technological innovation, infrastructure, education and health. While there is strong competition for talent between OECD and BRIC nations, there is also a growing supply of skilled and unskilled would-be migrants.

The EU has proved an effective driver of growth and in Asia, the ASEAN and Gulf Cooperation Council regional groupings are becoming a coherent economic force. However, the progress of similar groupings in Africa and Latin America continue to falter. There are expected to be increased tensions between cores and peripheries and urban rural areas in developing nations that struggle to achieve advancement. Many of these states show a decreased ability to cope with environmental degradation, water shortages and food stress. All of these factors help drive outward migration.

The tension inherent in the wildcard situations is heightened in this scenario such as the potential for more pandemics in countries with limited funding available to implement effective controls. However, this might be mitigated by technological advancements such as health sector discoveries that produce low cost multiple disease vaccinations and low cost solutions that help the energy sector to moderate demand for oil. This scenario could see a rise in reverse migration trends to BRIC economies and migration may even decrease for some OECD countries.

4.3.1. Implications for migration and migration policy

High growth, skills shortages and an ageing population will mean OECD countries will need to target key skill groups for in-migration. Key implications for migration include:

- The BRICs will become power centres, intensifying global competition for top talent
- Skilled migrants may increasingly circulate between OECD and developing nations
- Growth in the BRICs and "dominant" Latin America countries will curb migration and increase domestic opportunities
- Uneven growth within the BRIC group could lead to outflows of rural/unskilled workers who are not successful in their home countries (rural to urban migration)
- Internal tensions in LDCs will increase refugees and illegal migration – many will seek to migrate to places with large numbers of co-ethnics
- Richer countries may feel more onus to accept refugees
- Skilled migrants may become more selective in picking their destination country (politics permitting)
- High volume migration may create language blocks in host countries.

From a policy perspective, declining fertility rates in OECD nations could increasingly be mimicked by the BRICs and emerging economies – leading to more intense competition for skilled workers. LDC's will maintain high fertility rates and see strong out-migration throughout the timeframe. Competition for top level candidates will increase between universities in OECD states and those in their host countries.

Tensions in larger OECD states with significant immigrant populations could lead to a diversification of migration flows toward smaller "dominant" countries – raising the issue of desire versus ability to migrate. Challenges will include recognition of foreign documents, the potential for inter-ethnic tensions and shocks in destination countries, health issues raised by diverse ethnic immigration groups and rising outflows of remittances to in the sending countries. Increasing migration to previously "closed" nations could also have positive effects – increasing diversity, innovation and entrepreneurship.

The BRICs may be able to cope better with environmental challenges and water stress but rural populations may suffer and seek to emigrate. We may see initiatives from cash strapped nations to "push" out those populations under water stress, creating tension and some outflow. Under such

circumstances OECD countries are unlikely to allow in large numbers of unskilled environmental migrants.

Given citizen concerns over an influx of poor migrants, acceptance of the need for in-migration may be limited until there is a realization that there is a high age dependency ratio and growing skills gap. The success or otherwise of host countries to establish an effective welfare system will have an impact on the flows of migrants. The key policy challenges thrown up by this scenario will be centred on the management of instabilities and uncertainties and will include:

- Recognising that some OECD countries may seek to maintain their relative power through a high rate of immigration to maintain or increase productivity
- Determining the level of service provision for asylum seekers and refugees and how to integrate them effectively
- Providing language training and integration support to help absorb successive "ethnic waves" of migration
- Adapting social security systems in order to speed the integration of low skilled immigrants
- Responding to pressure from highly educated populations in OECD countries for their governments to support poorer immigrants
- Accommodating increased diversity of ethnic backgrounds, skills and approaches – which will be both a benefit and pose integration challenges
- Achieving social cohesion if migration is concentrated on diasporas and family tie areas leading to ethnic enclaves
- Coping with the potential health issues resulting from the emergence of close knit migrant enclaves.

Scenario 4 – Globalisation falters

Overview

Regular global economic downturns act to depress globalisation, growth, infrastructure investment and social development across the world. The EU has either disbanded or become far less effective as an entity. Across the world regional groupings have been considered a lower priority than individual nations' domestic interests. Whilst the demographic drivers in the OECD mean there is still demand for in-migration in key sectors such as elderly care, the potential supply far exceeds demand. OECD nations

in particular use a range of policy instruments to prevent unmanageable in-migration. A growth in illegal migrants would be expected.

Pressure for migration increases in a global environment stymied by lower growth, scarcity of critical resources, declining living standards and lower productivity. These pressures would exist in a policy environment hostile to international co-operation, leading to tighter border policies to control migrationary pressures. Legal and clandestine migration may also be checked by an increase in the cost of migration.

Implications for migration

Persistent wealth and income differences between OECD and non-OECD countries result in continuing migration flows but with significantly lower overall demand across the OECD. The key implications are:

- Increasing selectivity in admissions
- Growing importance of the diaspora effect in inducing migration as an increasing number of diaspora related / run businesses will draw fellow migrants
- Continuing demand for migrant labour in key sectors such as long term care, health and construction industries
- Rising clandestine migration
- Increasing host country antagonism to legal and illegal migration – leading to rising integration challenges
- Skilled worker migration will represent a larger share of total migration
- Poor domestic conditions will create increasing emigration pressure especially from poor to middle income countries
- Migration costs will increasingly result in migrants showing greater selectivity
- Concerns over cherry picking the best talent and "brain drain" could create tensions between developed and developing nations.

From a policy perspective, there is unlikely to be a significant diversification of destinations under this scenario. As all economies struggle or underperform, OECD states will be the primary destination for skilled and unskilled migrants alike. The BRICs could see a small increase their number of resident foreign born nationals. Possible longer term improvements in Latin America and South Eastern Europe could reduce migrationary pressure.

Given the poor prevailing economic conditions – particularly in the developing world, there will be limited local funding or aid to address environmental challenges such as coastal flooding. This could result in increased numbers of internally displaced persons and increased internal migration. OECD states are unlikely to open their doors to environmental migrants – leading to far greater internal and intra-regional migration among developing nations and LDCs.

Retarded growth will slow development – particularly in LDCs – and will result in static or increased fertility rates. Poorer countries will be faced with the burden of overpopulation as more developed countries have less need for migrant workers in the adverse economic climate. The charged geo-political atmosphere will limit co-operation between states and lead to increased isolationism and border control, plugging an escape route for those states with burgeoning populations.

Migrationary pressures will increase for non-OECD states, but political and economic realities increase the cost of migration and the selectivity of OECD states in accepting migrants. The BRICs and other emerging economies will experience weaker than expected economic growth, which combined with a deceleration of structural reforms will slow the inward flow of migrants. Slow growth in private wealth generation in the BRICs will encourage migration at a time when the OECD is ill equipped to accommodate high in-flows. The OECD will still recruit the cream of skilled workers

The effect of the wildcards would be to accelerate migration trends, especially through events such as a rise in socialist regimes in South America and wars in Africa. A major health disaster would obviously be a push factor but the migration pressure may be checked by the strict border controls of host and sender countries. Similarly a major implosion or "dismemberment" of China could lead to mass outward migration.

Under this scenario, key policy challenges will include:

- Managing the mis-match in the supply of and demand for migration. Increasing selectivity and tighter migration/border policy will reduce demand at a time of increased supply
- Identifying critical skill gap areas where domestic populations cannot meet demand
- Addressing negative public opinion – which will greatly affect integration and could be a major check on migration
- Balancing permanent and temporary migration to allay public concerns of over-population

- Addressing brain waste – the number of graduates will be increasing worldwide which may drive a change in demand for low skilled migrants
- Even in this pessimistic scenario the OECD countries will still be very attractive destinations for migrants even if the situation in non-OECD countries has not deteriorated.

Scenario 5 – Decoupled destinies

Overview

The much heralded "decoupling" of developed and developing economies is starting to take place. The OECD countries are beset by a series of increasingly severe and ever more expensive downturns, from which it becomes harder and harder to recover. The credit crisis and resulting downturn of 2008-2012 led to a massive flight of global capital to developing economies and LDCs. These inflows enable developing economies to focus on longer term investment in critical infrastructure, education, healthcare and technological diffusion and have helped provide a massive growth stimulus to many nations.

Tensions in the EU mean that it has either weakened or broken up into smaller more local groupings – such as the Scandinavian bloc. In contrast, regional groupings for Asia, Africa, the Gulf States and Latin America have all made considerable progress and have become effective co-ordinators of policy and drivers of growth. Collaboration between these groupings is increasing and frequently by-passes the EU, UN and other "old world" institutions.

Economic and social development, coupled with increasing trade amongst developing nations and LDCs have provided new cause for optimism and stimulated reforms in governance and key institutions. Whilst there are limited opportunities for skilled migrants in the OECD, there is now an array of choice for skilled and unskilled labour in both their own countries and across the developing world and LDCs.

A virtuous circle develops with greater co-operation, aid and technology transfer flowing between the developing and poorest nations, helping to pull even the weakest states to higher levels of growth and progress. Investment in education, greater female participation in the workplace, higher investment in research and development and increased innovation all spur job creation and create the conditions in which fertility rates can come down.

At the same time, in many countries, increased growth provides the funding for investment in clean water, sanitation, pollution control and coastal

protection – all of which serve to reduce migrationary pressure. Overall these factors help to reduce the demand for out-migration and encourage in-migration to developing economies and LDCs. At the same time, firms from the developed world will be increasing their investment in developing markets – further driving the demand for skills and accelerating the inflow of foreign expertise that could help drive technology diffusion, innovation, job creation and wealth generation.

Implications for migration and migration policy

Migrants themselves may be less enthusiastic about a move to an OECD state as conditions improve at home, wage differentials decline and increasingly attractive conditions prevail throughout the developing world. Key implications include:

- Rising OECD unemployment reduces demand for all types of migrant skills
- Decreasing legal and illegal migration
- Declining or stagnant foreign born population rates in the majority of OECD states
- Reducing competition from the OECD for all but the most highly skilled labour
- Rising flow to non-OECD states with significant diasporas – *e.g.* Asians to African and Gulf States
- Increasing global competition for top talent
- Potential for professional imbalance – migration may continue to the OECD at a steady rate to compensate for ageing populations but unskilled labour may comprise an increased proportion of the total
- Net migration may be flat or negative for most OECD states as increasing numbers of OECD nationals seek opportunities outside the OECD
- Enrolments may fall in OECD tertiary institutions as domestic demand declines and international competition for foreign students increases in both cost and quality terms.

From a policy perspective, OECD graduates will contribute to a strong trend of circular migration between OECD and BRICs and other emerging economies. Increasing numbers of students from OECD countries may seek to do their undergraduate and post-graduate studies abroad to gain firsthand experience of emerging markets. There will be an accelerated pace of OECD educational institutions establishing educational programmes and campuses in the developing world to offset the downturn in domestic markets.

Sluggish growth could act to depress fertility rates in the developed world. This could increase the need for inward migration but only in the long term. The developed world may be better positioned to drive through active policies to control fertility rates and address environmental risks – both would help reduce migrationary pressures.

Should inflation become a real problem it would significantly increase the cost of migration to the OECD. It will also badly affect the balance of trade with emerging economies – further aggravating economic problems. Were OECD states to suffer a significant rise in inflation we can expect to see a decline in migration as people are drawn toward more "local" and economically upbeat hosts. Skilled foreign nationals will increasingly look to the BRICs and other emerging nations for opportunities. A "reverse brain drain" could develop – particularly to China, India and the Middle East – as increasingly well funded new and existing academic institutions seek out the best talent globally.

