HIGHLY SKILLED MIGRATION*

CHAPTER 2

1. Introduction

The major countries of destination have admitted increasing numbers of highly skilled migrants since the early 1990s. At the beginning of the decade, the traditional countries of immigration had already put into place policies pitched to increase their intake of highly skilled migrants, though most European countries did not review their policies to attract skilled migrants until the latter part of the decade.

This trend towards skilled migration is continuing today and appears to be a composite result of evolving government policies and changes in the nature of the global labour demand and supply.

Highly skilled migrants are involved in various migration scenarios. The largest stock of skilled migrant workers consists of permanent residents, even though the flow of short-term migrants is increasing and often exceeds the yearly admission of skilled immigrants on a permanent basis. Various countries admit increasing numbers of skilled workers under temporary worker schemes, and continued to do so even during the post-2001 economic recession. Indeed, in some countries temporary migration schemes are of a more transitional nature because they either permit, or do not impede, the eventual acquisition of permanent resident status.

The other notable change is what has been referred to as the spectacular increase in the flow and stock of foreign students (OECD, 2004). In fact, foreign students are increasingly seen as an integral and advantageous component of policies to attract highly skilled migrants. Some countries are developing specific policies to attract and retain students. Other forms of highly skilled migrant mobility include step migration from one country to another, and the return of often long-term migrants to their home countries, which some observers liken to circular migration.[1]

The increase in the migration of highly skilled workers raises the issue of brain drain and demographic indicators show that this concern may be warranted. About 10 per cent of all highly skilled persons from the developing world live in either North America or Europe. This proportion across

* This chapter was written by Lindsay Lowell, Institute for the Study of International Migration, Georgetown University, Washington, D.C.

[1] Step migration refers to mobility from an original residence to first one and then another destination, e.g. in a "stepwise" or sequential fashion. Circular migration is variously defined, but generally refers to recurrent movement between two countries (see also Chapter 11).

the board would appear to be about right in terms of the numbers necessary to generate linkages to the global economy and to yield positive feedback effects from the diaspora. But many Latin American, African and Caribbean countries have a much larger share of their highly skilled nationals living abroad, which poses a serious challenge to their own socio-economic development.

This chapter first reviews some of the trends in highly skilled migration in major countries of destination. The distribution of highly skilled migrants in different countries is reviewed, as well as their share of migrants from different source regions. Next, data on permanent immigrants are presented together with a brief discussion of the limited data available on temporary skilled foreign workers and foreign students, a subject addressed in more detail in Chapter 4. This is followed by a discussion of the major elements in admission policies associated with the trends in highly skilled migration. The chapter then turns to the impact of highly skilled migration on countries of origin. A brief discussion of the literature dealing with such impacts then leads to a discussion of policies that could contribute to optimizing highly skilled mobility for the benefit and development of countries of origin. The chapter concludes with some observations on policy and research implications.

2. The Increasing Mobility of the Highly Skilled

In recent years, new data sets based on the collection of national census data have revealed the patterns of highly skilled migration. They demonstrate that skilled migration is indeed increasing and that there are many and complex relations between major countries of origin and destination. Student migration also shows a marked increase and is likely to significantly influence the future volume, composition and destination of highly skilled migration (see also Chapter 4).

Migratory movements tend to be influenced by regional affinities. While policymakers and researchers have focused their attention mainly on migration from developing to developed countries, there are other types of flows that deserve attention. According to Ocampo (2006), South-North, South-South, and North-North migration flows account for roughly one-third each of the global distribution of migrant stocks. Moreover, the growing share of tertiary educated migrants in migration movements is notable, accounting, for instance, for a 46 per cent increase in migrant flows in OECD countries between 1990 and 2000.

2.1 Defining Highly Skilled

It is not always clear just who the highly skilled are. The most obvious indicator is either the level of education or occupation. Depending on the objective to be achieved, one or the other is preferred. If relevance to policy is important, most governments typically use a combination of both education and occupation to select the highly skilled. Ultimately, data availability often constrains the definition used for the purpose of analysis.

The most basic definition of highly skilled migrants tends to be restricted to persons with tertiary education, typically adults who have completed a formal two-year college education or more. This is also the most readily available international statistic and, by default, the most widely studied measure of highly skilled mobility. When possible, additional information regarding an academic or professional degree would be desirable. The National Science Foundation of the United States, which has some of the most complete international data on the stock of scientists and engineers, tends to focus on data for holders of doctoral degrees.

The Manual on the Measurement of Human Resources of 1995, or the "Canberra Manual", is a response to the work of both the OECD and the European

Commission's efforts to prioritize standardized data on human resources devoted to science and technology (S&T). It draws on best international and national practice and classifications and provides definitions in terms of qualifications (levels and fields of study) and occupations (Auriol and Sexton, 2002). While it is, perhaps, one of the most detailed definitional guidelines for comparative international statistics, its focus on S&T occupations limits its general usefulness.

Most frequently, governments define highly skilled migrants not in terms of either/or, but in terms of both education and occupation. For example, the United States' well-known "specialty worker H-1B visa" is based on a list of specific occupations and a minimum academic requirement of a Bachelor's degree. The definition of "highly skilled" depends on both an educational component and a threshold defining minimum competence in a knowledge-based society.

Professional activity and experience are important as selection criteria as this allows to filter out workers with little education and to target desired skills. The S&T occupations defined in the Canberra Manual are an example in point as they focus on technical skills regarded as crucial for research and development (R&D) and the engineering requirements of knowledge-based economies.

However, to restrict the meaning of highly skilled to S&T occupations would be too narrow an approach as it would disregard other high-skill categories that are in significant demand, such as business persons, managers, teachers or healthcare providers. Of course, it is possible to go beyond narrowly defined immigration policy interests by extending it to include a "creative class" that includes S&T workers as well as writers and artists (Florida and Tinagli, 2004). Arguably, such an expanded definition goes beyond the domain of immigration policy, as creativity has, or should have, deeper endogenous wellsprings, although it raises an interesting point about what might be considered as most important for national productivity — education, skills or creativity? Other than for the specific purpose of constructing international norms in statistics, occupation is important precisely because it points to what is being done; and what is being done is ultimately of critical importance. Highly skilled persons are mainly in high value-added and high productivity activities that are essential to the global knowledge society. S&T workers, physicians and business persons bring different competencies and their professional activities at various levels combine to advance economic and social development and national wealth.

2.2 Flows and Stocks of Highly Skilled Migrants

The existing data on the mobility of highly skilled individuals are limited to the assessment of persons with tertiary education and have only recently been compiled for the World Bank and the OECD using national censuses. Putting these estimates together is a substantial task requiring the collection of data from national censuses in destination countries, which often work with different definitions. More refined estimates, for instance regarding more detailed levels of education, or for the mobility of men versus women, or by occupation, have yet to be developed.

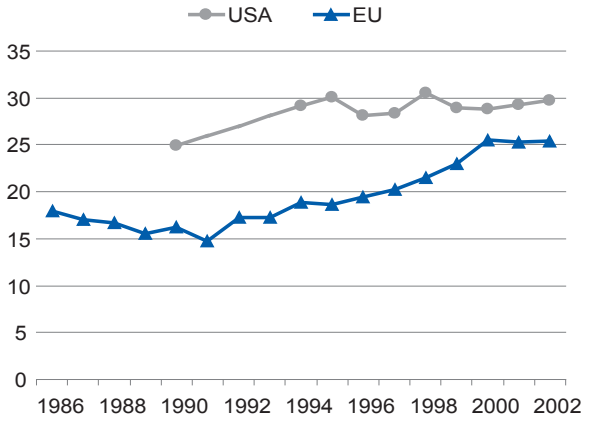
Using tertiary education, Figure 2.1 shows that the growth of highly skilled migration to EU countries already started in the early 1990s, preceding the "New Economy" and the boom in the information, communications and technology (ICT) sectors. Once underway, the percentage of highly skilled migrants increased until the end of the ICT-led cycle in 2001. From just under 15 per cent of all migrants in 1991, the share of the highly skilled grew to just over one-quarter of all migrants by 2001.[2]

[2] For the EU, the new immigrants are those who arrived in the respective year. For the United States, new immigrants are those admitted during the past five years.

In contrast, the share of highly skilled migrants to the United States initially accounted for about one-quarter of all recently arrived immigrants, increasing to around 30 per cent already by the mid-1990s. Compared to European countries, the United States started the 1990s with a substantial share of highly skilled immigrants attributable to the Immigration Act of 1990, which increased both permanent and temporary visas for highly skilled workers.

Figure 2.1

Percentage of New Immigrant Adults Aged 15-64 with Tertiary Education



Sources: *European Commission (2003: 197, chart 139); tabulations U.S. Census microdata.*

As from the mid-1990s, however, the share of skilled migrants in the U.S. intake stabilized while it increased in Europe. The sharp increase in the European intake in the late 1990s appears to have stabilized around 2000, or just at the peak of the ICT boom, despite the fact that many countries had introduced policies to attract the highly skilled. This would indicate that, while policies can have a significant impact on the intake of highly skilled migrants, economic conditions strongly influence trends.

