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CARIM-INDIA – DEVELOPING A KNOWLEDGE BASE FOR POLICYMAKING ON INDIA-EU MIGRATION

Co-financed by the European Union

Indian Human Resources Mobility: Brain drain versus Brain gain

Natalia Buga, Jean-Baptiste Meyer

CARIM-India Research Report 2012/04



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CARIM-India
Developing a knowledge base for policymaking on India-EU migration

Research Report
Background Paper
CARIM-India RR2012/04

Indian Human Resources Mobility:
Brain drain versus Brain gain

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CARIM-India – Developing a knowledge base for policymaking on India-EU migration

This project is co-financed by the European Union and carried out by the EUI in partnership with the Indian Council of Overseas Employment, (ICOE), the Indian Institute of Management Bangalore Association, (IIMB), and Maastricht University (Faculty of Law).

The proposed action is aimed at consolidating a constructive dialogue between the EU and India on migration covering all migration-related aspects. The objectives of the proposed action are aimed at:

- Assembling high-level Indian-EU expertise in major disciplines that deal with migration (demography, economics, law, sociology and politics) with a view to building up migration studies in India. This is an inherently international exercise in which experts will use standardised concepts and instruments that allow for aggregation and comparison. These experts will belong to all major disciplines that deal with migration, ranging from demography to law and from economics to sociology and political science.
- Providing the Government of India as well as the European Union, its Member States, the academia and civil society, with:
 1. Reliable, updated and comparative information on migration
 2. In-depth analyses on India-EU highly-skilled and circular migration, but also on low-skilled and irregular migration.
- Making research serve action by connecting experts with both policy-makers and the wider public through respectively policy-oriented research, training courses, and outreach programmes.

These three objectives will be pursued with a view to developing a knowledge base addressed to policy-makers and migration stakeholders in both the EU and India.

Results of the above activities are made available for public consultation through the website of the project: <http://www.india-eu-migration.eu/>

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Abstract

India is a major source of migrants, especially of highly-skilled and well-trained workers. This paper attempts to show that even with a high number of Indian talents abroad, India – as well as destination countries – takes advantage of the resources generated by this population. Traditionally the flows of Indian professionals have been directed towards the United States, Canada, the United Kingdom and other similar destinations. Recently, however, Western European countries are being selected as migration options. In this paper, the growing diversification of receiving countries is explained as a consequence of European immigration policies focusing on highly-skilled migrants, demographic trends which raise several questions related to labour shortages and, finally, the effects of the global economic crisis on mobility. The migration of highly-skilled Indians is analyzed and put in the context of globalization and the intensification of the knowledge-based economy. The paper shows that what has happened in India might stand as a win-win scenario with wider application where a brain drain may be converted into a brain gain.

I. Highly skilled diasporas from India – a consequence of globalization

Magnitude of brain drain

In the last years, the numbers of Indian migrants, especially highly-skilled migrants, have increased considerably in our globalized world. The departure abroad of a large number of well-trained Indians naturally has led to concerns about “brain drain” in India. In 2010, India with an estimated stock of 11.4 million emigrants was the second emigration country in the world, behind Mexico (11.9 million)¹. In absolute terms, India is among the countries which lose most highly-skilled workers to foreign markets. In 2000, India was, for example, the first sending country of physicians with 57,383 or 9.9% of the total number of physicians trained in the country going abroad (Bhargava, Docquier, and Moullan 2010). India and the Philippines supply most foreign-trained doctors and nurses to the OECD, notably to English-speaking countries. The emigration of health professionals has negative effects on India, especially in rural areas where the density of doctors is lower than in urban areas. Despite increasing internal demand, India still has a very low density of doctors (0.6 per thousand people in 2004) compared with 3 in the US and 2 in Canada. Compared with other large origin countries, India records higher expatriation rate of doctors: 8%; while the expatriation rate of, say, Chinese doctors is about 1%. This does not prevent, of course, India from having a large and powerful modern health sector; as in other countries, the migration of health professionals may coexist with a dynamic urban sector and the inequitable social distribution of medical resources at the country level.

However, in spite of the high number of Indian specialists going abroad, the problem of brain drain is not a generalized phenomenon in India because only a few sectors deal with its negative consequences. One of the most affected sectors is genetic engineering and biotechnology which copes with shortages of junior staff, as approximately 90% of post-graduates in this field go to the US after the completion of their studies in India.²

The available data on the numbers of highly-skilled Indian emigrants suggest that the country does not suffer seriously from brain drain. The effects of this phenomenon should be moderated then because the relative numbers show that India is among the least affected countries by such emigration. In 2000, the emigration rate of tertiary-educated population from India was estimated at 4.3%³. This is low, as with other emerging economies and certainly compared to small countries like Guyana which has 89% of its tertiary-educated population abroad or Grenada and Jamaica with a highly-skilled emigration rate of 85.1%⁴. There are no accurate figures of how this rate evolved during the last decade. However, it is important to underline that some categories of Indian scientists are more affected by the exodus of talent than their peers from other countries such as China or Brazil, the two other emerging giants. While the R&D expatriate staff from the latter is under 5% of the total, this figure stands at more than 15% for India. Therefore, according to which criterion serves to discriminate migrant categories, the emigration rate of the highly-skilled may be more or less significant.