The highest pressure for out-migration is likely to come from the very poorest countries that see only marginal gains from the overall boom in the developing world. Here we will see a combination of economic, political and environmental refugees. Differential development policies in developing nations could lead to families migrating to states with more female-friendly employment laws. If developing nations progress as expected and rewards increase, inward migration of skilled labour from developed countries will increase – accelerating innovation and technological diffusion. Increased interconnectedness will work to create a more globally connected society, freeing people from the national or regional confines and increasing the rate of circular migration around the developing world.

Under this scenario, key policy challenges will include:

- A growing need to focus on policies to retain top talent in the face of growing global competition
- Ensuring business retention as firms in OECD countries may accelerate the transfer of core operations and investment overseas – taking investment funds and some of their best talent with them
- Maintaining academic excellence in the face of a prolonged period of developing world investment in education – particularly by states in the Middle East, China and India – which will see some of the best educational talent being tempted to work overseas – creating a reverse brain drain
- Developing stronger temporary migration policies to enable short-term inflows to address particular skill shortages.

Conclusion: Core impacts on migration flows

The five scenarios described above set out a broad range of possible economic outlooks and associated migration and policy implications. The broad expectation is that demand for migration into the OECD is likely to rise or at least stay constant under the five scenarios. However, we appreciate that policy makers require a more detailed assessment of the drivers, scale and possible sources of migrant flows. Hence, for national and regional policy makers, the challenge is to review each scenario and assess the local implications for the strength of Push and Pull factors, determine the critical areas of likely demand for each skill level and consider the range of policy responses required. To help in assessing these likely impacts, we conclude by analysing three critical dimensions of migration flows for each scenario which have been requested by policy makers:

- Implications for Source Regions
- Migrationary Impact of Key Pull Factors
- Net Migrationary Impact of Inflows and Outflows for OECD Countries.

Each of these perspectives is discussed in more detail below. In each case we focus on the critical impacts under the highest OECD growth scenarios as these are the circumstances under which the largest migrant flows are expected.

Implications for source regions under each scenario

Table 4.2 explores the likely net impacts of the key Push and Pull factors on migration flows from the following regions:

- South Asia
- China and South East Asia
- Africa
- The Middle East
- Latin America and the Caribbean, and
- The Russian Federation and Central, Eastern and South-East Europe.

In South Asia the expectation is for continued development in India and halting progress in Bangladesh and Pakistan. While India is expected to continue exporting all skills for some time, return flows should increase over the period as should the local demand for high skilled foreign workers.

For China and South-Asia there is expectation of strong global outflows, high levels of migration within the region and a growing level of opportunity in China in particular for skilled foreigners. China, Malaysia and Singapore could become strong educational magnets for students within and outside the region, while the growth of economies such as Indonesia, Vietnam and possibly Thailand could reduce outflows significantly and increase in-migration of top talent. For Africa, the expectation is that outflows could rise initially with economic progress while environmental factors could also increase demand push. A rise of short term contracts in the OECD is expected to increase circular migrant flows and return flows are expected to rise as income disparities reduce.

The Middle East is expected to see a rising outflow of students and business professionals coupled with strong return flows. The Gulf States are expected to maintain a strong reliance on guest workers except under scenario four – Globalisation Falters. For Latin America and the Caribbean, economic advancement is expected to increase outflows – especially to the US. Economic migrants are expected to increase under the low growth scenarios while return migration is anticipated longer term under the more positive outlooks. For the Russian Federation and Central, Eastern and South East Europe the key is political stability, without it demand push could increase dramatically. Under the positive scenarios, outflows for the region are expected to increase but domestic opportunity is also projected to rise in most countries. Circular flows are expected to increase later in the period as is the level of migration within the region.

Table 4.2. **Possible implications for source regions under each scenario**

Source Region	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
South Asia	• Domestic labour demand – rising in India – limited growth in Bangladesh / Pakistan due to political, social and security tensions • Temporary decline to 2012 followed by strong outflows of skilled labour to OECD importing countries through to 2020 • Gradual reduction in annual outflows 2021-2030 as OECD retirement ages rise • Strong return flow to India of graduates and experienced workers • Steady flow to Gulf of professional (especially healthcare), semi and low-skilled workers • Professionals in demand in stronger developing economies • High student outflow to OECD / other states • A more fundamentalist Pakistan could see strong outflows	• Domestic demand – rising in India – flat or declining in Bangladesh / Pakistan • Temporary decline to 2012 followed by strong outflows of skilled labour to OECD importing countries through to 2020 • Gradual reduction in outflows 2021-2030 • Small return flow to India of graduates and professionals • Steady flow to Gulf of professional (especially healthcare), semi and low-skilled workers • Professionals in demand in stronger developing economies • High student outflow to OECD • A more fundamentalist Pakistan could see strong outflows • Environmental refugees rise if climatic risks go un-managed	• Marked decline in Indian domestic demand – Pakistan and Bangladesh face regular recessions • Limited opportunities for specialist skills from India • Social / political tensions and concerns restrict opportunities for skilled Pakistanis and Bangladeshis • Restricted educational opportunities in OECD • Strong return flow to India of graduates and professionals • Continued demand for professionals, semi-skilled and unskilled staff from Gulf States • Professionals in demand in stronger developing economies • A more fundamentalist Pakistan could see strong outflows	• Intense competition in domestic markets for limited opportunities • Very selective opportunities for top talent in OECD • Intense competition in global markets for opportunities amongst professionals from developed and developing nations • Steady demand for lower skilled staff in Gulf states • Limited educational opportunities in OECD • Any shift to a more fundamentalist state could see strong legal and illegal outflows from Pakistan • Environmental refugees rise if climatic risks go un-managed	• Very limited opportunities for top talent in OECD • Rising demand for skilled professionals in India – steady rise in OECD workers • Slow progress and gradual rise in opportunity in Bangladesh and Pakistan • Rising demand for all skill levels in Gulf States • Growing demand for professionals in stronger developing economies • Steady return flow of all classes of labour from OECD

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Table 4.2. **Possible implications for source regions under each scenario** *(continued)*

Source Region	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
China and South East Asia	• Strong flow of students and professionals to OECD and fast developing economies • Growing return flows of students / professionals • High Gulf State demand for all skill levels • Growing levels of intra-regional migration • Strong demand through to 2020 for semi-skilled and unskilled workers from net importing OECD nations – demand tails thereafter • Increasing outflow of business people in line with global expansion of Chinese businesses	• Strong flow of students and professionals to OECD and non-BRIC fast developing economies • Moderate return flows of students / professionals • High Gulf State demand for all skill levels • Growing levels of intra-regional migration • Strong demand through to 2020 for semi-skilled and unskilled workers from net importing OECD nations – demand tails thereafter	• Strong flow of students and professionals to OECD and fast developing economies • Moderate return flows of students / professionals • High Gulf State demand for all skill levels • Growing levels of intra-regional migration • Strong demand through to 2020 for semi-skilled and unskilled workers from net importing OECD nations – demand tails thereafter	• Limited opportunities for highest skilled in OECD • Rising domestic unemployment creates migrationary pressures • Increasing return flow of all skill levels from OECD and other economies • Limited demand and intense competition for semi- and unskilled roles in Gulf States	• Rising flow of professionals to China – especially from OECD states • Growing demand for all skill levels in the Gulf States • Rising export of Chinese professionals to other developing economies with expansion of Chinese businesses • Rapid increase of educational flows into China, Singapore and Malaysia

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Table 4.2. **Possible implications for source regions under each scenario** *(continued)*

Source Region	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Africa	• Rise in skilled migrants as educational standards improve in most countries • 2015-2030 – Some growing East and West African economies see increasing inflows of professionals and business people • Rising numbers of student outflows • Slow increase in return migration as domestic opportunities rise • Increased flow of all skill levels within the region and to Gulf States • Increasing flow of semi-skilled and unskilled workers on temporary contracts to net importing OECD states and other developing economies • Increasing demand from environmental refugees	• Rise in skilled migrants as educational standards improve in some countries • Rising regional migration as economic migrants to escape weak and failing states • Rising numbers of student outflows • Slow increase in return migration to stronger economies as domestic opportunities rise • Increased flow of all skill levels within the region and to Gulf States • Increasing flow of semi-skilled and unskilled workers on temporary contracts to net importing OECD states and other developing economies • Increasing demand from environmental refugees	• Growing gap between Africa's developing economies and LDCs • Opportunities for highest skilled in OECD and BRIC economies • Increased flow of all skill levels within the region and to Gulf States • Rising regional migration as economic migrants to escape weak and failing states • Moderate student outflows from stronger regional economies • Limited return migration to stronger economies • Increasing flow of semi- and unskilled workers on temporary contracts to net importing OECD states and other developing economies • Increasing demand from environmental refugees	• Many nations seen to be falling behind with limited global assistance to recover • Very limited global opportunities for highest skilled • Rising regional migration as economic migrants to escape weak and failing states • Limited educational outflows • Growing influx of professionals from OECD seeking to work on development projects	• Rise in skilled migrants as educational standards improve in most countries • Some East and West African economies could see increasing inflows of professionals and business people in the period 2015-2030 if growth continues unabated • Rising numbers of student outflows to other developing economies • Strong increase in return migration as domestic opportunities and wages rise relative to OECD • Increased flow of all skill levels within the region and to Gulf States • Growing influx of OECD professionals seeking to work on development projects

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Table 4.2. **Possible implications for source regions under each scenario** *(continued)*

Source Region	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Middle East	• Rising student outflows as economic development increases wealth across several states • Regular outflow of professionals to OECD and other developing economies • Steady return flow of students and professionals to Gulf States • Strong circular flow of all skill levels within the region • Gradual rise in domestic competition for talent and incentives to stay in Gulf States as pressure to meet "nationalisation" targets increases • Rising outflow of professionals as ME businesses expand	• Rising student outflows as economic development increases wealth in Gulf states • Regular outflow of professionals to OECD and non-BRIC developing economies • Steady return flow of students and professionals to Gulf States • Strong circular flow of all skill levels within the region • Gradual rise in domestic competition for talent and incentives to stay in Gulf States as pressure to meet "nationalisation" targets increases • Rising outflow of professionals as ME businesses expand	• Rising student outflows as economic development increases wealth in Gulf states • Regular outflow of professionals to OECD and BRIC economies • Steady return flow to Gulf of students / professionals • Strong circular flow of all skill levels within the region – increase in economic migrants from poorer nations • Gradual rise in domestic competition and incentives to stay in Gulf States as pressure to meet "nationalisation" targets increases • Rising outflow of professionals as ME businesses expand	• Moderate student demand from Gulf States • Increasing circular regional flow of economic migrants at all skill levels • Locals increasingly displace guest workers in the Gulf States as international opportunities dry up	• Rising student outflows to OECD and other economies • Regular outflow of professionals to BRIC economies • Rising return flow to Gulf of students / professionals • Significant increase in opportunities across the region • Strong circular flow of all skill levels within the region • Rising outflow of professionals as ME businesses expand internationally – particularly to non-OECD states

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Table 4.2. **Possible implications for source regions under each scenario** *(continued)*