Table 2.1 shows the distribution in 2000 of the tertiary-educated, foreign-born individuals by country of residence. Asian-born migrants are the largest contingent of the internationally mobile population, making up 35 per cent of the world total. They are closely followed by European migrants, who make up 34 per cent of highly educated individuals living outside their countries of birth, the vast majority from the EU-25. They are followed by migrants from the Western Hemisphere, i.e. North America, Latin America and the Caribbean, who account for 23 per cent, and African migrants who account for about seven per cent of the total. It is not surprising that Asians predominate among the highly skilled migrants as they are mostly from developing countries and therefore strongly attracted by opportunities to improve their prospects. However, it is less well recognized that Europeans are also highly mobile as they move mostly within the region. Such moves are less driven by policies designed to attract migrants per se, than by a common history, contiguous borders, cultural affinities and the most recent EU enlargement.

Table 2.1:

Percentage of Tertiary Educated Foreign-born Adults by Region of Birth, 2000

Country of Residence	Region of Birth							
	Asia	Europe-EU25	Europe-Non EU	Africa	Latin American and the Caribbean	North America	Oceania	Total within Country
Australia	35	39	5	6	2	3	10	100
Austria	13	57	21	4	2	3	0	100
Belgium	11	68	4	13	2	3	0	100
Canada	35	35	7	6	11	5	1	100
Czech Rep.	8	64	24	1	1	2	0	100
Denmark	28	37	19	8	3	5	1	100
Finland	11	65	13	6	2	4	1	100
France	17	35	7	34	4	4	0	100
Germany	25	43	20	4	3	5	0	100
Greece	11	44	19	11	1	14	1	100
Hungary	5	30	61	1	1	2	0	100
Ireland	8	72	3	6	1	9	3	100
Italy	16	32	22	14	10	6	1	100
Japan	77	2	0	1	16	4	1	100
South Korea	86	2	0	0	0	11	1	100
Luxembourg	0	95	4	0	0	1	0	100
Mexico	7	25	3	1	34	31	0	100
Netherlands	28	36	6	10	17	3	1	100
New Zealand	24	47	3	7	1	4	15	100
Norway	23	49	9	6	4	9	1	100
Poland	4	28	67	0	0	1	0	100
Portugal	0	16	0	79	4	0	0	100
Slovak Rep.	3	79	17	1	0	1	0	100
Spain	6	39	8	8	35	4	0	100
Sweden	23	45	18	5	6	3	1	100
Switzerland	10	65	9	6	5	5	1	100
Turkey	6	56	33	0	0	5	0	100
U.K.	33	27	0	21	6	7	6	100
United States	41	16	5	4	29	4	1	100
Total OECD	**35**	**27**	**7**	**7**	**18**	**5**	**2**	**100**

Note: Adult population ages 25 and older. North America is Canada and the U.S. and the rest of the hemisphere is included in Latin America and the Caribbean.

Source: *Docquier and Marfouk (2006).*

A large proportion of migration occurs within a particular region. Although the United States and Canada receive most of their highly skilled immigrants from Asia, their prominent position as immigration countries is mainly due to their substantial intake of highly skilled residents from within the western hemisphere, with 33 per cent of highly skilled migrants moving to the U.S. from within the region, in particular from Canada and Mexico. Likewise, most European countries receive a large share of their highly skilled migrants from other European countries. The two Asian countries in Table 2.1, Japan and Republic of Korea (South Korea), equally draw the largest share of their highly skilled migrants from other Asian countries.

Former colonial or other historical ties also play an important role. Even though Australia is much closer to Asia and actively promotes policies to attract highly skilled migrants from that region, its most important source of highly skilled migrants is Europe. Similarly, 34 per cent of France's highly skilled migrants come from Africa, as do 79 per cent of highly skilled migrants to Portugal. Japan draws 16 per cent of its highly skilled migrants from South America, primarily because of historical links arising out of previous Japanese immigration to Brazil.

Thus, highly skilled migrants tend to move within regions or close to home. The supply of workers is more readily available in neighbouring countries where familiarity, the reduced cost of moving and historical linkages between countries facilitate mobility. At more distant removes, as when Asians migrate to the geographically distant Americas, previous migration or historical linkages to particular countries may come into play, for example owing to Chinese and Japanese labour migration in the latter part of the 19th century and the beginning of the 20th century, or later military interventions in Korea and Viet Nam. Such linkages help establish beachheads of immigrants who sponsor family members and establish networks that facilitate the movement of their compatriots.

Employers are eager to hire highly skilled migrants to offset local labour shortages or to respond to the "just-in-time" requirements of knowledge-based economies and tight production timeframes. Today's labour markets remain regionally clustered but are obviously extending further. Local labour shortages are not the only reason why employers hire immigrants; they do so also because, in a globalizing economy, they can. It is ever easier to advertise for and identify potential workers in other countries, and international recruitment agencies arrange to bring workers and employers together. At best, expanding labour markets make for more productive enterprises that benefit all stakeholders. The challenge is to implement policies that inhibit unscrupulous employers from hiring foreign workers at low wages and displacing local workers.

2.3 Temporary Workers and Foreign Students

It is widely recognized that increasing numbers of temporary workers and foreign students, courted by policies designed to attract them, are part of the evolving mobility of highly skilled migrants. Several European countries, in particular, are further developing their policies aimed to attract highly skilled migrants. Unfortunately, there are no systematic data on these movements and the numbers can only be inferred from comparative collections in the annual migration reports of the OECD (OECD, 2006a). Such data indicate that at least 650,000 highly skilled temporary workers are admitted yearly by OECD countries, a threefold increase since the early 1990s.

The trends in student numbers are described here to provide a fuller picture of new mobility patterns and are discussed in depth in Chapter 4. From 800,000 in 1980, the number of foreign students rose to 1.2 million in 1990; by 2000 their numbers had increased to 1.9 million and reached 2.7 million in 2004 (OECD, 2006b). The origins and destinations of students are broadly similar to that of all tertiary-educated migrants, but they are even more likely to come from

Asia or Africa. The reason why student mobility is important is because it may be the leading edge of increased migration by highly skilled persons from these source regions.

The reasons for the long-term increase in numbers are numerous and include more aggressive policies introduced in many countries since the late 1990s. Major European and English-speaking countries have implemented policies explicitly designed to attract students.[3] These policies fall within three general areas: (1) facilitating student admission policies; (2) student outreach and university marketing programmes; and (3) (in most new policies) providing for easier transition from student to worker status, especially for science and engineering students (Suter and Jandl, 2006).

3. Attraction and Admission Policies

What are the specific features of immigration policies that have led to the increasing flow of highly skilled workers and students to the major destination countries? A complete and final analysis is difficult because of the variety of policies involved, the variations in their timing and the fact that the nature of international mobility continues to change. Any quick and simple answers are unlikely since the issues involved are transitional and complex by nature. But it is desirable and should be possible to compare national policies according to their various regulations that can be changed independently or in concert to affect the composition and/or level of admissions.

In recent years, there have been many changes in the admission policies of major countries of destination, perhaps most notably the United Kingdom, but also France, Ireland and Germany. The Canadian and Australian admission systems have also recently introduced several changes; however, these countries have courted skilled migrants for nearly two decades. Arguably, most of the important changes or numerical increases concern temporary admissions (Zlotnik, 2005), with fewer changes in permanent admissions.[4]

What components of policy attract greater numbers of highly skilled migrants? Obviously, the contingent reserved for a given visa by implication regulates the potential volume of migrants, but numbers may be capped, uncapped or set by some impartial mechanism. Similarly, variations in different elements make a visa more or less attractive to either the potential employer or migrant worker. The policy elements in these countries often differ, but they tend to include at least the following seven components (Lowell, 2004).[5]

(i) Visa numbers: Some countries are creating new working visas with large or even unlimited numerical caps, while others adjust numbers periodically. Large or uncapped numbers tend to favour increasing immigration.

(ii) Labour market test: Often migrants are allowed entry only if there appears to be a shortage of local workers. This protects the local workforce from undue competition, but if stringently applied, labour market tests favour less immigration and may encourage employers to raise wages.

[3] The United States has over a fifth of all international students and about half of those in the English-speaking world. The number of students going to the U.S. dropped markedly during 2001 and many observers argue that the U.S. became more "restrictive" and lost out in the new competitive environment. But what changed post 9/11 was the implementation of pre-existing regulations, such as consular interviews for all applicants, but at such short notice that this led to backlogs. Also, steeply rising U.S. tuition costs, cited by students as the major deterrent, along with other factors inhibited student applications. Sharply rebounding student visa issuances since 2005 suggest that recessionary impacts and administrative bottlenecks have abated (Lowell and Bump, 2006).