Evolution of Indian migration flows

The geographical distribution of Indian migrant destination countries is defined by the level of qualification. The migration flows of the highly-skilled are oriented towards traditional Indian

¹ World Bank, *Migration and Remittances Factbook 2011*

² UK Parliamentary Office of Science and Technology, POSTnote 309 June 2008, *International Migration of Scientists and Engineers*, page 3

³ World Bank, *Migration and Remittances Factbook 2011*

⁴ F. Docquier and H. Rapoport (2007), *Skilled migration: the perspective of developing countries*, IZA Discussion Paper Series N 2873

destinations, namely: the US, Canada, the UK and more recently toward non-English speaking EU countries. This wave was accelerated by Indian integration into the world economy. Semi-skilled and unskilled Indian workers are predominantly concentrated in the high-income countries of the Gulf Cooperation Council. These migrants have also been viewed for a long time as key providers of remittances. Current emigrants from India show an evolution of Indian labour migration, confirmed by the presence of highly-skilled flows towards the Gulf, a destination traditionally reserved for unskilled and semi-skilled Indians. The same trend is recorded regarding highly-skilled flows towards the US, Canada, Australia and Europe where unskilled Indian migrants mix with more qualified categories.

The free movement of capital, goods, technology and information is a crucial pillar of the world economy, while the international mobility of people is rendered more difficult. In the context of a global economy, moreover in the era of knowledge-based economy, the free movement of labour, notably of well-trained manpower has become a key component of economic growth. In the fight for market shares and under the pressure of growing global competitiveness, the developed countries seek to attract the best and brightest minds to win this battle. With a well-educated and large workforce India is an important provider of highly-skilled specialists for many developed economies including EU countries, which have become increasingly popular destinations.

In 2009, enrolment in higher education in India was only 16% compared to 89% in the United States, 55% in France and 24% in China. Despite the low rate of enrolment in higher education, in absolute terms, India is the third largest higher-education system in the world, behind only the United States and China⁵.

Higher education in India evolved considerably after independence in terms of the number of universities as well as in terms of access to higher education. Nowadays, the number of universities in India has grown some 35 times comparing to 500 colleges and 20 universities before independence which are enrolling more than 11 million students, more than 10 times before independence. Before independence education was limited and elitist: the current system is though more open with from 30-40% of enrolments from coming from the lower castes, and with women representing some 35% of the total number of students⁶.

The impressive increase in higher education has raised some questions over the adequacy of studies, resources, institutional quality and standards, not to mention teaching methods. Opinions diverge concerning the quality of education in India⁷. However, it is well known that a large proportion of migrants graduated in the most prestigious schools including the Indian Institutes of Management and the Indian Institutes of Technology.

II. Highly skilled Indians in the context of a knowledge based economy

India a «brain reservoir» in the new economy

The growth in knowledge intensive activities in the developed world has led to a growing demand for S&E⁸ professionals. With an important reserve of trained people in this domain, India is becoming a major supplier of human capital for the advanced economies. India is sending large numbers of these specialists compared to other important origin countries. A relevant example is the number of Indian students in science and engineering enrolled in US undergraduate degree programs. India, China, and South Korea are the top countries of origin for foreign students in the United States in science and

⁵ (UNESCO-UIS) Education (all levels) profile – India, United States and World Bank (Data/Indicators) – Education

⁶ World Bank, Higher Education in India, *Country Summary of Higher Education*

⁷ Science and Engineering Indicators 2008, *Chapter 2: Higher Education in Science and Engineering-Recent Developments in Higher Education in India*

⁸ Science and Engineering

engineering: India with 68,000 students in 2009 accounts for the largest number of foreign students here, followed by China with 54 000 students. Together these countries account for almost 47% of all foreign science and engineering student enrolled in U.S universities⁹. Germany is also recruiting foreign students from India, notably in engineering and computer sciences. The United States remain the most important host country of highly-skilled Indian migrants with more than 80% of Indian skilled migration to all developed countries. In the host countries, Indian migrants are among the best-educated and highest-earning groups. The US Census Bureau's 2008 American Community Survey found that 74.1% of an estimated stock of 1.6 million of Indian immigrants held at least a bachelor's degree, and 68.9% were hired in management, professional, and related positions (Naujoks, 2009). According to the US Government Accountability Office (GAO), 46.9% of highly-skilled workers admitted under the H-1B visa between fiscal year 2000 and fiscal year 2009 were born in India¹⁰. In 2004, the US was the favored destination of 62% of the 71,290 physicians emigrating from India while 32% chose the UK (Bhargava, Docquier, and Moullan, 2010). In the European Union, the UK is the first destination of highly-skilled Indian migrants attracting two thirds of the total number of Indian migrants in Western Europe (Khadria, 2008). Indians also represented more than 40% of the estimated 22,000 entries under the UK's Highly-Skilled Migrant Program¹¹.