Source Region	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Latin America and the Caribbean	• High flows of all skill levels to net recipient OECD countries – especially Mexico to USA – and to other developing economies • Economic advancement brings growing student outflows to OECD and other developing economies • Rising circular flows within the region	• High flows of all skill levels to net recipient OECD countries – especially Mexico to USA – and to other developing economies • Economic advancement in many nations brings growing student outflows to OECD and other non-BRIC developing economies • Rising circular flows within the region – increasing numbers of economic migrants	• High flows of all skill levels to net recipient OECD countries – especially Mexico to USA – and to other developing economies • Economic advancement in many nations brings growing student outflows to OECD and other developing economies • Rising circular flows within the region – increasing numbers of economic migrants	• Increasing restrictions on migration to the USA and other OECD economies – limited opportunities for professionals • Limited student outflows to OECD and other developing economies • Growing numbers of economic and political migrants within the region	• High flows of all skill levels to other developing economies and some net recipient OECD countries – especially Mexico to USA • Economic advancement brings growing student outflows to OECD and other developing economies • Increasing opportunity within the region • Rising circular flows within the region at all skill levels

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Table 4.2. **Possible implications for source regions under each scenario** *(continued)*

Source Region	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Russian Federation and Central, Eastern and South East Europe	• Economic growth brings rising student outflows • Strong demand for skilled professionals across OECD, developing economies and some Eastern European states • 2010-2020 High demand for semi-skilled and unskilled workers – particularly from OECD states in Europe and other EU members • Strong return flows of students / professionals • Rising domestic opportunities increases competition at all skill levels • Growing circular migration of all skill levels within Eastern Europe and South East Europe	• Growth in some countries brings rising student outflows • Strong demand for skilled professionals across OECD and non-BRIC developing economies and some Eastern European states • 2010-2020 High demand for semi- and unskilled workers – particularly from OECD states in Europe / other EU • Moderate return flows of students / professionals • Rising domestic opportunities in stronger economies increases competition at all skill levels • Some circular migration of all skill levels within Eastern Europe and South East Europe	• Growth in some countries brings rising student outflows • Strong demand for skilled professionals across OECD and developing economies and some Eastern European states • 2010-2020 High demand for semi- and unskilled workers – from OECD states in Europe / other EU • Moderate return flows of students / professionals • Rising domestic opportunities in stronger economies increases competition at all skill levels • Some circular migration of all skill levels within Eastern Europe and South East Europe • Increase in economic and political migrants	• Limited demand at all skill levels, domestically, within the region, across the OECD and other developing economies • Very limited student outflows • Increasing numbers of political, economic and environmental refugees • High return flow at all skill levels	• For most countries – rising opportunities at all skill levels domestically, across the region and in other developing nations • Strong student outflows within the region and to other developing economies • High return flow at all skill levels

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Migrationary impact of key pull factors under each scenario

Table 4.3 below draws on the Immigration Scenarios developed by B.L. Lowell and presented earlier in this report. The analysis assesses the potential strength of the Pull factors under each scenario. As can be seen, the net level of in-migration to the OECD is expected to stay positive under the first four scenarios and to be moderately positive or flat under scenario five – Decoupled Destines. Our expectation is that social receptivity could increase under the positive scenarios as OECD country populations become increasingly aware of the challenges of population decline and an ageing society. However, such receptivity could disappear and be replaced by more hostile attitudes under the more negative outlooks for OECD states presented in scenarios four and five.

Net migrationary impact of inflows and outflows for OECD countries

Table 4.4 below uses the framework and rankings for the Immigration Pull Factor Analysis (Table 4.16) by B.L. Lowell presented earlier in this report to assess the likely net Migrationary impact of inflows and outflows for each scenario. The analysis for Table 4.4 combines the Pull and Push Factor analysis conducted for this OECD/IFP study with our broader economic analysis for each scenario to develop an assessment of the likely balance for each OECD country.

Under scenario one – Progress for All, the highest levels of net inward migration are expected for seven countries – Australia, Luxembourg, the United States, Belgium, Korea, New Zealand and the United Kingdom. The lowest levels of net inward migration are expected for four countries – Austria, Ireland, Denmark and Norway.

Table 4.3 highlights that in-migration is expected to stay positive or neutral under all scenarios. However, for Table 4.4, when out-migration effects are taken into account, by 2030, the expectation is that under scenarios four and five, for many OECD nations, net migration could be flat or negative. This is based on a combination of factors – rising working age, declining economic performance, a rising outflow of skilled and semi-skilled workers in search of opportunities, a decline in foreign students, increasing return flows to sender countries as income inequalities reduce and a major contraction in opportunities for foreign workers in the OECD. Indeed, under scenario five – Decoupled Destinies – the expectation for 29 of the 30 OECD countries is that net inward migration will be flat or negative – only Luxembourg is expected to maintain a positive or neutral level.

Applying the scenarios

A natural temptation is to define a single set of assumptions and policy options to handle future migration challenges. However, the analysis presented here highlights that there is and will continue to be a high level of uncertainty over the key factors shaping the short, medium and longer term economic outlook for OECD countries, developing economies and LDCs. To handle those uncertainties we need to consider a range of possible scenarios and "rehearse the future" to determine what our national priorities and policy responses might be under each scenario.

It is extremely unlikely that the future will unfold exactly as described in any of the scenarios set out above, although many of the features may come to pass. The power of the scenario approach is that it enables us to think about a range of possibilities and define coherent and consistent responses. These in turn enable us to develop flexible policy tools that can work under a broad range of possible futures. The scenarios also provide a "wind tunnel" against which to test existing migration policies and procedures to see how effectively they deliver on our national priorities objectives in each case.

Table 4.3. **Migrationary impact of key pull factors under each scenario**

Pull Factors	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Economic	++++	+++++	+++++	++	+,0
Demographic	+++++	+++++	+++++	+++	+
Social Networks	+++++	+++++	+++++	+++	+,0
OECD Domestic Skill Supply	+++++	+++++	+++++	++	0, -
Social Receptivity	+++	+++	+++	- -	- - - - -
Educational Opportunity	+++++	+++++	+++++	+	0, -
Competition from BRIC Economies	+++++	0, -	+++++	0	+++++
Level of Migration to OECD	+++++	+++++	+++++	++	+, 0
Primary Composition of Migrant Flow	Skilled Semi-Skilled Unskilled Permanent and Temporary	Skilled Semi-Skilled Unskilled Permanent and Temporary	Skilled Semi-Skilled Unskilled Permanent and Temporary	Skilled Primarily Temporary	Highly Selective Skilled Sectors Primarily Temporary

Table 4.4. **Anticipated net migration by OECD country under each scenario**
High, Medium, Low = Net, level of in-migration, 0 = no net in-migration, - = net out-migration

Country (Ranked by Economic Pull Factor Analysis)	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Australia	H	H	H	L, 0	0, -
Finland	M	M	L	L, 0	0, -
Netherlands	M	M	M	L, 0	0, -
Austria	L	L	L	0	0, -
Japan	M	M	M	0, -	0, -
Luxembourg	H	H	M	L	L, 0
Ireland	L	L	L	0, -	0, -
Denmark	L	L	L, 0	0	0, -
United States	H	H	H	L, 0	0, -
Belgium	H	H	M	L, 0	0, -
Italy	M	M	L	0, -	0, -
Korea	H	H	M	L, 0	0, -
Iceland	M	M	M	L, 0	0, -
Switzerland	M	M	L	L, 0	0, -
Spain	M	M	L	L, 0	0, -
Germany	M	M	L	L, 0	0, -
Canada	M	M	L	L, 0	0, -
New Zealand	H	H	H	L	0, -

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Table 4.4. **Anticipated Net Migration by OECD Country under Each Scenario** *(continued)*
High, Medium, Low = Net, level of in-migration, 0 = no net in-migration, - = net out-migration

France	M	M	L	L, 0	0, -
Sweden	M	M	L	L, 0	0, -
Portugal	M	M	L	L, 0	0, -
United Kingdom	H	H	M	L, 0	0, -
Norway	L	L	L, 0	0, -	0, -
Czech Republic	M	L	L, 0	0, -	0, -
Poland	M	L	L, 0	0, -	0, -
Slovakia	M	L	L, 0	0, -	0, -
Hungary	M	L	L, 0	0, -	0, -
Mexico	M	M	L, 0	0, -	0, -
Turkey	M	M	L, 0	0, -	0, -
Greece	M	L	L, 0	0, -	0, -

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Annex 4.A1

Scenario Planning Methodology

The key steps in developing these scenarios were as follows:

- The team from the OECD/IFP and Fast Future developed four "baseline" scenarios for discussion at the July 2008 preparatory experts' workshop Paris.
- At the July 2008 preparatory experts' workshop:
  - The participants were introduced to the approach to scenario building that would be adopted for this project
  - The participants then reviewed the material collated by the OECD team on "Pull" (OECD related data) and "Push" factors (Non-OECD country data) that could have an influence on migration to OECD countries
  - A brief discussion was held on possible additional factors to consider
  - The four baseline scenarios were then presented for participants to review and discuss
  - Participants were then asked to vote for the top push and pull factors that would have the greatest bearing on the scenarios and a prioritised list was developed of those factors to be considered during the meeting
  - Four groups were then formed and each group was asked to explore the implications of the prioritized lists of Push and Pull factors on one of the scenarios
  - The groups were also asked to consider possible wildcards in their scenario and the implications and challenges for policy makers
  - Finally each group presented back a summary of the key features, insights, policy implications and challenges for their scenario
  - A key recommendation was on the need for a fifth scenario – Decoupled Destinies

- The outputs and recommendations from the focus Group were then factored in to develop a more detailed description and analysis of the five scenarios. This document was circulated to a range of experts for review in November 2008
- The scenarios were then presented and discussed at the OECD/IFP Future of International Migration to OECD Countries Experts' Workshop in December 2008.
- The feedback from the expert workshop was factored in to create the final version of the document.

Annex 4.A2

The Five Baseline Scenarios: Breakdown by Key Parameters

The five baseline scenarios – breakdown by key parameters					
Scenario Parameter	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Geopolitical Outlook	• Overall good collaboration between key regions and countries such as China, Russia, India, the European Union, Japan, and the United States – and perhaps also the Middle East – leads to successful international cooperation.	• Relatively benign context for international co-operation on most fronts – economic, environmental, military – despite potential for BRICs to run into strong headwinds at different points out to 2030 • OECD countries take the lead on driving the development agenda for the non-BRIC developing economies and LDCs	• Key emerging economies such as China, Russia, India, and perhaps also some Middle Eastern countries play out their dominance against other, more vulnerable states • Developed nations may also pursue a more aggressive stance on global intervention – particularly to secure natural resource supplies and prevent domestic and regional conflicts • Globalisation continues but at somewhat slower rates than in Scenario 1 • Lower economic growth for certain developing nations may lead to aid flows slightly higher than in scenario 1	• Deterioration of international cooperation among key regions and countries such as China, Russia, India, the European Union, Japan and the United States and perhaps also some Middle Eastern countries. • Reduced economic development leads to greater tensions in and between poorer nations – particularly over critical resources such as water	• Potential for new political institutions to evolve to focus on the needs of developing nations and LDC's – reduced interest from the developing world in institutions such as the UN, World Bank, IMF and OECD • Growth economies challenge the established order, leading to frosty relations, especially between the BRICs and the OECD nations. • Emerging economies and LDC's show increasing levels of collaboration. • Aids flows are dramatically reduced from OECD