[4] As recently as 2002, McLaughlan and Salt (2002: 3) studied admission policies for the highly skilled in 31 countries concluding that "[m]ost European countries, together with developed Asian ones, have not introduced special measures to recruit highly skilled workers. They continue to rely on their existing work permit systems".

[5] These rankings were undertaken in 2004 and there have been some notable changes since then. However, the countries that have instituted changes, and the nature of those changes, make it unlikely that the ranking of these admission regimes would change markedly.

(iii) Labour protections: After a visa is issued, requirements may be set concerning the wages, working conditions or employment of migrants.[6] This protects both migrants and local workers, but requires oversight and may be objected to by employers.

(iv) Enforcement mechanisms: Admission systems are increasingly interwoven with security concerns and their bureaucracies. Stringent admission processes can slow admissions and/or deter migrants. Some countries attribute post-admission enforcement responsibilities to ministries responsible for employment, though others mandate no agency. Generally speaking, lax systems favour increased immigration (and abuses).

(v) Employer portability: Temporary or transitional work visas may require migrants to stay with a sponsoring employer for a set period. Employers tend to favour this arrangement, but workers prefer the possibility to negotiate new employment at any point.

(vi) Restrictions on dependants/working spouse: Often the spouse has not been permitted to work if the principal holds a transitional visa. Many countries are relaxing this regulation, a move which potential highly skilled migrants find attractive.

(vii) Permanent residence rights: Many highly skilled migrants work on temporary work visas and initially do not intend to stay permanently. By encouraging a transition to permanent residence, countries offer a strong incentive to potential highly skilled migrants (see Portrait 2.1).

[6] The employment of migrants may be contingent on the notification of domestic workers, unions and/or regulations that bar employment if local workers are laid off.

Portrait 2.1

Working as an IT Specialist in the Czech Republic

Stojanco is 28 years old and comes from a small town in the Former Yugoslav Republic of Macedonia (FYROM) where his family has lived for several generations. Since November 2005, he has been working as an IT engineer for IBM in Brno in the Czech Republic. He is also a participant in the Government's Pilot Project on the Selection of Qualified Foreign Workers,[1] which enables selected skilled foreigners who have obtained employment and temporary residence in the Czech Republic to qualify more rapidly for permanent residence.

Stojanco began his undergraduate studies in FYROM before leaving for Bulgaria to study electrical engineering. He recalls: "After four semesters in a school at home, I had the choice of either continuing my studies in Skopje or to go to Bulgaria to study. Because of the war, and also because I wanted to see more of the world, I went to Bulgaria. My decision to study there was also influenced by the fact that it was less expensive to study in Bulgaria than in my home country. I did not have to pay tuition fees and the cost of living was also lower."

Four years later, Stojanko completed his studies in Bulgaria and returned to FYROM, where he stayed for some time before deciding again to leave: "I was back in a community context where everybody knew everybody and I did not have the right connections to find employment. In the Czech Republic, a person who has knowledge and skills and is good at what he does can find a job."

He learnt about the Czech Pilot Project on the Selection of Qualified Foreign Workers from newspaper articles and a TV programme. He was aware that foreign workers were needed in the Czech Republic: "Generally, I knew that the Czech Republic

needed experts from other countries as Czechs were leaving to work abroad and that there was a lack of young people and young professionals".

When Stojanco found that IBM was looking for skilled workers in the Czech Republic, he applied through a company in Bulgaria that had organized a tender for jobs and advertised this at the university where he had studied. In the final round of interviews Stojanco was successful, and his application to work for IBM in the Czech Republic was accepted. IBM made the arrangements for his employment in Brno and organized all the necessary documents so that he could move to work there.

Once in the Czech Republic, Stojanco began to look for more information on the Pilot Project and found some useful indications on the website of the Ministry of Labour and Social Affairs. After spending three months to assemble the necessary documents, which included not only the work and residence permit but also documents confirming his education and language skills, he was interviewed and informed that he met the selection criteria for participation. While Stojanco does not speak the Czech language very well, he understands it quite well, and his employer also paid for him to attend a two-month Czech language course. He is keen to improve his language skills, but finds it a challenge as English is the main language spoken at work.

When asked why he joined the Pilot Project, he explains: "Mainly because it is an easier and faster way to obtain permanent residence in the Czech Republic, which I consider the greatest advantage of the Project. When I'm granted permanent residence, I will have the chance, for instance, to acquire a mortgage to buy a flat."

Since Stojanco arrived in Brno, much has changed in the city where only few migrants had lived before. IBM alone employs about 1,000 migrants. Stojanco observes: "Many of them are from my home country and Bulgaria, but there are also people from India or South Africa working in our company. In fact, from all over the world."

Stojanco does not intend to return home just yet: "I am not yet ready to return home. Before I do so, I would still like to get to know the world. I now have many friends in Brno. But I'm not here only to earn money. I also like to be here and enjoy the style of life." However, he remains uninterested in politics: "That is one thing I prefer not to be interested in. If you are from the Balkans, as I am, then you know that there are at least as many different and often politicized versions of each historical event, as there are peoples affected by them. Each country tends to develop its own interpretation of history. That is why I prefer to just concentrate on my work as an IT specialist and use my skills, without becoming too involved in politics and other sensitive issues."

Note:

[1] The Pilot Project (2003-2008) provides selected qualified foreign workers, who are already in lawful employment in the Czech Republic, with the opportunity to apply for permanent residence within a shorter period of time, after one and a half years (in the highly qualified workers category) or two and a half years (in the standard category of qualified workers) of uninterrupted stay and work (as compared to the current standard period of five years).

The project is open to citizens of Belarus, Bosnia and Herzegovina, Canada, Croatia, FYROM, India, Kazakhstan, Moldova, Montenegro, the Russian Federation, Serbia and Ukraine; graduates of Czech universities coming from all countries (except those who studied in the Czech Republic as part of development assistance projects organized with their home country), who graduated in 1995 or later; and graduates of Czech secondary schools from all countries, who finished their studies and passed the school leaving exam in 2000 or later. In order to qualify for participation, applicants must obtain at least 25 points in the computerized selection procedure reflecting various criteria (e.g., qualifications, practical experience, language skills, family situation). Family members of project participants are also allowed to settle in the Czech Republic and obtain permanent residence there.

The Project is implemented by the Czech Ministry of Labour and Social Affairs in cooperation with the Ministry of Foreign Affairs and the Ministry of Interior. The office of the International Organization for Migration (IOM) in Prague, together with IOM missions in the qualifying countries, assist the Czech Government to disseminate information on the Project.

***Source**: Adapted from Pilot Project Selection of Qualified Foreign Workers (Reporter: Martina Křížková, Faculty of Social Sciences, Charles University, Prague, 18 July 2007) http://www.imigrace.mpsv.cz/?lang=en&article=media2&mm=4176.*

The application of these regulations may vary significantly among countries. However, there has been little national or comparative evaluation of the success of admission programmes. In fact, there is rather little international effort to evaluate programmes, other than all-too-often perfunctory administrative/legislative reviews, and very few countries have attempted to either collect the necessary data or carry out rigorous analyses.

Certainly, countries have different criteria for measuring success and particular countries may even have conducted experiments with different programmes intended to achieve different ends. However, it appears that there is very little interest in policy evaluation when it comes to the impact of admission policies on highly skilled migration. According to McLaughlan and Salt (2002), the five approaches most often used to determine success are qualitative assessments to see whether policy objectives have been met; measurement of work outputs; level of complaints lodged by stakeholders; surveys of public opinion; and research conducted internally or externally. The authors note that only Australia, Canada, Germany and the United States have carried out such systematic research. Comparative frameworks for programme evaluation are therefore still at the development stage.

In fact, most international policy studies to date do little more than specify criteria deemed important for comparative purposes. The most detailed comparative study so far, completed in 2000 (Christian, 2000), covers some 15 countries and compares them in terms of class of admission (type of migrant/business stream), the use of quotas, the type of employment authorization (employer or employee-based), and application procedures (employer or employee-based). Rollason (2002), whose main focus is on the United Kingdom, remarks on the comparative features of temporary or permanent programmes in 11 countries in terms of the categories of workers, general/specific admissions, tests for the availability of domestic workers, quotas, period of stay and possibilities for renewal, and the permissibility of family reunification. Having constructed major criteria for comparison, however, none of these studies goes on to draw firm conclusions about effective practices. Even the regular reporting on policy changes in the OECD's annual *Trends in International Migration*, rarely draws any strong conclusions.

One exception to this tendency to make systematic comparisons while drawing few conclusions is found in Papademetriou (2003), who identifies four major strategies to admit skilled immigrants: employment-based admissions where employers apply to hire a worker under conditions that safeguard domestic labour; labour market testing where government agencies identify sectors with labour shortages; talent accrual where points are awarded for characteristics like education or language ability; and "filtration systems" where permanent residence status is awarded to students or temporary workers who first demonstrate their value. He suggests that a combination of the best of these strategies might be a good approach and might be accomplished using a points system, similar to those used in Australia and Canada, awarding points for sub-elements of each of the four strategies. In this regard, he starts with an evaluation of the strengths and weaknesses of various strategies, not recommending one or the other, but rather a combination of the best elements of each.

In addition, there have been policy recommendations for the orderly management of migration on a worldwide basis that are in some ways supplementary to legally binding standards, such as those found in international trade agreements. They offer ideas for the cooperative management of highly skilled workers between developing and developed countries. Such projects include the Transatlantic Learning Connection (1999) or the International Regime for Orderly Movements of People (Ghosh, 2000). In

partnership with the International Organization for Migration (IOM), the Swiss Government launched the Global Consultative Process for Inter-State Cooperation on Migration Management in 2001 (Berne Initiative), which contributed to the development of the International Agenda for Migration Management (IAMM) (2005) containing a set of common understandings and effective practices for a planned, balanced and comprehensive approach to the management of migration.

The Global Commission on International Migration was launched by the U.N. Secretary-General and a number of governments in December 2003. The Commission's final report in October 2005 makes recommendations on how to improve the national, regional and global management of international migration (GCIM, 2005). In the European Union, the recent enlargement to 27 members has renewed pressure to go beyond the harmonization of national policies to a common legal migration policy (Van Selm and Tsolakis, 2003), including a proposal for a EU Directive on the conditions of entry and residence of highly skilled workers from non-EU third countries (European Commission, 2005). In October 2007, the European Commission published a Communication introducing this draft directive. The proposal establishes a fast-track procedure for the admission of highly qualified workers from third countries, based on a common definition and criteria. Workers admitted would be provided with an "EU Blue Card", essentially a residence permit allowing them to work and also affording them a set of rights, including favourable family reunification conditions. The proposal envisages restrictions on access to the labour market for the first two years in the Member State of residence. Thereafter, such workers would enjoy equal treatment with nationals as regards access to highly qualified employment. Moreover, after two years of lawful residence in the first Member State, the proposal would enable the migrant to move for work to another Member State subject to certain conditions (European Commission, 2007). While there has been progress in the development of common policies on asylum seekers and refugees and on the treatment and movement of long-term third-country residents, the achievement of consensus on the establishment of common criteria for the admission and residence of highly skilled migrants in EU Member States will require a great deal more work.

4. Policies that Address Brain Drain[7]

It is fair to say that the greatest competition has been for highly skilled migrants from the developing world, the source of the largest and growing numbers of highly educated persons. Despite Europe's increasing intake, the United States remains the dominant destination country for highly skilled workers from developing countries. Already at the outset of the 1990s, the U.S. had just over half of the world's highly skilled migrants from the developing world (Carrington and Detragiache, 1999). In fact, Table 2.2 shows that the traditional North American destinations of the United States and Canada have been the place of residence of nearly two-thirds (65%) of the world's tertiary educated foreign-born adults in 1990 and 2000. The traditional countries of immigration, along with Sweden and Norway, are the most successful countries relative to the size of their own populations in attracting highly skilled migrants (Lowell, 2006).

These figures translate into substantial losses of highly skilled populations for the developing world. As of 2001, nearly one in every ten tertiary educated adults born in the developing world resided in North America, Australia or western Europe. About five per cent of the developing world's emigrants with secondary education live in industrialized countries and the figures for the upper echelons are even higher. It is estimated that 30 to 50 per cent of the developing world's population trained in science

[7] See also Chapter 12, which discusses some of these policies.

Table 2.2:

Percentage of All Tertiary Educated Foreign-born Adults by Region of Residence and Region of Birth, 1990 and 2000

Region of Birth	Region of Residence					
	Europe	North America	Latin America and the Caribbean	Asia	Oceania	Total from Region of Birth
	2000					
Europe	36.7	49.9	0.6	1.6	11.3	100
North America	24.9	62.1	4.6	2.3	6.1	100
Latin America & Caribbean	8.0	88.3	1.3	1.4	1.0	100
Asia	14.5	73.1	0.1	4.2	8.0	100
Oceania	22.4	27.2	0.1	0.7	49.6	100
Africa	47.8	44.5	0.1	0.1	7.6	100
Total OECD	23.6	64.8	0.7	2.4	8.5	100
	1990					
Europe	27.2	57.2	0.8	0.9	13.9	100
North America	19.1	67.2	4.8	2.9	6.0	100
Latin America & Caribbean	7.9	87.3	2.2	1.2	1.5	100
Asia	13.5	69.0	0.2	7.7	9.6	100
Oceania	15.3	28.5	0.1	0.8	55.3	100
Africa	46.8	43.2	0.1	0.1	9.8	100
Total OECD	20.3	64.9	1.0	3.2	10.7	100

Note: Adult population ages 25 and older. North America comprises Canada and the U.S. and the rest of the hemisphere is included in Latin America and the Caribbean. Includes mobility across national borders and within the region. Data collected for OECD destination countries.
Source: *Docquier and Marouk (2006) (authors' tabulations of online database).*

and technology live in the developed world (Lowell, Findlay and Stewart, 2004).

Still, a brain drain can only be said to have occurred where there is clear evidence that migration flows have had adverse consequences for the source economy. The growing research literature finds that a relatively large-scale emigration of highly skilled workers relative to their populations, particularly from least developed economies and smaller developing countries, has adverse impacts on national economic growth. The difficulties caused by the increasing emigration of health workers from developing to developed countries are illustrated in Textbox 2.1. However, some observers argue that a certain degree of highly skilled emigration is required for source countries to benefit from links to the global economy. Also, highly skilled migrants may reinvest human and economic capital in their home countries. Indeed, emigration rates of some five to ten per cent may benefit economic growth, but higher rates can be detrimental and, unfortunately, are not uncommon for many Caribbean and African countries (Docquier, 2005).

Textbox 2.1

Globalization and the Mobility of Health Workers

Globally, health workers are on the move. Although they move to many parts of the world, their migration is increasingly asymmetrical, from developing to developed countries, reflecting a broader dynamic context in which labour markets for skilled professionals are becoming global. The main destination countries of health worker migrants are indicated in Table 2.3. The United States currently employs the greatest number of foreign-trained doctors and nurses, followed by the United Kingdom. Of all regions, sub-Saharan Africa suffers the greatest shortage of health workers, yet doctors trained in this region represent close to one quarter (23%) of the current foreign-trained doctor workforce in OECD countries (Pond and McPake, 2006).

Table 2.3

Health Workers moving to OECD Countries from Developing Countries

	Doctors from abroad		Nurses from abroad	
OECD country	**Number**	**% of total**	**Number**	**% of total**
Australia	11,122	21	-	-
Canada	13,620	23	19,061	6
Finland	1,003	9	140	0
France	11,269	6	-	-
Germany	17,318	6	26,284	3
Ireland	-	-	8,758	14
New Zealand	2,832	34	10,616	21
Portugal	1,258	4	-	-
United Kingdom	69,813	33	65,000	10
United States	213,331	27	99,456	5

Note: - = not applicable
Source: *WHO (2006: 98).*

In addition to emigration, many developing countries continue to experience the internal movement of health workers from rural or under-served to urban areas. With increased international private health investment and "medical tourism", they are also witnessing a flow of health workers from public to private healthcare systems. The result of these migratory flows has been diminished access to healthcare and services for individuals who depend on the public healthcare system – the system used by the large majority of poorer populations in developing countries (Marchal and Kegels, 2003). Low health worker density and diminished service access and availability, in turn, correlate with increased mortality among infants, children under five years of age and women during childbirth.

Globalization contributes in various ways to the conditions which lead to all three forms of health worker migration: rural to urban, public to private, low-income to high-income country. First, there are generally applicable enabling factors. Professional credentials are increasingly recognized across borders particularly where free trade areas have been formed, the European Economic Area (EEA) serving as the best example. Eased migration and mobility (including, for instance, through cheaper, faster and easier travel, multilingualism, post-colonial ties and common academic curricula) have contributed to a veritable sense of "global citizenship" worldwide, with professional credentials serving as passports. The opportunity to accumulate savings and remit portions of incomes to family and communities back home is another incentive for health workers to migrate. The Internet – one of globalization's primary tools – has increased access to recruitment agency and employer websites. Diasporas established in the developed countries have also become another factor of attraction.

Second, deteriorating economic, social and environmental conditions "push" health workers to seek a better life abroad (Dovlo and Martineau, 2004; UNFPA, 2005). In many countries, economic deterioration has, in part, resulted from poorly sequenced or overly rapid global market integration; financial crises arising from increased flows of speculative capital; loss of public revenues due to trade liberalization and a decline in tariffs; and requirements for privatization, cost recovery or expenditure ceilings associated with loans or debt relief from international financial institutions (IFIs), all of which limit the ability for governments to pay adequate salaries or to provide incentives for health workers to remain (Joint Learning Initiative, 2004).