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The five baseline scenarios – breakdown by key parameters *(continued)*					
Scenario Parameter	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Socio-Economic Development	• Continued globalization. • Broad-based progress (albeit at different speeds) towards improved living standards across non-OECD economies • Steady improvement in internal distribution of incomes within non-OECD countries – leading to overall reduction in poverty	• Growth and global integration stall for the BRICs as they increasingly run into home-made problems (e.g. inflation, underinvestment in critical infrastructure, disruptive regional inequalities, poor governance, etc.) and labour markets slacken significantly; • OECD countries succeed in sustaining good levels of growth led by a renaissant US and more innovative Europe; • Emerging economies other than the BRICs succeed in strengthening trade and investment ties to OECD countries thereby compensating for shrinking markets in the BRICs.	• Progress towards higher living standards across non-OECD countries • Strongest performance comes from the emerging economies (BRICs, some Central European and SE Asian economies, some LA countries, oil rich ME states, South Africa) • Many less developed countries left behind in the race for growth • Internal distribution of income improved but not significantly in both developed and developing nations	• Slowing pace of Globalisation generates sharp divisions between winners and losers • Social and political concerns about income distributions, labour market outcomes and environmental impacts act to significantly restrain the pace of integration. • Slow progress on further removal of impediments to trade and investment due to declining growth and increasing inherent complexity of multilateral negotiations.	• The pace of OECD-driven Globalisation slows, but increases for developing-economy based firms • Steady socio-economic progress made by the emerging economies especially BRICs and also by many of the LDCs • FDI flows continue apace but their sources diversify. Investment from OECD governments declines but emerging economies pick up the slack in their rush to expand. • OECD based firms continue to diversify and invest globally in search of new opportunities • Distribution of income is improved in the emerging economies with encouraging signs of progress in LDCs, but the majority OECD nations stall

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The five baseline scenarios – breakdown by key parameters *(continued)*					
Scenario Parameter	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Global Economy and Trade	• Average annual growth rates (2000 PPP USD): – World: 4-4.5% – OECD: 2.5% – Non-OECD: 5-6% – China: 7.5% – India: 6% – Africa/ME/LA: 3.5-4.5%. • Average annual per capita income growth: OECD – 2%; non-OECD – 5%. • World trade integration continues at a rapid pace thanks to successful future WTO rounds, increased FDI flows, increased aid flows and further debt cancellation.	• Average annual growth rates (2000 PPP USD): – World: 3.5-4.0 – OECD countries grow at 2.5% or more – Non-OECD: 4-5% – China: 3-5% – India: 2-4% – Africa/ME/LA: 3.5-4.5%. • Average annual per capita income growth: over 2% for OECD countries; non-OECD – 3-4%. • World trade and investment flows continue apace, but driven largely by the growing integration of emerging economies (other than the BRICs); • Stalling growth in the BRICs has lower than expected impact on overall trade and investment levels since approximately 70% of trade and around 90% of FDI holdings remain concentrated within the OECD area.	• Average annual growth rates (2000 PPP USD): – World: 4.-4.5% – OECD: 2-2.5% – Non-OECD: 5-6% – China: 8%+ – India: 6%+ – Africa/ME/LA: 2.5-3.5%. • Average annual per capita income growth; OECD – 2%; non-OECD – 5% (but widening gap between emerging and less developed countries as the former press ahead with structural reforms). • World trade and investment flows continue apace, but driven largely by the growing integration of emerging economies compared to slower integration of LDCs; • Aid flows slightly higher than in scenario 1.	• Average annual growth rates (2000 PPP USD): – World: 1.5-2.0% – OECD: 0.5-1.5% – Non-OECD: 2-4% – China: 4-6% – India: 3-5% – Africa/ME/LA: 1.5-2.5%. • Average annual per capita income growth: OECD – 0.5-1.0%; non-OECD – 1-3% • Entrenched gap between emerging economies and LDCs as the appetite for structural reforms decreases, especially in LDCs • Trade, investment and aid flows slow significantly	• Average annual growth rates (2000 PPP USD): – World: 3-4% – OECD: 0.5-1.5% – Non-OECD – 6-7% – China: 8%+ – India 7%+ – Africa/ME/LA: 3.5-5.0%. • Average annual per capita income growth: OECD – 1%; non-OECD – 5-6% • Increasingly strong integration of emerging economies and LDCs • The beleaguered OECD states withdraw from many of their positions in the developing world as they move from one shock to the next that serves to depress growth on a regular basis in the period to 2030 • Strong growth from emerging producer economies spurs larger volumes of trade between emerging and less developed economies

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The five baseline scenarios – breakdown by key parameters *(continued)*					
Scenario Parameter	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Resources / Commodities	• Oil prices fall back from high levels of 2008 as oil production increases, new fields come on stream, use of alternative energy sources increase and fuel efficiencies kick in triggered by initially high prices. • Food prices peak around 2014-2015 and fall back to more modest levels as additional land comes on stream and agricultural innovation and trade accelerates.	• Commodity prices gradually fall from high levels of 2008 as demand from BRICs declines and oil and food supplies increase in reaction to high prices early in the scenario period.	• Oil prices fall back from high levels of 2008 as oil production increases, new fields come on stream, use of alternative energy sources increase and fuel efficiencies kick in triggered by initially high prices. • Food prices peak around 2014-2015 and fall back to more modest levels as additional land comes on stream and agricultural innovation and trade accelerates.	• Commodity prices remain uncomfortably high although lower world demand contributes to restrain oil prices, • Oil supply difficulties persist and the more tense international atmosphere is not conducive to new multinational ventures to open up and operate new fields • Pace of development of alternative energy sources slows due to lack of investment • Population pressures continue to keep food prices at high levels with little prospect of agricultural innovation and trade relieving serious food bottlenecks in many developing countries.	• Oil Prices remain high as a result of high demand but food prices stabilise as bread basket countries produce higher yields on the back of growth and development. • Transfer of innovation and best practice helps drive up agricultural yields in many developing nations and LDCs. • Investment in alternative energy in developing economies helps alleviate pressure on fuel prices

The five baseline scenarios – breakdown by key parameters *(continued)*					
Scenario Parameter	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
• **Environmental concerns** • **Food security – food demand growth rates, food prices** • **Environmental degradation – environmental refugees, pressure on arable land**	• Advancement in agricultural techniques reduces global pressure on food supply and manages to keep in line with the growth in population rates born of longer life spans. • Environmental degradation remains a pressing issue. • International efforts to reduce the effects of climate change and cut GHG emissions help slow pressure on arable land and on the agriculture of much of the third world. • Particularly dry areas still suffer but the benign geo-political atmosphere encourages in migration and the international community accommodates those displaced peoples.	• This scenario will see the OECD cope well with the problem of food supply while the non-OECD states struggle. • The OECD acts to reduce GHG's but their efforts are not replicated in the less well funded emerging and LDC economies, mitigating their efforts. • Environmental degradation continues relatively unchecked in the developing world and poorer countries experience many of the worst impacts • A booming OECD increases environmental aid flow, the effects of which are seen in the mid to late stages of the scenario.	• Agricultural investment and innovation help ensure security of food supply in the OECD and many emerging economies. • Conversely, for LDCs, growth in crop yields remains static and agricultural advancements are slow to diffuse from the developed world – possibly leading to increased LDC migration to the developing world and OECD. • Forced migration from those areas affected by environmental degradation increases. • The developing world experiences a number of ugly conflicts over access to arable land. • The OECD may act to reduce environmental impacts but the emerging economies, desperate to maintain growth, resist efforts at regulation.	• As food prices remain stubbornly high, efforts to increase production to reduces prices and alleviate hunger are stymied. • The OECD's poor economic performance acts to deflate aid flows. • Negative economic and geo-political conditions block international efforts to end food and environmental crises. • Environmental degradation creates high levels of forced migration, whether from drought, flood or resulting conflicts. • International co-operation on the reduction of GHGs is almost non-existent. • Multiple factors combine to create havoc in the developing world. High food and commodities prices force ever greater numbers of people into poverty and migrationary pressures spike. • Developed countries are loath to accept large waves of environmental migrants. • High occurrence of illegal migration into the OECD.	• Although the strong performance of the developing world helps to allay many food supply problems, the rapidly expanding ranks of the middle classes increase demand for meat products straining agricultural supply. Such demand increases prices and lowers development. • The poor performance of the OECD means that environmental reform is put on the back burner • Without the pressure the OECD would usually exert on the developing world to cut emissions, fast industrialising economies may contribute to a net increase in GHG emissions in the period to 2020 • Some improvements on GHG emissions occur from 2020 to 2030. This trend intensifies environmental degradation and acts increase migrationary pressure. • A return to international environmental activism is not seen until the later stages of the scenario time line.

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The five baseline scenarios – breakdown by key parameters *(continued)*					
Scenario Parameter	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Technology – Technological advancement, connectivity and diffusion	• Increased mobile phone, pc and broadband take-up across the developing world increase interconnectedness, helping to bring LDC's into the 21st century. • Technology diffusion continues apace as emerging and developing economies are better able to implement enabling structural reforms, aided by strong economic growth. • The resulting job growth helps reduce migratory pressures • The growth of technology markets strengthens demand for skilled migrants in the developed and emerging economies, increasing the already fierce competition for top talent.	• Prolonged growth enables technological advancement in OECD states to progress at a faster pace than expected • Limited availability of investment funding in the BRICs and other non-OECD states limits the potential for R&D and adoption of innovations that would drive growth, structural reforms and social improvement thus increasing migrationary pressures. • Strong and prolonged growth by OECD states drives demand for technologically skilled migrant labour and accelerates the international brain drain – exacerbating the problems of the emerging economies and the LDC's in particular.	• For LDC's poor economic growth and limited inward investment from the technology sector lead to a slow pace of technological advancement – making it harder to retain more highly skilled workers. • The emerging economies use technology and innovation to propel them into a position where they increasingly retain their best domestic talent and attract inflows from developed, developing and poorer nations alike. • The OECD countries maintain a lead in technological innovation, aided by the steady stream of skilled migrants as a result of the brain drain they enjoy from the developing world – although competition for top talent intensifies.	• The negative geo-political environment dramatically reduces technological diffusion. • The LDC's are especially hard hit, inward technology investment declines and growth in mobile, pc and broadband take up slow amidst dire economic projections. • The absence of strong foreign markets for OECD technology firms and poor growth projection slows demand for skilled migrants. • Sluggish competition for skilled migrants as emerging economies are unable to compete with the OECD. • Declining formal opportunities could see a commensurate rise in illegal migration.	• Rapid improvements in the power infrastructure of developing countries aids the diffusion of technology, while increased spending power increases its utilisation, both on a national and personal level. • Technological diffusion is especially strong between the emerging and less developed economies as they forge close ties through trade, and multilateral treaties and bi-lateral agreements. • OECD states are still the world leaders in technology but the rapid pace of advancement in the developing world begins to level the playing field as more OECD firms look to developing markets for expansion and transfer in their technologies • As technology spreads so will the level of circular high skill migration between OECD states, emerging economies and eventually, the LDCs. • This scenario will not see a brain drain so much as a brain conveyer as skilled workers interchange or even migrate multiple times, accelerating diffusion and fostering innovation.