Finally, globalization is making it easier for rich countries to "pull" in health workers. A number of regional trade treaties incorporate specific measures designed to encourage the free movement of labour within their defined geopolitical areas. Border barriers in many rich countries are being actively lowered for professional and highly skilled immigrants but raised for lesser skilled individuals. These same countries often experience shortages in their domestic supply of health workers and the increased demand of an ageing population. They rely heavily on the immigration of foreign-trained professionals to fill the supply/demand gap – even while enjoying better health status and a much higher ratio of health workers to the population than many of the countries from which foreign-trained health professionals migrate. Their ability to offer higher pay, better working conditions and greater opportunities in safer environments will continue to pull in foreign health workers until supply exceeds demand (Mullan, 2005; Wilbulproprasert et al., 2004).

Short of an end to "globalization-as-we-have-come-to-know-it", this flow will continue. The policy challenge is one of reducing both the "push" and the "pull" factors. Since this "push/pull" flow is inherently global, managing it to ensure that health does not suffer will require multilateral agreements and strategies.

Source: *Ron Labonté and Corinne Packer, Institute of Population Health, Faculty of Medicine, University of Ottawa, Canada.*

In short, high levels of skilled emigration can unfavourably affect local development, even though it may simultaneously generate benefits. Most studies find that adverse impacts are most commonly associated with permanent as opposed to temporary migration of the highly skilled. Otherwise, the benefits of highly skilled labour migration flows are neither automatic nor inevitable. The extent to which these migrant flows benefit developing source countries will depend on the development and implementation of appropriate policies that optimize the benefits and minimize the costs. To be effective, these policies are best developed in both countries of origin and destination, both separately and in partnership with one another. There are at least three policy arenas which have the potential to generate a regulatory environment that benefits source countries: adoption of multilateral and bilateral agreements to harmonize policies; managing return migration; and fostering the transfer of knowledge and remittances by diasporas (Lowell, Findlay and Stewart, 2004). A fourth approach, which would consist of restricting outflows, is sometimes put forward, but it conflicts with individual rights, such as the human right to leave one's own country and, given the contemporary interplay of labour dynamics, is unlikely to be effective.

4.1 Migration Agreements and Policy Harmonization

Multilateral and bilateral agreements are among the best means to manage the exchange of workers, especially where a chronic shortage of labour in host countries can be met by a surplus of appropriately skilled labour from a country of origin. But, just as it took decades for the construction of international regimes to regulate trade, it may take years before there are equivalent multilateral migration regimes. In the meantime, adopting appropriate bilateral and regional agreements may be both more feasible and, in some cases, preferable for other reasons.

Intergovernmental agreements enable national authorities to agree on the elements that govern the exchange of workers and occupations, or the types of workers concerned. They are an alternative to the damaging practice of "head-hunting" by

international recruitment agencies, which often seek migrant workers from developing countries where high-skill endowments are scarce and who can least afford to lose their professional and scientific elite. At the same time, bilateral agreements can stipulate that foreign workers must be trained in the destination country in the skills appropriate to the needs of the developing country. However, bilateral and multilateral agreements may not be able to meet short-term or cyclic shortages, and they may place developing countries at a disadvantage in certain bargaining situations (Koivusalo, 2003).

The General Agreement on Trade in Services (GATS) is seen as the most promising approach towards a broad multilateral framework to govern the mobility of skilled persons. The Mode 4 elements of the GATS (see Textbox Int. 1) can reduce the risks of a loss of scarce skilled human resources because it offers a managed approach to the temporary movement of service workers. Developing countries with the highest initial barriers to trade in services stand to gain the most from the liberalization of this type of movement. Developing countries like Brunei, China, the Philippines and Thailand are aware of this and made more commitments under Mode 4 delivery of services by "natural persons abroad" than under other Modes. Future progress requires the adoption by all parties of clear definitions and transparent regulations (Findlay and Warren, 2000).

4.2 Managing Return Migration

Return migration is often referred to as capable of generating significant benefits for the country of origin (Ellerman, 2003). The return of highly skilled expatriates with their newly acquired skills, taste for innovation and the potential to create networks can be especially advantageous (see Textbox 2.2). Certainly, highly skilled returnees offer benefits that are often overlooked when foreign advisors or business persons are called upon in their stead, while temporary or short-term movers have been shown to maintain a commitment to send money back home. Return can be facilitated, if not always permanently, then with targeted programmes that benefit the country of origin.

Textbox 2.2

Impacts of Return Migrants on the IT Industry in India

Labour migration from India has been slowly changing over the last few decades; whereas the 1970s and 1980s saw a large outflow of Indian workers to the Middle East, since the 1990s the new wave of labour migration has been of highly skilled migrants, particularly working in the information technology (IT) sector (Chishti, 2007).

The United States has emerged as the most popular destination for engineering graduates and IT professionals. Indeed, migration from India to the United States doubled in the 1990s, and its contribution to the U.S. IT boom is now well established (Chishti, 2007). In 2001, out of 331,206 H1B visas granted, 49 per cent went to Indian professionals of which 92 per cent concerned IT-related jobs (Hira, 2004).

Originally, this outflow occurred not only in response to the growing demand in countries of destination, but also owing to a lack of opportunities for IT specialists in India itself (Vinutha, 2005). However, the situation has since changed. The impact of the growing number of foreign firms investing and establishing themselves in the Indian economy (Kalita, 2006), together with the saturation of the IT job market and strict immigration and visa control in the U.S. (Babu, 2003), has brought about unprecedented opportunities. Furthermore, India has also experienced rapid growth in its own IT industry and developed strong business connections between India and Indian IT professionals in developed countries (Chishti, 2007). This environment has encouraged IT expatriate professionals, especially in the U.S., to return to India for business opportunities thereby generating a phenomenon of "reverse brain drain" (Vinutha, 2005). According to one estimate, between 30,000 and 40,000 expatriate

professionals have returned to Bangalore, India's major technology hub, of their own volition in the last ten years alone (Kalita, 2006).

One of the most important impacts of return migrants on India's IT economy, besides any capital investments, has been the transfer of knowledge, expertise, market information and work culture to the Indian economy. This development has, in turn, generated what may be referred to as "chain migration", as the environment created by return migrants makes the IT industry increasingly attractive for other IT expatriate professionals to return. In addition, global economic and work practices are becoming increasingly established in Indian companies increasing further their attractiveness for expatriate Indian IT professionals.

The returning migrants show a highly diverse professional profile, ranging from recent graduates from American institutions who return to India for their first jobs to those who return to retire in India (Weisman, 2005).

Making the most of the IT boom in India, many young non-resident Indian (NRI) professionals have become eager to return. Many of these highly qualified returnees now occupy top and mid-level positions in India. Although the figures vary, it is estimated that between five and 12 per cent of applications for such positions are received from NRIs (Menon, 2003), and this trend is expected to increase further**.**

The contribution made by such highly skilled returnees to the growth of the Indian IT sector is also confirmed by the rapid growth in revenues from software exports of 33 per cent in the year 2005-2006 (Chishti, 2007). Thus, today India's so-called brain drain has come full circle. The popularity of "career fairs" held in the U.S. to attract Indian expatriates back from the Silicon Valley to a prospering Indian IT industry attests to this development (Shiels, 2003).

***Source*:** *IOM Dhaka.*

For countries of destination, the most direct and honest means of achieving return is to create temporary worker programmes with short durations of stay and mechanisms that facilitate return (Martin, 2003; see also Chapter 3). Assuredly, the longer migrant workers stay abroad, the lower the likelihood of their return to their places of origin. In developmental terms, there are strong reasons to encourage return at the end of fixed-term contracts. However, for that to occur there must be political acceptance and commitment. In fact, as previously discussed, many "temporary" work permit programmes in Europe permit a transition to permanent residence status after a period of several years (see also Chapter 11). And U.S. temporary programmes place few obstacles in the way of workers who ultimately choose to apply for permanent residency.

It is therefore a great challenge from a policy development point of view to find the appropriate balance between protecting the rights of highly skilled temporary workers, circumscribing opportunities for permanent residency without eliminating them altogether **and** creating incentives for return. This is an area where effective practices are yet to be elaborated. In broad terms, however, it could be argued that what is needed is a new, systematic approach, where conditions are created to enable the ethical recruitment of workers (including through private employment agencies adhering to equitable and professional standards); prevent exploitative practices (Jones and Pardthaisong, 1997); facilitate the movement of such workers; encourage the maintenance of linkages with their country of origin; and to create attractive options for return. Each of these steps has been experimented with, but they are rarely found together in a purposeful combination. It is fairly obvious that such a programme cannot be attempted in isolation by either the home or host country, but calls for close cooperation between them.