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The five baseline scenarios – breakdown by key parameters *(continued)*					
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Infrastructure • **Capability of/ pressure on physical infrastructure** • **Education infrastructure** • **Health Infrastructure**	• Excellent economic performance drives increased spending on infrastructure in the emerging economies and LDC's to provide a backbone for future growth and social development • A healthy proportion of spending goes on education and health. • As improved health care and education are rolled out, migrationary pressure decreases. Higher levels of education in the developing world have the added benefit of improving many other social indicators, further mitigating migrationary pressure. • The LDC's begin to tackle endemic health crises in earnest, creating an environment conducive to development and welcoming to FDI. • As conditions improve the pool of skilled migrants will shrink driving a ferocious level of competition, particularly between OECD countries and the BRICs	• Emerging economies and LDC's struggle to fund their burgeoning infrastructure requirements and the terms asked by international investors make this an infeasible option for many projects • However, the OECD countries are more willing to underwrite the cost of vital development efforts through aid packages. Progress is slow however, and many states are loath to be saddled with more debt or place themselves under the control of developed nations, the World Bank or IMF. • Increased aid and the resultant increase in development help to slow migration – but levels are still high as the OECD countries continue to lures away the cream of non-OECD states' human capital.	• The BRICs and other emerging economies are able to push ahead with infrastructure development, health and education reforms • These investments enable countries to retain a growing percentage of their human capital, compete with the OECD nations for skilled migrants and eventually coax their own nationals from positions abroad. • The LDC's on the other hand are unable to push through similar developments which limits opportunity and increases migrationary pressures	• Progress is stalled as poor economic performance and a competitive, isolationist geo-political environment take their toll. • Though emerging economies are not as badly affected as the LDCs, their ability to implement health and educational reform are badly compromised, harming their development. • The developed world has limited ability or inclination to aid the non-OECD states as their own economies slow or stagnate. • Migrationary pressures increase across the board, inundating an OECD generally unwilling to accept great numbers of migrants.	• As the non-OECD states grow, investment in infrastructure becomes a critical priority to expand economic prospects and retain the best talent. • Although OECD countries will continue to have leadership on infrastructure, the poor economic conditions that prevail could deter a number of migrants who may go to emerging economies instead. In this scenario the OECD will be but one stop in a circular conveyor of skilled migrants.

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The five baseline scenarios – breakdown by key parameters *(continued)*

Scenario Parameter	Scenario 1 "Progress for All"	Scenario 2 "OECD Long Boom"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Regional co-operation and international aid • **Creation of regional institutions in the developing world** • **Managing aid and donations** • **Effects of corruption – improving governance and reducing corruption**	• Regional and pan-regional institutions flourish as the spread of globalization and political goodwill encourage trade and political collaboration. • Close political and economic linkages help diversify the flow of migrants, breaking the traditional non-OECD to OECD dynamic as people become increasingly "global" in their outlook. • As emerging states and LDC's develop they make great strides in eradicating corruption and fostering transparency in political and business governance. • Progress in governance begets massive increases in aid and FDI inflows as the developing world gains the confidence of the OECD countries. • Migration increases but people travel to a far wider range of destinations, helping the spread of technology and aiding innovation in developing economies. • Competition for skilled labour is unrelenting as migrants enjoy an abundance of choices.	• The excellent performance of OECD countries helps strengthen ties between member states. The corollary is an increased desire to exert influence on non-OECD states in return for aid. • Lower than expected economic growth hinders the development and integration of the BRICs and LDC's. • The reliance of LDCs on aid flows begets a rush to reduce corruption and increase transparency in governance and business, with the aim of establishing a base for future development. • During the scenario timeframe, actual progress in reducing corruption in LDCs and emerging economies is slow and migratory pressure increase accordingly. • The lack or regional co-operation for LDCs, and in some cases, emerging economies means that migrant flows are still largely focused on richer countries with the OECD taking the largest share.	• This scenario sees greater integration among the emerging economies and increased assertiveness towards the OECD states. • Unless supported by the emerging economies, the LDCs may suffer as a result and become marginalized. • Aid flows are slightly increased on 2008 levels but without the support of regional institutions, and under pressure from the OECD and emerging economies, development is slow. • LDCs still labour under the twin blights of corruption and inefficiency and are thus unable to benefit fully from international aid flows. • Structural reforms and social progress are hampered and migratory pressure increases.	• Aid flows are reduced as a result of poor global economic conditions. • Corruption and poor governance combine to squander a proportion of the aid the developing world still receives. • An unstable environment prevails in the emerging economies as struggling governments fail to quell corruption and structural reforms fail to bed in. • The OECD's economic travails force countries to disengage somewhat from the non-OECD states. • The miasma of mistrust that pervades geo-politics acts against the creation of regional or pan regional co-operatives and even established institutions such as ASEAN struggle to engender development efforts. • Migratory pressures are increased but economic conditions act to halt actual migration leading to a spike in illegal migration, especially of unskilled workers.	• Intense competition for resources, trade competition and geo-political issues drive a wedge between the OECD and emerging economies. • With contrasting economic priorities and prognoses, the OECD states are somewhat sidelined from the collaboration of the emerging economies and the LDCs. • Developing countries create strong trading and political alliances – accelerating and diversifying migrantion flows. • Aid flows are reduced because of poor economic conditions in the OECD. What is left is used more efficiently as the combination of increased growth, regional collaboration and a growing middle class act to improve the quality of government and reduce corruption. • Improvements in governance are also responsible for increasingly efficient structural reforms and social progress. • Migration increases within the non-OECD world as co-operation and collaboration spread. • Migration to the OECD decreases. • High volume of circular movement of high skilled workers between increasingly stable states.

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The five baseline scenarios – breakdown by key parameters *(continued)*					
Scenario Parameter	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Competition for resources • **Competition for resources** • **Security of supply – geo political machinations or upheaval in supply states** • **Energy source diversification**	• As benign economic conditions prevail, funds are widely available for investment in sustainable and supplementary energy supplies. As these sources come on stream and are able to contribute significantly to supply, competition for resources declines. • The benevolent geo-political environment reduces disruptions caused by unrest (political or security based) in supply states, helping to lower prices and increase investor confidence. Energy FDI increases. • Energy source diversification helps to spread technology and human capital throughout the world, aiding development and reducing migrationary pressures. • The OECD will still seek out the world's best and brightest but will face increased competition from emerging economies and new players resulting from energy diversification.	• OECD states are far better positioned to compete with emerging countries for resources and to secure better prices from resource suppliers • Increased competition for resources drives up prices, fuels inflation and further limits growth in many emerging economies and LDCs – adding to migrationary pressures	• The two speed nature of this scenario works to further inequality. As the OECD and emerging economies seek to maximize their access to energy suppliers, LDCs will be further sidelined. • There will still be heavy spending on renewables in this scenario but the issue will receive less attention than under scenario 1 as the OECD and emerging economies compete for access to supply. • As LDC's are sidelined they are more likely to experience political or violent upheaval creating migrationary pressure and hindering development.	• As economic conditions worsen and all countries experience lower than expected growth, attention will be diverted from research and investment into renewables or diversifying supply as states seek to consolidate current supply sources.	• Intense competition for resources as developing countries (especially the emerging economies) consume record amounts of raw materials, while OECD states are already large consumers of these products and seek to maintain their positions. • As LDCs grow they become hungrier for raw materials creating ever more demand and thus driving up prices. • Intense competition will increase the urgency of efforts to introduce renewable energy, but there is less funding available within the OECD states during the economic downturn • The emerging economies will see significant uplift in investment in alternative sources in the period from 2015 onwards • The winners in the competition for resources will see a spike in production and growth and an increased demand for skilled migrants.

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The five baseline scenarios – breakdown by key parameters *(continued)*					
Scenario Parameter	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Security concerns • **Conflict** • **Internal instability**	• As all states enjoy economic growth, development efforts accelerate, structural reforms are enacted and social conditions improve. • Genial relations between states and the establishment of international institutions further decrease the likelihood of violent conflict, whether internal or inter-state. • A reduction in security concerns drastically reduces the number of political asylum seekers, internally displaced persons and illegal immigration. • The lack of security concerns reduces migratory pressure and helps emerging and developing economies to lure migrants from the developed world, fostering innovation and technological advancements.	• A dominant OECD is able, though not always willing, to act as global policeman to the developing world. • A deceleration in the pace of development in many emerging economies creates tension among populations who have come to expect improvements in their standard of living and the opportunities available to them. This could speed migration in itself and spark protest and disharmony (perhaps violent) which could further increase migratory pressure. • LDCs experience both internal and inter-state conflicts over political issues, territorial disputes, resources and access to water – thus increasing migratory outflows.	• As the LDCs struggle to compete with stronger states and experience poor economic performance and limited social development, the possibility of internal conflict increases. • The populations of developing states are more likely to protest against a lack of social development and foreign interference / domination. • Increased unrest is a strong migratory force, enabling the OECD and emerging economies to cherry pick skilled workers. • Migration proceeds along traditional lines, while toward the end of our timeframe the BRICs will begin to compete for skilled labour. • A possibility is that the OECD steps in to aid states that have been thrown into internal disarray. This might lead to a normalization of conditions and a move towards more sustained development.	• The toxic geo-political conditions prevalent in this scenario act to increase destabilizing factors in poorer countries and between states. • Developed nations will be generally unwilling or unable to intervene in regional or internal conflicts, creating an environment conducive to internal instability and violence. • The numbers of asylum seeks and internally displace persons increase. • Rising asylum applications place pressure on OECD states and neighbouring countries who are burdened with refugees they are unable to support and whose presence hinders their own development efforts and internal stability. • "Traditional migration" rises as professionals flee conflict zones and seek a higher standard of living.	• Internal stability in the developing world increases on the back of strong economic growth and high social development. • LDCs are far less likely to dissolve into political or violent strife, reducing migratory pressure.

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Annex 4.A3

Pull Factors: Potential Impact Under Each Scenario

Pull factors – potential impact under each scenario					
"Pull" Factor	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
GDP per capita	• OECD GDP per capita increases in line with inflation. Median reaches around USD 34,000. • The wage gap between OECD and non-OECD states narrows but remains at over 50%	• OECD GDP per capita increases above level of inflation. Median reaches around USD 36,000 • The gap between OECD and non-OECD states widens to over 50%.	• Median OECD GDP per capita reaches approximately USD 34,000. • The gap between OECD and BRIC states varies between 30-50%. The gap with some developing economies increases to over 60%	• OECD GDP per capita increases below the rate of inflation, making people poorer in real terms. Median falls below USD 30,000 • The wage gap between OECD and non-OECD states narrows but remains at over 50%	• GDP per capita will stagnate and will be outpaced by inflation within the OECD. Median reaches just USD 26,000 • The wage gap between OECD and non-OECD states varies between 30-50%
Foreign born population rate	• Median rate is 10% for OECD states. Korea is lowest with a rate of 0.3 and Luxembourg the highest with a rate of 32.6	• Median rate increases to around 12% as the OECD booms and overshadows the emerging world.	• Foreign born population rates increases but OECD faces competition as more migrants are drawn to emerging economies. Median rate rises to 11%	• Rates increase, but Median rises only marginally to around 9%.	• Rates decrease to 6.0% as the BRICs and emerging economies take a bigger share of migrant flows and LDCs enter the marketplace.