4.3 Diasporas and the Transfer of Knowledge and Remittances

A country's expatriate populations, or diaspora, can transfer knowledge, technology and capital back home (see also Chapter 12). Exercising the so-called diaspora option is a relatively low-cost means of capturing tangible returns from expatriates, other than through their return. The exchange of knowledge from a diaspora draws primarily upon networks, often informally constituted, of professionals, intellectuals and scientists abroad. Networks can also be fostered by government programmes and through the establishment of ongoing contacts with source country academic and other relevant institutions.

One of the leading proponents of diaspora management argues that this networked approach turns brain drain into a brain gain, and that it overcomes institutional barriers to the flow of information (Meyer, 2001). Studies indicate that international cooperation in academia and research bolsters economic growth. For instance, a study of Columbia's "Caldas" network established expatriates' involvement in oversight committees and active collaboration in areas of scientific research. The diaspora option can be a low-cost approach to leveraging expatriates' knowledge without permanent return. Research also finds evidence of the growing strength of electronically linked diasporas and different institutional forms of diaspora organizations (Sami, 2006). In recent years, considerable attention has been paid to the establishment of communication networks by governments (for example, the South African Network of Skills Abroad or the Mexican Talent Network) or private institutions (e.g. Red Caldas in Colombia, or Chile Global) to promote and facilitate the involvement of highly skilled migrants in the economic life of their countries of origin (Kutznetsov, 2006).

Remittances are another means by which workers can boost development at home. The global volume of remittances is significant and increasing rapidly. Remittances represent a sizable share of GDP in many countries and almost always exceed foreign aid. It is estimated that each remittance dollar multiplies into two to three dollars of GDP, and there is evidence that remittances can help to alleviate poverty. However, the impact of remittances by highly skilled workers should not be overstated. Such workers integrate rapidly into the society of the host country and, because they often tend to bring their families with them, are less likely to remit over time (Faini, 2003). Rather, highly skilled migrants could have a more powerful impact by way of investments, business partnerships and more sophisticated financial flows to foreign currency accounts or to remittance-backed bonds.

4.4 Policies for Democracy and Development

Finally, the successful management of migration requires the adoption of a holistic approach, which includes tackling the causes of migration. Highly educated individuals often emigrate not because of fundamental demographic and economic factors, but because of a lack of basic freedoms. The loss of highly educated persons can undermine the foundations of democracy and the institutions needed for well-run economies. Human rights abuses and lack of democracy are at the root of what are, in most respects, non-pecuniary brain drains. Investment in the protection of human rights and the promotion of democracy should take into account the role of intellectuals, seeking means of retaining them, as well as ways of benefiting from the diaspora. Expatriate organizations can and do play a political role in actively promoting free speech and democracy.

In the same vein, emigration may occur not simply because of basic economic disparities, but because of the constraints on R&D and educational institutions. In many developing countries, public budget allocations to research, science and technology are limited, and young professionals find it difficult

to remain motivated. Highly educated or skilled individuals often wish to operate in challenging environments. The crux of the theory of optimal brain circulation is that emigration of highly skilled individuals can induce those remaining behind to pursue higher education. As elegant as that may sound, educational institutions of countries experiencing brain drain face severe problems. Human resources are one of the key factors leading to economic development, and policies that strengthen educational institutions and promulgate training are likely to have a beneficial impact. General cooperative ventures between developed and developing countries are, perhaps, some of the more policy-relevant tools available. For example, schemes that aim to strengthen the capacity of specific educational institutions in countries of origin may provide one effective strategy for compensating skilled emigration.

5. Policy Implications

While most policymakers believe that policies help shape the flow of skilled migrants, their precise role, or the role of individual policy elements, has not been systematically studied. Some researchers see admission policies as a response to the prevailing political economy or as unnatural impediments to international mobility. There is little interest here in breaking down the nuances of various policy elements. Surprisingly, most formal migration theories – and there is "no single, well-developed theory" of the determinants of migration – do not even include admission policy in the mix (Russell, 1995; Massey et al., 1994). More to the point, comparative research is lacking on how **policy elements** shape the size and composition of highly skilled migration. So, the impacts of labour market tests, consular interviews, rejection rates, retention offers, and the like, have tended not to be studied as part of a system.

Analysts tend to agree that general features of admission policies have profound impacts on the skill composition of immigration. The long dominance of family admissions in the United States and Europe, for example, is thought to have reduced the skill levels of immigrants over time. The decline in the average skill level appears also to have been a key factor underlying research findings concerning the somewhat poor economic integration of newcomers (Borjas, 1999). The outcomes of policy choices are never fully predictable, however, since Canadian immigrants, purportedly selected for their likely economic success, integrate no more readily than Latino immigrants to the U.S. (Antecol et al., 2004). In turn, the integration prospects of Latino immigrants are affected not only by poor average levels of education, but also by the fact that many of them are undocumented and have no prospects of regularization under current policies. At any rate, it can be argued that the declining skill levels of individuals admitted only on the basis of their family ties may be one reason for the introduction of policies in so many countries during the 1990s that tend to tilt more towards admission on the basis of labour market skills (Chiswick, 2005) (see also Chapter 6).

Economists raise some interesting points about the causes of the level of immigration. They do not necessarily agree on whether policies impose a cost affecting the decision to migrate, or are a quantity constraint that conditions the impacts of push/pull factors. But empirical analyses find that policies matter. Analysis of emigration to the United States finds that quota consolidations reduced Asian immigration in the 1970s, while the legalization of nearly three million workers doubled Latino migration in the 1990s (Hatton and Williamson, 2003). However, these policies are seen as operating within a structure of restrictive immigration policies and the dominant impacts of economic variables on the flows are interpreted accordingly. In fact, highly restrictive policies could well make various push and pull factors irrelevant, or at least make extrapolating the empirically measured impact of push/pull

factors difficult, if not impossible if policies were to change. At the same time, an analysis of emigration to 14 OECD countries found that pull factors are the dominant driver and that push factors play no substantive role (Mayda, 2005). While other research finds that push factors do play a role in emigration, this analysis, based on a substantial sample of countries, suggests that pull factors are the driving force of international flows. In fact, an interaction of restrictive policies with pull variables suggests that laxer admission policies increase the power of pull factors in the host economy (Orrenius, 2003).

These analyses suggest that the level of immigration depends heavily on economic conditions. As long as those conditions favour migration, reducing restrictions on immigration by either lifting caps or easing admission requirements should increase overall levels of immigration. This may not be a terribly provocative observation, but it is consistent with recent trends in the mobility of highly skilled individuals. Most observers agree that globalization is now the dominant force driving this type of movement (see also Chapter 1).

The ICT revolution appears to be one force of globalization, an observation reinforced by the timing of increasing migration during the New Economy boom of the 1990s and the fact that many new policies explicitly target ICT workers. The ICT revolution has fuelled globalization by helping to further flatten the differences between national markets. It also feeds agglomeration economies and helps link those major cities where skilled immigrants reside (Sassen, 2006; Smith, 2003). The ICT revolution favours highly skilled workers and may continue to do so, unless what appears to be the complexity of using today's ICT technologies changes and becomes accessible to lesser skilled workers. Secondly, economic development in transitional economies has altered the international specialization of production, enhancing demand for highly skilled workers in the advanced economies. There are, however, transitional economies that have a growing educated class and increased R&D capacity that may alter this scenario. Some observers think the most likely prognosis is for decreasing migration between industrialized countries and increasing migration between developing countries (Hatton and Williamson, 2003; McLaughlan and Salt, 2002).

6. Conclusion

The huge and growing differentials in the demographic profiles between developed and developing countries, coupled with persistent economic disparities, make it a certainty that there will be a plentiful supply of potential migrants for many years to come. No competing for migrants via ever laxer policies will be necessary, as the number of migrants may be expected to increase and satisfy demand; rather, the challenge will be to design policies with the right balance of elements to attract the best and the brightest, while also including incentives for the optimal return of migrants to encourage their participation in the economic development of their countries of origin.

At the same time, these forecasts do little to ease concerns about the potential effects of brain drain. Despite the surprisingly widespread belief that highly skilled migration is either benign or clearly beneficial to the development of the country of origin, the research literature suggests adverse economic consequences follow losses of more than 10 to 20 per cent of a source country's college educated population. Particular countries experience losses well above this range, while certain sectors, such as health services or information technology, also experience losses several times this amount. Moreover, the social costs of highly skilled migration to migrants and their families are hardly negligible (see Textbox 2.3). Given the foregoing speculation about future trends, the potential adverse effects of highly skilled migration are likely to remain a potent challenge to economic and social development.

Fortunately, there are a number of proactive policies that might be able to address those challenges and even generate optimal benefits from highly skilled migration.

Textbox 2.3

Social Costs of the Migration of Women Health Workers

Health care workers around the world are increasingly looking to migration to find employment. While health professionals may move abroad to pursue further training and career development, for many health workers, in particular for those moving from developing to developed countries, the main reason for migration is to find better pay and improved working and living conditions.

Public Services International (PSI), a global federation of public-sector trade unions representing more than 20 million workers, has documented many cases where the work in women-dominated labour market segments, such as the health sector, continues to be seriously undervalued and discriminated against. For example, a nurse with qualifications up to degree-level, plus five years professional experience and who supervises a team of 15, will earn only two-thirds of the salary of a craft supervisor, who, for instance, has completed an apprenticeship, has three years job experience and supervises two people. Similar examples of wage discrimination between female-dominated labour segments, such as nursing and caregiving, and jobs predominantly performed by men could be cited.

Moreover, the participatory research conducted in developing countries of origin by PSI in 2003-2004 demonstrated the effects of structural reforms and the reduction of public health services on women health workers, as they struggle with heavy workloads, low and inequitable wages, violence in the workplace, inadequate resources and the added responsibility of caring for their families. As a result, many women health workers have migrated or are considering migrating to find work in developed countries. However, when asked what their preferred choice would be, a majority of the workers interviewed during the research replied that they would prefer to stay in their home countries if they could earn a living wage.

The book published by PSI, *Who Cares? Women Health Workers in the Global Labour Market* (Van Eyck, 2005), presents the histories of women health workers as they struggle to cope with the difficulties of migration, gender disparities, deteriorating working conditions in the health sector and the undervaluing of women's work. Migration flows oriented towards the health care and health services sector are increasingly dominated by women migrants. Within what scholars refer to as the "global care chain", women increasingly migrate to find work overseas, allowing other women to participate in the local labour market (see also Textbox Int.3).

Hoping to find better paying jobs, health care workers leave health sector employment in their home countries to take up work abroad. Unfortunately, for many of them that hope does not always translate into reality. Private recruiters and unscrupulous employers prey on migrant workers and their vulnerability and desperation, charging exorbitant fees that could lead to a form of bonded labour. Several documented cases reveal breaches of work contracts, threats of deportation, health care professionals whose qualifications are ignored and who work in jobs well below their skill level, denial of trade union rights and various forms of exploitation and abuse. Women migrant health workers pay a high social cost as they face gender, class and race discrimination in their host societies, are subjected to heavy workloads, isolation and separation from their children and families, particularly in cases when family reunification is not possible. Separation of families due to migration has been known to lead to other societal problems, such as the eventual break-up of the family unit, alcoholism, drug abuse, juvenile delinquency and children's failure at school.

As the global union organizing and representing workers in the health sector, PSI launched in 2005 a project on *International Migration and Women Health Workers*, engaging public-sector trade unions in both home and host countries in bilateral

partnerships to provide information to potential migrant health workers on their rights and the realities of migration; organize and defend women health workers' rights to better pay and working conditions through adequately funded public health services; denounce cases of violations; and call for the application of ethical recruitment guidelines and internationally established human rights norms and standards in the employment of migrant health workers.

One example of an information and organizing tool developed by PSI is the *Pre-decision Kit for Migrant Health Workers*, which consists of a package of information and facts about the realities of migration, employment conditions and legal rights in the destination country, contacts to union resources and how to join unions, as well as other basic information explaining the issues surrounding migration in the health sector. It is called a "pre-decision kit" because trade unions aim to provide information at the pre-decision stage, when a health worker is still considering the option of migrating for employment. PSI believes that with proper information and trade union support and in cooperation with civil society organizations, governments and the private sector, various migration pitfalls and the abuse of migrant workers can be avoided.

***Source**: Geneviève Gencianos, Public Services International, http://www.world-psi.org/migration.*

REFERENCES

Antecol, H., D. Cobb-Clark and S. Trejo

2004 "The History of Selective Immigration in Australia, Canada, and the United States", *Brussels Economic Review*, Special Issue on Skilled Migration, 47(1): 45-56.

Borjas, G.J.

1999 "The Economic Analysis of Immigration" in O.C. Ashenfelter and D. Card (Eds), *Handbook of Labor Economics*, Vol. 3A, Elsevier, Amsterdam, 1697-1760.

Carrington, W.J. and E. Detragiache

1999 "How Extensive is the Brain Drain?", *Finance and Development*, 36(2), http://www.imf.org/external/pubs/ft/fandd/1999/06/carringt.htm.

Chiswick, B.R.

2005 "High Skilled Immigration in the International Arena", IZA Discussion Paper No. 1782, September, Forschungsinstitut zur Zukunft der Arbeit (Institute for the Study of Labour), Bonn, http://ftp.iza.org/dp1782.pdf.

Christian, B.P.

2000 "Facilitating High-Skilled Migration to Advanced Industrial Countries: Comparative Policies", Working Paper, Institute for the Study of International Migration (ISIM), Georgetown University, Washington, D.C.

Docquier, F.

2006 "Brain Drain and Inequality Across Nations", IZA Discussion Paper No. 2440, November, Institute for the Study of Labour, Bonn, http://ftp.iza.org/dp2440.pdf.

Docquier, F. and A. Marfouk

2006 "International Migration by Educational Attainment (1990-2000)" in C. Özden and M.W. Schiff (Eds.), *International Migration, Remittances and the Brain Drain*, Palgrave-Macmillan, London, 151-200.

Ellerman, D.

2003 "Policy Research on Migration and Development", World Bank Policy Research Working Paper 3117.

European Commission

2003 *Employment in Europe 2003. Recent Trends and Prospects*, Directorate-General for Employment and Social Affairs, September, Office for Official Publications of the European Communities, Luxembourg, http://ec.europa.eu/employment_social/employment_analysis/employ_2003_en.htm.

2005 *Policy Plan on Legal Migration*, COM (2005) 669 of 21 December.

2007 *Proposal for a Council Directive on the conditions of entry and residence of third-country nationals for the purposes of highly qualified employment*, COM (2007) 637 of 23 October.

Faini, R.

2003 "Is the Brain Drain an Unmitigated Blessing?", United Nations University, World Institute for Development Economics Research (UN-WIDER) Discussion Paper No. 2003/64, http://www.wider.unu.edu/publications/working-papers/discussion-papers/2003/en_GB/dp2003-064/.

Findlay, C. and T. Warren

2000 "The GATS and developing economies in the ESCAP region", *Studies in Trade and Investment*, 37: 11-60.

Florida, R. and I. Tinagli

2004 *Europe in the Creative Age*, February, Carnegie Mellon Software Industry Center, co-published in Europe with DEMOS, http://www.demos.co.uk/files/EuropeintheCreativeAge2004.pdf.

Ghosh, B. (Ed.)

2000 *Managing Migration – Time for a New International Regime?*, Oxford University Press, Oxford.

Global Commission on International Migration (GCIM)

2005 *Migration in an interconnected world: New directions for action*, Report of the GCIM, October, SRO-Kundig, Geneva, http://www.gcim.org/attachements/gcim-complete-report-2005.pdf.

Hanson, G.H. and A. Spilimbergo

1996 "Illegal Immigration, Border Enforcement, and Relative Wages: Evidence from Apprehensions at the U.S.-Mexico Border", Inter-American Development Bank (IADB) Working Paper Series 328, Washington, D.C.

Hatton, T.J. and J.G. Williamson
2003 "What fundamentals drive world migration?", National Bureau of Economic Research (NBER) Working Paper No. 9159 (September), Cambridge, MA.

International Organization for Migration (IOM) and Swiss Federal Office for Migration
2005 *International Agenda for Migration Management*, IOM and Swiss Federal Migration Office, Geneva/Berne.

Jones, H. and T. Pardthaisong
1997 "The commodification of international labour migration", Centre for Applied Population Research Paper 97/4, University of Dundee, Dundee, United Kingdom.

Koivusalo, M.
2003 "The Impact of WTO Agreements on Health and Development Policies", Globalism and Social Policy Programme, Policy Brief No. 3 (January), http://gaspp.stakes.fi/NR/rdonlyres/3000F54A-DDCF-48C4-AFFE-056867902724/0/policybrief3.pdf.

Kutznetsov, Y. (Ed.)
2006 *Diaspora Networks and the International Migration of Skills: How Countries Can Draw on Their Talent Abroad*, The World Bank, Washington, D.C.

Lowell, B.L.
2004 "Policies and Regulations for Managing Skilled International Migration for Work", United Nations, Department of Economic and Social Affairs (UN DESA), Population Division, New York, http://www.un.org/esa/population/meetings/ittmigdev2005/P03-LLowell.pdf.

2006 *An Evaluation of an Extended Index on Pro-Development Migration Policies*, Report to the Center for Global Development, Washington, D.C., http://www.cgdev.org/doc/cdi/2006/lowellMigration.pdf.

Lowell, B.L. and M. Bump
2006 "U.S. Competitiveness: Foreign Students in Science, Technology, Engineering and Math", ISIM, Georgetown University, Washington, D.C.