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Pull factors – potential impact under each scenario *(continued)*					
"Pull" Factor	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Age dependency ratio	• Median OECD ratio is 0.5, Mexico is the only state experiencing a higher rate with 0.6 • Continued growth drives the need to increase the percentage of economically active people in the population and those in employment • Drives the need to increase the productivity of workers through education and other factors	• Median OECD ratio stable at 0.5 with a long term downward trend.	• Median OECD ratio stable at 0.5 with a long term downward trend.	• Median OECD ratio stable at 0.5 with a long term upward trend as more people continue to work beyond retirement	• Median OECD ratio stable at 0.5 with a long term, and very slight, upward trend as reduced opportunity limits the potential for people to work post-retirement.
Key employment sectors	• OECD primarily engaged in services sector – increased service sector employment • Only Germany and the US have substantial manufacturing bases with 28 million and 125 million employed respectively. Italy, Korea and Spain have substantial but smaller manufacturing bases.	• Employment increases further in the services sector while manufacturing continues to decline. The USA sheds 10% of manufacturing jobs by 2030 • Need for training and education in order to increase numbers in employment	• Services sector expands while manufacturing continues to decline. The US sheds 6-8% of its manufacturing jobs by 2030	• Resurgence of local manufacturing as OECD firms bring plants back on onshore	• Decline in both service and manufacturing sectors in most OECD countries

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Pull factors – potential impact under each scenario *(continued)*					
"Pull" Factor	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Number in tertiary education	• Sharp rises in Tertiary enrolments. Western European Union (WEU) enrolments rise 73% to 130 million while Non-Aligned movement (NAM) enrolments rise 32% to 145 million by 2025	• OECD admissions increase across the board. WEU and NAM experience slight fall in admissions due to a reduced intake from the developing world. They enjoy percentage increases of 65-70% and 25-30% respectively.	• OECD admissions increase across the board. WEU and NAM's enrolments increase by 65-75% and 25-35%. Heavy competition for enrolments from emerging economies.	• Poor showing of non-OECD states increases interest in OECD institutions and enrolments soar. WEU and NAM increase enrolments by 75% and 35% respectively.	• Growth in OECD enrolment slows under pressure from poor economic performance and competition from non-OECD states. • WEU and NAM institutions increase enrolment by 60% and 25% respectively.
Economically active population (2020)	• In 2020 the world will have an economically active percentage of 64.4%. The OECD median will be 57.45%	• Economically active populations: World: 62% OECD: 60%	• Economically active populations: World: 61% OECD: 55-60%	• Economically active populations: World: 65% OECD: 55%	• Economically active populations: World: 65-70% OECD: 50-55%

Pull factors – potential impact under each scenario *(continued)*					
"Pull" Factor	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Total fertility ratio 2030 – 35	• World fertility rate is 2.14. The OECD median rate is 1.78	• World fertility rate is 2.3. The OECD median rate is 1.90	• World fertility rate is 2.0. The OECD median rate is 1.65	• World fertility rate is 2.0. The OECD median rate is 1.70 • Sluggish economic growth could reduce fertility rates. • A combination of economic and political shocks would likely worsen this effect and further reduce fertility rates. • More of a long term effect. Unlikely to have any impact in the short to medium term of our scenario time frame.	• World fertility rate is 2.14. The OECD median rate is 1.65

Pull factors – potential impact under each scenario *(continued)*					
"Pull" Factor	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Working population determinants/predictors • **Working age population (15-64), gender disaggregated, in absolute numbers, in 2005 and 2030** • **Median age of population in 2005 and 2030**	• The median for OECD citizens in 2030 will be 44 years old. • Luxembourg will age the slowest and Korea will age the fastest to an average of 48. • Working age populations will shrink as median ages increase.	• The median age for OECD states in 2030 will be 44 years old. • As the OECD grows in isolation, often at the expense of non-OECD states, median ages will continue to rise steadily and the working population will decrease.	• The median age for OECD states in 2030 will be 44 years old.	• The median age for OECD states in 2030 will be between 40-42 years of age. A slight reduction on scenarios 1-3 on account of the detrimental economic conditions • The median age in OECD nations will no doubt increase under this scenario but at a lower rate than scenarios 1 and 2 as economic growth slows.	• The median age for OECD states in 2030 will be between 39-41. This is on account of scenario 5 drawing the bleakest economic picture for the OECD • The working age population of OECD countries is set to fall while the median age will continue to rise. These changes will be minor in themselves but their ramifications will be widely felt

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Pull factors – potential impact under each scenario *(continued)*					
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Inflation • **Inflation, average consumer prices (annual percentage change) in 2006 and 2013**	• Broad down trend among OECD states. Approximate median rate of inflation stands between 2% and 2.5% in 2013. Relatively few states buck trend and exhibit a rise in inflation. • Favourable economic conditions and strong performance enable the OECD to maintain low interest rates throughout the timeframe after the rocky ride experienced during the credit crunch.	• OECD median interest rates stand between 2-2.5%	• OECD median interest rates stand between 2-2.5% • Low inflation may not be replicated across all OECD states and increased resource competition from emerging economies and resource hungry BRICs could drive global inflation	• Depending on economic policy OECD median interest rates fluctuate between1.5 and 5% • As globalization stalls and growth economic growth within the OECD stagnates, interest rates may be cut as governments and central banks seek to stimulate sluggish economies – which could in turn fuel inflationary pressures	• OECD interest rates rise across the board to a median of 4-5% • As OECD economies struggle and the price of oil remains above the USD 100 a barrel mark, inflation will remain a real worry.

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Pull factors – potential impact under each scenario *(continued)*					
"Pull" Factor	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Dual Citizenship • **Countries / Territories Allowing Dual Citizenship in Some Form**	• In such a benevolent political and economic environment, the notion of dual citizenship becomes somewhat outdated as many states relax border controls to further integrate themselves into a global economy.	• As the OECD booms, these developed countries will do everything possible to accommodate the influx of skilled workers they require. • Border restrictions between OECD states, already minimal, will be slackened further while those for skilled migrants from non-OECD states will be softened.	• With growth shared between the OECD and emerging economies, relations between these groups are cordial and border restrictions are light. • Dual citizenship is encouraged as is professional migration. • Barriers to migration are more intense for non skilled workers from LDCs.	• Amidst the political tension rife in this scenario an increasing number of countries strengthen the barriers to migration. • Dual citizenships rights are curbed, curtailing the movements of many habitual migrants and travellers, especially those from LDCs.	• Relations are strained between the OECD and the non-OECD world, as increasing competition, in both trade and geo-politics sour relations. • Co-operation on dual citizenship or border control / restrictions is limited, increasing the difficulty and cost of migration. • Relations between the emerging economies and LDCs are generally robust. • The BRICs are able to source natural resources from LDCs at low cost to feed their voracious economies while the LDCs themselves benefit from trading agreements and increased levels of FDI and political backing.

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Pull factors – potential impact under each scenario *(continued)*					
"Pull" Factor	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Foreign born population • **Foreign-born population by country of residence**	• The US has a total of 32 million foreign born citizens, almost 17 million of whom come from non-OECD states. Foreign born population could rise to around 40 million by 2030 • Germany has the second largest foreign born population with figures of 8 million and 4.5 million.	• As migration to the OECD increases, foreign born populations will increase as will the percentage of that population originating from non-OECD states. • This scenario will see a continuation of base trends for the OECD while the BRICs will see limited growth in their numbers of foreign born residents.	• Foreign born population rate and percentage from non-OECD states will both increase. • This scenario will witness less diversification than scenario 1 as a result of the asymmetric growth performance between the OECD, emerging economies and the LDCs.	• Tough economic conditions will reduce both the foreign born populations of OECD states as well as the proportion of those populations that come from non-OECD states.	• Foreign born populations fall, as do the proportions originating from non-OECD states. The decline is steeper than under Scenario 4

Data sources are listed in Annex 4.A6.

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Annex 4.A4

Push Factors: Potential Impact Under Each Scenario

Push factors – potential impact under each scenario					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Economically active population	• Economically active population rate changes to 2020: • World: -2.0% • More Developed Regions (MDR): -2.5% • Less Developed Regions (LDR): +2	• Economically active population rate changes to 2020: World: -1.5% MDR: -3.0% LDR:+2.5-3.0%	• Economically active population rate changes to 2020: World: -2.0% MDR:-2.5-3.0% LDR: +2.5%	• Economically active population rate changes to 2020: World: -1.5% MDR:-2.0% LDR: +3.0%	• Economically active population rate changes to 2020: World: -1.5% MDR: -2.0% LDR: +1.5% • As this is a generational trend we will see little change in the early stages of the scenario.

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Political stability, absence of violence (Current)	• Vast majority of non-OECD states under 50th percentile in governance rankings. Only four rank higher. • Median percentile of the 30 selected countries is 33.45% • High growth supports and strengthens political stability, subdues many domestic tensions and reduces the migrationary push factors particularly for previously unstable countries • Periodic incidences of domestic strife break out in some LDCs and within a handful of developing countries • Remittance levels should increase and help to reduce tensions in sending countries	• Likelihood of a slight decline in the median ranking as a result of increased tensions (See below). • Expected median of between 31%-33% • Increased religious and ethnic tensions possible within BRIC countries • Increasing potential for conflict between Russia and her neighbours and between India and Pakistan	• We can expect the median to experience a slight decline. Possible median of 32%-33.5% • Instability increases under this scenario in non-BRIC countries due to internal tensions.	• The instabilities detailed below promise to cause a trough in governance ratings. • In this scenario we can expect a governance median of between 27%-29% • Low growth could lead to domestic unrest and faster turnover of governments in some developing nations and LDCs	• If developing states can avoid the corruption that often comes with rapid development we may see a governance median rate of between 35% – 38%. Improvement will be less pronounced should development lead to despotism • Buoyant emerging economies and LDCs are able to deliver more rapid social development to their increasingly affluent, productive populations. • General prosperity and a strong emerging middle class mean that internal violence is infrequent • "Power corrupts" – strong growth and the commensurate spike in development may mask political misbehaviour, however, as sitting leaders use the good times to solidify themselves in power, things may come to a head if and when this boom cycle turns.

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Enrolment in tertiary education	• All developing regions show growth in tertiary enrolments. China, India, South East Asia and Sub Saharan Africa (SSA) perform best, each exhibiting over 200% growth by 2030. • More money is available for education both in OECD states and for aid funded education programmes in non-OECD states	• China and India improvement less than Scenario 1, posting an 85-95% improvement, while SSA falls further, exhibiting only 110-120% increases by 2030.	• China leads the BRICs with a 100-110% increase in enrolments while the LDCs fall away embodied by a mean 90-100% increase by 2030 for SSA.	• Economic issues dampen enrolment rates, even among the BRICs. China oversees a 70% increase while LDCs see a mean increase of just 55-65% by 2030 • Tertiary education may be held back if economic development falters • A global slowdown could lead to less opportunity for grant and scholarship funded places in OECD countries	• On the back of strong growth, and the advances achieved in social development and structural reforms, governments and their populations are increasingly aspirational. • Significant growth in tertiary enrolments as developing countries invest in human capital and seek to expand their skilled workforce. • China leads surging BRIC and emerging economies with enrolment growth of 110-120% by 2030. LDCs also show better than expected increases. SSA has over 200% growth by 2030

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Population living in areas under water stress	• The percentage of South Asians living under severe water stress tops 80% by 2030, while all other regions apart from the MENA region show a decrease in those under water stress. • More money available to better manage scarce water resources in developed and developing world • Sporadic tensions emerge within and between nations where water scarcity is still an issue	• South Asians living under water stress reaches 82% by 2030. Improvement elsewhere is slowed by an average of 1-2%. • Greater use of OECD aid-funding to finance innovative irrigation and water access projects in the developing world • Greater domestic funding for water projects in better performing nations • Slowdown in BRIC countries leads to reduced funding for water projects and results in greater tension between agricultural areas and urban dwellers	• South Asians living under water stress declines slightly to 77-78% on the back of strong Indian performance. Elsewhere LDCs figures increase slightly by 0.5-1%	• Measures to alleviate water stress fail to cope and the numbers of those affected rise. • South Asian percentage rise to 83%, emerging economies by 0.5% and LDCs by 0.5-1.5% • Water stress increases migration from Asia, Africa and the Middle East • Increasing water stress prompts higher tension between states and acts to lower living standards.	• Emerging economies improve quickly under this scenario – by 2-4% over base figures. The percentage of South Asians living under water stress drops to 76%. • Although development efforts proceed with limited aid input from the OECD, progress is still made. After strong growth there is money available in the developing world to tackle water shortage issues. • The aura of co-operation in the developing world means that populations suffering from water shortages are more readily assisted by neighbouring states.