Lowell, B.L., A. Findlay and E. Stewart
2004 "Brain Strain: Optimising Highly Skilled Emigration from Developing Countries", Asylum and Migration Working Paper 3, Institute for Public Policy Research (IPPR), London, http://www.ippr.org.uk/ecomm/files/brainstrain.pdf.

Martin, P.L.
2003 "Highly Skilled Labor Migration: Sharing the Benefits", May, International Institute for Labour Studies, ILO, Geneva, http://www.ilo.org/public/english/bureau/inst/download/migration2.pdf.

Mayda, A.M.
2005 "International Migration: A Panel Data Analysis of Economic and Non-Economic Determinants", IZA Discussion Paper No. 1590, May, Institute for the Study of Labour, Bonn, ftp://repec.iza.org/RePEc/Discussionpaper/dp1590.pdf.

McLaughlan, G. and J. Salt
2002 *Migration Policies Towards Highly Skilled Foreign Workers*, Report to the Home Office, Migration Research Unit, University College London, http://www.geog.ucl.ac.uk/research/mobility-identity-and-security/migration-research-unit/pdfs/highly_skilled.pdf.

Meyer, J-B.
2001 "Network approach versus brain drain: Lessons from the diaspora", *International Migration*, 39(5): 91-110.

Massey, D.S., J. Arango, G. Hugo, A. Kouaouci, A. Pellegrino and J.E. Taylor
1994 "An Evaluation of International Migration Theory: The North American Case", *Population and Development Review*, 20(4): 699-751.

Ocampo, J.A.
2006 "International Migration and Development", presentation to the United Nations International Symposium on International Migration and Development, 28-30 June, Turin, http://www.un.org/esa/population/migration/turin/Turin_Statements/OCAMPO.pdf.

Organisation for Economic Co-operation and Development (OECD)
2004 *Trends in International Migration: Annual Report*, SOPEMI, OECD, Paris.

2006a *International Migration Outlook*, SOPEMI, OECD, Paris.

2006b *Education at a Glance 2006*, Chart Box C3.1, www.oecd.org/dataoecd/46/0/37368660.xls.

Orrenius, P.M.
2003 "Do Amnesty Programs Reduce Undocumented Immigration? Evidence from IRCA", *Demography*, 40(3): 437-450.

Papademetriou, D.G.
2003 "Innovation in the selection of highly skilled immigrants", presentation at the Athens Capstone Conference on Managing Migration for the Benefit of Europe, sponsored by the Greek Presidency of the European Union, 15-17 May, Athens.

Price, M. and L. Benton-Short
2006 "Counting Immigrants in Cities across the Globe", *Migration Information Source*, January, Migration Policy Institute (MPI), Washington, D.C., http://www.migrationinformation.org/Feature/display.cfm?ID=567.

Rollason, N.
2002 "International mobility of highly skilled workers: the UK perspective" in OECD (Ed.), *International Mobility of the Highly Skilled*, OECD, Paris, 372-342.

Russell, S.S.
1995 "International Migration: Implications for The World Bank", Working Paper No. 54, May, Human Capital Development and Operations Policy, The World Bank, Washington, D.C., http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1995/05/01/000009265_3961019111203/Rendered/PDF/multi0page.pdf.

Sami, M. and P. de Guchteneire (Eds.)
2006 Transnational Knowledge through Diaspora Networks, Special Issue, *International Journal on Multicultural Societies*, 8(1).

Sassen, S.
2006 *Territory, Authority, Rights: From Medieval to Global Assemblages*, Princeton University Press, Princeton, NJ.

Smith, H.
2002 "Global Migration: New Zealand and European Union Experiences and Challenges", paper delivered at the Inaugural New Zealand European Studies Conference, 31 May, National Centre for Research on Europe, University of Canterbury, Christchurch, New Zealand.

Suter, B. and M. Jandl
2006 *Comparative Study on Policies towards Foreign Students: Study on Admission and Retention Policies towards Foreign Students in Industrialised Countries*, International Centre for Migration Policy Development (ICMPD), Vienna, http://www.icmpd.org/774.html?&F=2&tx_icmpd_pi2%5Bdocument%5D=548&cHash=10fde5b0ec.

Transatlantic Learning Community
1999 *International migration in Europe and North America: policy recommendations for the new millennium*, Final Report of the Transatlantic Learning Community prepared for the Cooperative Efforts to Manage Emigration (CEME) Project, University of California at Davis.

Van Selm, J. and E. Tsolakis
2003 "The Enlargement of an 'Area of Freedom, Security and Justice': Managing Migration in a European Union of 25 Members", Policy Brief No. 4, May, MPI, Washington, D.C., http://www.migrationpolicy.org/pubs/eu_enlargement.pdf.

Zlotnik, H.
2005 "International Migration Trends Since 1980" in *International Migration and the Millennium Development Goals: Selected Papers of the UNFPA Expert Group Meeting, Marrakech, Morocco, 11-12 May 2005*, United Nations Population Fund (UNFPA), New York, 13-28, http://www.unfpa.org/upload/lib_pub_file/487_filename_migration_report_2005.pdf.

Textbox 2.1 - Globalization and the Mobility of Health Workers

Dovlo, D. and T. Martineau

2004 "A Review of the Migration of Africa's Health Professionals", Working Paper 4-4, Joint Learning Initiative on Human Resources for Health, Harvard University, Cambridge, MA.

Joint Learning Initiative (JLI)

2004 *Human Resources for Health: Overcoming the crisis*, JLI, Harvard University Press, Cambridge, MA, http://www.who.int/hrh/documents/JLi_hrh_report.pdf.

Marchal, B. and G. Kegels

2003 "Health workforce imbalances in times of globalisation: brain drain or professional mobility", *International Journal of Health Planning and Management*, 18/S1: S89-S101, http://www3.interscience.wiley.com/cgi-bin/jissue/106561850.

Mullan, F.

2005 "The Metrics of the Physician Brain Drain", *The New England Journal of Medicine*, 353/17: 1810-1818.

Pond, B. and B. McPake

2006 "The health migration crisis: the role of four Organisation for Economic Co-operation and Development countries", *The Lancet*, 367/9520 (29 April): 1448-1455, http://www.thelancet.com/search/results?search_mode=cluster&search_cluster=thelancet&search_text1=Pond+and+McPake&x=15&y=12.

United Nations Population Fund (UNFPA)

2005 *International Migration and the Millennium Development Goals*, UNFPA, New York, http://www.unfpa.org/upload/lib_pub_file/487_filename_migration_report_2005.pdf.

Wilbulproprasert, S., C. Pachanee, S. Pitayarangsarit and P. Hempisut

2004 "International service trade and its implications for human resources for health: a case study of Thailand", *Human Resources for Health*, 2(10), http://www.human-resources-health.com/content/pdf/1478-4491-2-10.pdf.

World Health Organization (WHO)

2006 *Working together for health. The World Health Report 2006*, WHO, Geneva, http://www.who.int/whr/2006/whr06_en.pdf.

Textbox 2.2 - Impacts of Return Migrants on the IT Industry in India

Babu, M.

2003 "Do NRI techies need motivation to return home?", *IT People Evolve*, http://www.expressitpeople.com/20030818/abroad1.shtml.

Chishti, M.

2007 "The Rise in Remittances to India: A Closer Look", *Migration Information Source*, February, Migration Policy Institute, Washington, D.C., http://www.migrationinformation.org/Feature/display.cfm?id=577.

Hira, R.

2004 "U.S. Immigration Regulations and India's Information Technology Industry", *Technological Forecasting and Social Change*, 71(8): 837-854.

Kalita, S.M.

2006 "A Reversal of the Tide in India: Tech Workers Flow Home to More Success", *Washington Post*, 28 February, http://www.washingtonpost.com/wp-dyn/content/article/2006/02/27/AR2006022701513.html.

Menon, R.

2003 "NRI techies head back home", *The Times of India*, 30 October, http://timesofindia.indiatimes.com/articleshow/258117.cms.

Shiels, M.

2003 "IT professionals return to India", BBC News, 23 July, http://news.bbc.co.uk/2/hi/business/3083817.stm.

Vinutha, V.

2005 "India beckons", Express Computer Online, 21 March, http://www.expresscomputeronline.com/20050321/technologylife01.shtml.

Weisman, R.

2005 "High-tech talent flows back to India: those who helped fuel US boom may spur brain drain", *The Boston Globe*, 8 August, http://www.boston.com/news/world/asia/articles/2005/08/08/high_tech_talent_flows_back_to_india/.

Textbox 2.3 - Social Costs of the Migration of Women Health Workers

Van Eyck, K. (Ed.)

2005 *Who Cares? Women Health Workers in the Global Labour Market*, Public Services International (PSI) and UNISON UK, Ferney-Voltaire, France, http://www.world-psi.org/Content/ContentGroups/English7/Publications1/Who_Cares.pdf.