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Projected coastal flooding	• By 2070 147 million people will be under threat from coastal flooding, representing 5% of the world population. Worst hit will be China with almost 30 million, while the Asian subcontinent will also be greatly affected. • More money available to help populations move out of threatened areas	• Greater than 5% of the world's population at risk by 2070 under this scenario. Increase of perhaps 0.15 – 0.2%	• Population at risk increases by .025-0% • BRICs and aid funded emerging economies and LDCs may make conscious choices to allow certain areas to flood and focus their resources on protecting only critical locations – could lead to high levels of migration	• Population at risk increases by up to 1%	• Decline on figure of 5% under threat. Fall of perhaps 0.25-0.5% • Developing countries may provide increasing aid funding and skills transfer to help LDC's with coastal protection – and reduce the risk of higher levels of migration to wealthier nations such as the BRICs and Middle East states • Nations will be selective in where they focus protection efforts – leading to internal displacement

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Working population determinants/ predictors • **Age dependency rate** • **Total fertility rate 2030-2035**	• 2030 World Fertility rate: 2.14 • Current OECD Age Dependency Ratio: 0.5. By 2030 A majority of states have similar or higher rates than the OECD • As non-OECD states enjoy robust economic growth, fertility rates are expected to decline in line with increased income and employment rates. • In the long term, as fertility rates fall, the age dependency ratio for developing countries will more closely mirror the situation in the OECD countries. • In the poorest countries high fertility and low dependency rates will continue through to 2030	• 2030 world fertility rate may increase slightly to around 2.17. • Median age dependency ratio will remain at 0.5 though long term trend is upward. • As the fertility rates of countries like India and many LDC's remain high, their age dependency rate will be kept low.	• 2030 world fertility rate increases to 2.19 on the back of poor LDC performance. • Median dependency ratio remains at 0.5 though long term trend is upward. • Strong growth from the BRICs, regional powers and oil rich states reduce fertility rates, while age dependency rates trend within a 0.5 variance on mean OECD rates. • Weaker economies are left behind – without strong economic growth and the commensurate rise in social development, fertility rates and age dependency rates show little or no improvement	• 2030 world fertility rate increases to 2.22 as a result of overall sluggish performance. • Median dependency ratio remains at 0.5 though long term trend is upward.	• 2030 world fertility rate decline to 2.11 as a result of strong performances from emerging economies and LDCs. • Dependency ratio static at 0.5 but overall trend is downward. • The benefits of improved growth and social development take some time to impact fertility rates and dependency ratios – with real improvement across the board only starting to show through from 2020 onwards • Improvements in education and sustained gains in incomes and living standards are largely responsible for the reduction in fertility in both developing nations and LDCs.

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Population Gender distribution determinants • **Females (15-64 years), by age cohorts (%), in 2005 and 2030** • **Males (15-64 years), by age cohorts (%), in 2005 and 2030**	• Women currently comprise 44.1% of the workforce in OECD states. The percentage is far lower in non-OECD states but the gap begins to close by 2030 • As LDC political and structural reforms take effect more women are drawn into the workforce. This may have the effect of decreasing fertility rates and stemming any potential population crisis affecting the poorest countries. • Significant fertility rate declines are only likely to become apparent from 2020 onwards	• Economic uncertainty in BRIC nations could lead to legislation to control birth rates – which could in turn reduce the workforce towards the end of the period • The bulk of those seeking to migrate by 2030 will have been born by 2012 – hence the supply is fairly well specified – fertility rates from 2012 onwards will influence longer term economic forecasts	• Developing states under-perform and are unable to improve economic or social performance significantly. • In the absence of legislation or other disincentives, economic necessity may continue to drive those in poorer countries to seek larger families	• As globalization falters, the growth in female workers participating in developing states and emerging economies could slow. • Fertility rates remain relatively high and there is a commensurate oversupply of workers. Thus, migrationary pressure is increased at a time of increased selectivity from the OECD nations	• Economic and social development should bring higher female participation in the workforce and help drive down fertility rates • Women will form a larger portion of the workforce until in some countries the split reaches the levels we see today in the developed world (roughly 50%).

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Population Age Determinants • **Working age population (15-64), gender disaggregated, in absolute numbers, in 2005 and 2030** • **Median age of population in 2030**	• Sub Saharan states, Mali and Niger median age's in 2030 will be only 17-18, a rise of only 1-2 years. • The BRICs and developing Eastern European (EE) states age quicker –6-7 years by 2030. • If fertility rates decline with economic and social development, towards the end of the scenario period the mean age will rise as the working age population shrinks proportionally. • Better performing LDCs will exhibit similar behaviours, but the effects will not be felt in the short or medium term.	• SSA's Mali and Niger's median ages increase even slower under scenario 2, by 0.5-1 years by 2030. The BRICs and EE's ageing also slows slightly, increasing by 5-6 years by 2030. • Although the LDCs post relatively strong growth figures of around 6%, they are starting from such a low base that development is relatively slow.	• SSA's Mali and Niger's median ages show similar movement as under scenario 2, aging by 0.5 years to 2030. • BRICs and emerging economies rate of aging increases by 7-9 years by 2030.	• Aging rate slows across non-OECD states. Even the BRICs see a minimal median rise of 4-5 years by 2030. • The working age population in non OECD states grows or remains static and the mean age remains stubbornly low on the back of the sluggish implementation of political and structural reform.	• Aging rates accelerate throughout the non-OECD world. SSA's Mali and Niger age by 3-4 years by 2030, while the BRICs and emerging economies age by 8-9 years on the back of excellent economic performance. • As developing countries accelerate the pace of improvement in education health and structural reform we will see significant reductions in growth rates of working age populations and median age will gradually rise.

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Income and wealth determinants • **Comparison of GNI per capita, 2005** • **Inflation, average consumer prices (annual percentage change) in 2006 and 2013**	• Inflation trends downwards. EE is particularly successful. Russia more than halves inflation to 5% while Serbia experiences a two-thirds cut to 6%. • S. America is far less successful. Inflation soars in Venezuela to 40% while Brazil and Argentina experience 2% and 1% falls respectively • This scenario shows high levels of income growth for most countries alongside a general drop in inflation • Growth should improve the funding for research and development globally and facilitate knowledge transfer leading to innovation in resource usage and help offset the inflationary pressures of rising global living standards	• Inflation will trend down in the OECD but will remain static or experience upward pressure elsewhere. Serbia, for instance only experience a 50% fall to 9%	• Inflation trends downward for the OECD and BRICs and upward for the LDCs. Russia's inflation decreases to 4.5%.	• Weak economic performance increases inflation. Serbia's climbs to 8% while Russia sees a climb to 7.5%	• Strong performance from the developing world and emerging economies sees inflation fall. However, overheating in the Russian economy sees inflation rocket to 15%. • Rapid wage growth in non-OECD economies could lead to economic overheating and inflation. • Less heavily regulated economies lack the policy instruments to control growth. • Well managed emerging economies are able to maintain steady growth allied to relatively low inflation rates whilst continuing to deliver steady increases in incomes and living standards.

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Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Technology and innovation • **Mobile cellular subscribers per 100 inhabitants** • **Patent Filings by Country of Origin (top 20 origins and share of countries in total patent filings), 2000 and 2006**	• The current median number of phone subscriptions in non-OECD states is 74 per 100 inhabitants. • Market set to expand by 382.5 million subscriptions in 2008. • By 2012 yearly growth in subscriptions is expected to be 163 million per year. • Innovation, based on patent filings, is dominated by OECD states. No non-OECD state currently ranks among the top 10 innovators. • By 2030 the adoption of technology and the pace of innovation quicken as economic advancement and structural reforms encourage entrepreneurialism and facilitate technological uptake. • Rapid adoption of mobile phones in both emerging and LDCs accelerates domestic development and increases integration with the developed world. • Technological advancement also creates domestic opportunities that benefit the LDC's and decelerates the brain drain.	• Mobile penetration rates slow – with growth of 100-120 million subscribers per year by 2012 • A key driver of OECD growth is investment in R&D and the innovations that follow. • The BRICs and other emerging economies failed to capitalize on their growth spurt to 2008 and under-invest in the underpinning infrastructure to support future technological growth and innovation. • The pace of nationals returning to home countries is slowed as opportunities reduce • The LDC's struggle to keep pace with the costs of technological advancement and although educational output increases for many, the result is a brain drain to more developed nations. • Despite uneven growth, technological diffusion still increases as firms from OECD states seek to expand into new markets.	• Environment conducive to technological advancement and innovation sees mobile subscriptions only fractionally below Scenario 1 levels at 140-150 million per year by 2012 • Continuing globalisation encourages the spread of technology and accelerates innovation. These forces help to further integration with the developed world. • Rapid take up of mobile phones – even amongst the poorest helps the creation of new micro-businesses • Emerging economies exhibit strong economic growth and are able to push ahead with structural reform programs, opening up new technology and innovation centred sectors – thus creating new jobs and relaxing migrationary pressures.	• Innovation stagnates in the developing world and growth in mobile subscriptions drops to under 100 million by 2012. • The negative geo-political atmosphere plays against technological diffusion, lessening the ability of non-OECD states (especially the LDC's) to increase the use of those technologies beneficial to development.	• Non-OECD states see strong growth in Patent filings and begin to approach the levels of mid-ranking OECD states. • Mobile phone subscriptions soar as the Chinese and Indian markets flex their muscles. We can expect growth of 180 – 200 million per year in 2012. • Innovation and technological uptake in non-OECD states accelerate at a rapid pace particularly in the period from 2015-2030 as a result of significant investments made in the period to 2015 both to bolster R&D and attract knowledge and technology intensive industries. • Increasing mobile penetration draws people together, helping the furtherance of technological diffusion and spurring innovation. • Increased numbers in tertiary education will also help to increase innovation. Increased innovation will in turn aid growth.

Push factors – potential impact under each scenario *(continued)*					
Push Factors	**Scenario 1 "Progress for All"**	**Scenario 2 "OECD Long Boom"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Clean water and Sanitation • **Access to improved drinking-water sources and to improved sanitation (percentage)** • **Millennium Development Goals set target of halving fraction of those living without clean water and sanitation. Current figures are 93% and 84% respectively**	• Millennium Development Goals (MDGs) are surpassed. The share of population with access to clean water and sanitation hit 97% and 95% respectively. • As a result of solid economic growth and reforms, many non-OECD countries are able to provide an increasingly large percentage of their populations with access to clean water and with significantly improved levels of sanitation. • Reductions in child mortality and the incidences of avoidable waterborne diseases as safe drinking water become widely available in developing states.	• MDG targets of 96.5% and 94% with access to clean water and sanitation respectively by 2015 are not achieved. Expected results for this scenario are 94% and 86% respectively by 2015 with targets met by 2030 • With worse than expected economic performance the emerging economies and LDCs may have to rely on the altruism of the OECD states in order to implement effective clean water and sanitation programs. • With the OECD experiencing a "long boom" there will be significant internal pressure to increase aid to the poorer nations.	• BRICs and emerging economies reach their MDGs, halving those without access to clean water or sanitation. The LDCs are less able to improve and fall badly short of MDG targets. Overall global progress falls short, with figures of 94.5% and 87.5% respectively. Targets still not met by 2030 • BRICs and emerging economies • Strong growth and structural reforms provide the funding and mechanisms for large scale engineering projects to deliver access to clean water and the provision of adequate sanitation to large sections of the population in LDCs. • Low economic growth will hamper the speedy implementation of clean water and sanitation programs.	• Worse than expected global performance halts efforts to reach MDGs. Figures stagnate. Access to clean water and sanitation remain at 93% and 84% respectively • Limited technological diffusion works against significant improvements in the provision of clean water and sanitation. • Non-OECD states will be unable to implement programs as quickly as they would like. • The BRICs enjoy the most significant sector growth but it is below expected levels. • LDCs lack the funding and management infrastructure to implement effective wide ranging programs.	• The emerging and developing world thrive and are able to roll out clean water and sanitation. MDGs are achieved with figures hitting 96.5% and 94% respectively by 2015 • Strong economic performance enables developing countries to invest heavily in these vital projects. • A steadily increasing number of people have access to clean water and sanitation, a vital step for social development – serious health issues are brought under control

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Annex 4.A5

Wild Cards and Their Implications for Migration and Migration Policy

Wild cards and their implications for migration and migration policy Wild Cards = Low Probability, High Impact Events					
Wild Card	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Environmental	• Environmental constraints confine migration flows to intra regional movements • A natural / climatic disaster creates high volumes of economic migrants from developing world • A natural / climatic disaster has high death toll in key OECD economies (e.g. the US) – generating a short term peak in demand for migrants at all skill levels	• As per scenario 1 • *Environmental disasters and high levels of internal migration could be a contributing factor in the sluggish performance of the BRIC countries*	• As per scenario 1 • *Poor pace of development for LDCs could decrease their ability to address major environmental catastrophes and increase environmental migration*	• As per scenario 1 • *Limited protection funding could lead to increased frequency of disasters* • *A global turndown would limit the assistance available to deal with disasters – leading to higher outflows but limited willing recipients*	• As per scenario 1 • *Enhanced economic and political co-operation could increase the co-ordination of developing economies in addressing environmental crises and limit the outflow of poor environmental migrants*

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Wild cards and their implications for migration and migration policy *(continued)*
Wild Cards = Low Probability, High Impact Events

Wild Card	Scenario 1 "Progress for All"	Scenario 2 "Long Boom OECD"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Health	• Health epidemic dramatically increases migrant outflows from source nations • Health epidemic with high fatality rate dramatically increases demand for all skill levels in key OECD economies • A widespread infectious disease leads to collapse in the insurance and travel industries. • Barriers to the movement of migrants (border controls) increase and compete with increased incentives to leave affected areas. • Reductions in border controls to encourage migration could lead to the easier flow of disease and pandemics between countries	• As per scenario 1 • Developed economies may feel compelled to invest in monitoring and prevention systems in the less well funded emerging economies to prevent the spread of disease	• As per scenario 1 • The type of epidemic is very important. The impact point may vary E.g. A SARS outbreak would affect both the core and the periphery whereas an acceleration in the spread of HIV will mostly affect the periphery	• As per scenario 1 • Barriers to the movement of migrants (border controls) increase and compete with increased incentives to leave affected areas	• As per scenario 1 • Greater political and economic collaboration between emerging nations and LDCs could lead to enhanced and co-ordinated health monitoring systems and greater knowledge transfer

Wild cards and their implications for migration and migration policy *(continued)* Wild Cards = Low Probability, High Impact Events					
Wild Card	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Governance Challenges	• Major political or economic scandal hinders cohesion • Major corruption scandal in a global institution reduces global trust • Collapse of a key global institution such as the UN or World Bank • Pakistan becomes a Taliban State • Russia forms a 21st century equivalent of the Soviet Union	• As per scenario 1 • One or more OECD states abuse their power and destabilise weaker nations leading to country collapse	• As per scenario 1 • The growth of multinationals emanating from developing nations could create systemic shocks if they seek to use corruption as a means of influence	• As per scenario 1 • Limited monitoring and resources could lead to financial, political and human rights abuses	• As per scenario 1 • Some developing countries and LDCs may seek merger as the most economically viable long term strategy

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Wild cards and their implications for migration and migration policy *(continued)* Wild Cards = Low Probability, High Impact Events					
Wild Card	**Scenario 1 "Progress for All"**	**Scenario 2 "Long Boom OECD"**	**Scenario 3 "Uneven Progress"**	**Scenario 4 "Globalisation Falters"**	**Scenario 5 "Decoupled Destinies"**
Social Cohesion Issues	• Domestic tensions rise in OECD countries as the gap between haves and have-nots increases – leading to forced expulsion of migrants	• OECD populations may turn against national governments if they perceive domestic growth is being achieved to the detriment of other nations	• Major global flows of workers could create integration issues for recipient countries	• "The implosion of China" because of the unequal economic distribution and various political problems – leads to huge migrant outflows to Australia, New Zealand and Japan as well as a commensurate replacement influx. • Socialist revolutions in Latin America lead to refugees and migrationary flows, especially to countries with ethnic, social or language similarities e.g. Spain, Italy, USA.	• The gap between developed and developing nations could be played out at the individual level if developing nations perceive they are still being ignored in the global institutions
Wars and Internal Violence	• An increasingly assertive Russia could engage in local conflicts – driving out-migration and putting stress on NATO	• Serious conflicts could emerge in LDCs over resources and access to water	• An increasingly bullish India may feel that war is the only way to resolve tensions with Pakistan – particularly if it becomes more fundamentalist	• Regular internal and inter-state conflicts in Africa drive high levels of social and political migrants	• Tensions between developed and developing nations could lead to armed conflict over resources

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Wild cards and their implications for migration and migration policy *(continued)*
Wild Cards = Low Probability, High Impact Events

Wild Card	Scenario 1 "Progress for All"	Scenario 2 "Long Boom OECD"	Scenario 3 "Uneven Progress"	Scenario 4 "Globalisation Falters"	Scenario 5 "Decoupled Destinies"
Economic Upheaval	• A series of severe price hikes or increase in commodity prices: – Uneven spread of growth benefiting oil producers and states with a strong agricultural industry – Generates instability – Produces very different migration models	• Potential collapse of a BRIC economy could lead to global economic turmoil	• Regular collapses amongst LDCs may strain global capacity to intervene and prop up weak and failing states	• A global turndown could lead to a rash of conflicts over resources at key flashpoints around the globe • A corporation formally bids to take over a weak economy	• Accelerating pace of development in the developing world and the transfer of big business to those markets could lead to protests and riots in the "victim" OECD countries

Annex 4.A6

Sources for Pull and Push Factor Core Data

Pull factors – OECD countries

Demographics

Population Gender Distribution Determinants

Females (15-64 years), by age cohorts (in percentages), in 2005 and 2030

Males (15-64 years), by age cohorts (in percentages), in 2005 and 2030

UN World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision (median variant).

Working Population Determinants/Predictors

A) Working age population (15-64), gender disaggregated, in absolute numbers, in 2005 and 2030

UN World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision (median variant).

A) Median age of population in 2005 and 2030

UN World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision (median variant).

Economics

B) Inflation, average consumer prices (annual percentage change) in 2006 and 2013

IMF World Economic Outlook Database, April 2008

Quality of life

H) Countries/Territories Allowing Dual Citizenship in Some Form

Renshon, Stanley A. (2000), *Dual Citizens in America: An Issue of Vast Proportions and Broad Significance*, Centre for Immigration Studies Center

International Migration History

J) Foreign-born population by country of residence

OECD (2008), *A Profile of Immigrant Populations in the 21st Century*

Push factors – non-OECD countries

Demographics

Working Population Determinants/Predictors

A) Age dependency rate (dependants to working-age population)

World Bank World Development Indicators; 2006

A) Total fertility rate 2030-2035

UN World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2006 Revision. (Median variant) (The average number of children a hypothetical cohort of women would have at the end of their reproductive period if they were subject during their whole lives to the fertility rates of a given period and if they were not subject to mortality. It is expressed as children per woman.)

Population gender distribution determinants

A) Females (15-64 years), by age cohorts (in percentages), in 2005 and 2030

UN World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision (median variant)

A) Males (15-64 years), by age cohorts (in percentages), in 2005 and 2030

UN World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision (median variant)

Population age determinants

A) Working age population (15-64), gender disaggregated, in absolute numbers, in 2005 and 2030

UN World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision (median variant)

A) Median age of population in 2030

UN World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2005 Revision (median variant)

Economics

Income and wealth determinants

B) Comparison of GNI per capita, 2005

B) Inflation, average consumer prices (annual percentage change) in 2006 and 2013

IMF World Economic Outlook Database, April 2008

Technology and innovation

G) Mobile cellular subscribers per 100 inhabitants

ITU Statistics Database "ICT-Eye"; 2007 dataset

G) Patent Filings by Country of Origin (top 20 origins and share of countries in total patent filings), 2000 and 2006

WIPO Statistics database, 2008

Quality of life

Clean water and sanitation

G) Access to improved drinking-water sources and to improved sanitation (percentage)

WHO Statistical Information System (WHOSIS), 2006. Access to improved water source refers to the percentage of population with access to an improved drinking water source in a given year. Access to improved sanitation is the percentage of population with access to improved sanitation in a given year. Improved water sources include household

connections, public standpipes, boreholes, protected dug wells, protected springs, and rainwater collections. Reasonable access is broadly defined as the availability of at least 20 litres per person per day from a source within one kilometre of the user's dwelling. Improved sanitation facilities are defined in terms of the types of technology and levels of services that are more likely to be sanitary than unimproved technologies. Improved sanitation includes connection to a public sewers, connection to septic systems, pour-flush latrines, simple pit latrines and ventilated improved pit latrines.

Annex A

The Future of International Migration to OECD Countries: Members of the Steering Group

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The Future of International Migration to OECD Countries: Contributing Authors

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Middle East and North Africa – Prof. Philippe Fargues (European University Institute, Firenze, Italy)

Note: The papers can be found on our website (www.oecd.org/futures)

Additional contributions

Council of Europe Development Bank (2008), "Migration in Europe: The CEB's Experience", Paris

Note: The paper can be found on the website www.coebank.org

OECD PUBLISHING, 2, rue André-Pascal, 75775 PARIS CEDEX 16
PRINTED IN FRANCE
(03 2009 06 1 P) ISBN 978-92-64-04449-4 – No. 56901 2009

The Future of International Migration to OECD Countries

On average about 3.3 million migrants move to the OECD area every year. Will this trend continue in the years ahead? The question is difficult to answer precisely, because the factors shaping international migration flows are tremendously complex and hard to predict, as are changes in the migration policies of receiving countries. Yet clearly decision makers in government, business and society at large would be better equipped to address the opportunities and risks if they had a better understanding of the developments likely to influence global migration over the longer term.

This book explores the social, economic and environmental forces that may combine to attract migrants of various types and backgrounds to OECD countries, as well as those that may persuade migrants to leave their countries or to stay at home. By analysing different pull and push factors and constructing five different scenarios of migration in the future, this volume endeavours to cast light on a range of key questions. Which factors will be major determinants of global migration flows? Which OECD countries will look particularly attractive for migrants? Outside the OECD area, where will the pressures to migrate be especially strong? And what kind of migration-related issues will policy makers likely be facing as a result, as 2030 approaches?

Further reading

International Migration Outlook: SOPEMI 2009
OECD Insights: International Migration

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ISBN 978-92-64-04449-4
03 2009 06 1 P