Indian students: an important source of labour for developed economies

An important place in the flows of well-trained Indian migrants is taken by Indian students. India, for example, accounts for 5.5% of the 2.8 million students studying outside their home-country. After China (421,100), the country sends the greatest number of students abroad: 153,300¹².

In 2009, the EU-27 hosted 1.6 million foreign students in tertiary education. 13 53,930 were Indian citizens. The first destination was the UK (42,406) followed by Germany (3,629), Cyprus (1,588) and France (1,252)¹⁴. According to the table below, in 2009, India was behind only China in sending students in the EU-27. The other two main countries of origin were Morocco with 44,800 students and the United States with 32,100 students. Nigeria and Brazil, the two non-Asian big demographic pools send only, respectively half and one third of India's numbers.

⁹ Joan Burrelli (2010), *Science and Engineering Indicators Program*, Division of Science Resources Statistics, National Science Foundation

¹⁰ United States Government Accountability Office, *H-1B Visa Program. Reforms are Needed to Minimize the Risks and Costs of Current Program*, Report to Congressional Committees, January 2011

¹¹ OECD, *International Migration Outlook : SOPEMI 2008*

¹² UNESCO, Institute for Statistics, *Global Education Digest 2009, Comparing Education Statistics Across the World*

¹³ International Standard Classification of Education (ISCED) levels 5 and 6

¹⁴ Eurostat, Foreign students in tertiary education (ISCED 5-6) by country of citizenship [educ_enr18], Extracted Data on 20.09.2011

Table: Main countries of origin of non-national students in the EU member States					
	Foreign students in EU-27 (in thousands)				
	2000	2006	2007	2008	2009
Total	787,90	1349,00	1430,20	1467,40	1554,10
Europe	383,80	566,30	599,60	608,14	653,30
Africa	134,20	241,30	246,00	242,00	253,00
Morocco	38,20	47,90	46,30	44,20	44,80
Algeria	14,90	23,20	21,80	20,20	20,70
Nigeria	3,50	19,30	22,00	23,30	27,50
Asia	183,00	376,10	405,50	413,50	459,30
China	18,60	113,50	117,50	115,80	123,60
India	6,60	33,10	39,30	43,10	53,90
Japan	10,70	12,70	12,40	10,50	10,30
America	63,00	110,40	121,60	124,30	141,10
USA	22,70	29,80	32,20	30,80	32,10
Canada	5,80	10,10	10,80	10,80	11,50
Brazil	6,80	11,30	12,90	14,60	17,60
Oceania	2,90	7,40	7,70	7,01	7,11
Australia	2,10	5,30	5,60	5,20	5,21
Unknown nat.	20,90	47,50	49,80	72,45	40,29

Source: Eurostat

According to the US Department of Homeland Security India was, in 2009, the first country of origin among foreign students enrolled in US universities: indeed, 16% of all foreign students were Indian.

Engineering is a favorite career choice for a large number of students at the undergraduate level in India. It is estimated that, in 2008, 350,000 engineering degrees, 23,000 engineering masters degrees and about 1,100 PhD's were awarded in India itself¹⁵. Due to their preference for science and engineering disciplines, international Indian students are a potential source to fill labor shortages in host country's knowledge-intensive sectors. Their top three fields of study are: engineering; maths and computer science; and business and management. In 2009, 67,800 Indian science and engineering (S&E) students enrolled in US higher-education institutions: 26.2% of all foreign S&E students in the US¹⁶. Enrolment of Indian students in S&E disciplines accounted for 72% of 94,300 Indian students enrolled in US universities in 2009. 69% of these were completing a Master's Degree and 18% a PhD Degree¹⁷. At the EU level more than one third (34.4 %) of 19 million students in tertiary education are studying social sciences, business or law. Engineering, manufacturing and construction degrees attract only 14.1 % of the total number of European students (Eurostat-Tertiary Education Statistics). In comparison with India where S&E education is a priority, in Europe the share of these students is actually decreasing. This situation may lead to the reinforcement of India's position as a supplier of human-resources necessary in sustaining Europe's progress towards a knowledge-based economy.

¹⁵ Rangan Banerjee and Vinayak P. Muley (2008), *Engineering Education in India*, Department of Energy Science and Engineering and Indian Institute of Technology Bombay

¹⁶ Department of Homeland Security, U.S. Immigration and Customs Enforcement, Student and Exchange Visitor Information System database, special tabulations: 2010

¹⁷ National Science Foundation, *Foreign Science and Engineering Students in the United States*, InfoBrief July 2010

The shift in the global distribution of knowledge

India is not only a supplier of skilled manpower. It is also a key player in knowledge creation. According to the UNESCO Science Report 2010, a shift in global influence in the stock of world knowledge was recorded. Asian countries now contribute more to the world GERD¹⁸. Thanks, above all, to China, India and the Republic of Korea, Asia's world share grew from 27% to 32%, at the expense of the Triad (US, EU and Japan). India's participation in the world GERD grew from 1.6% in 2002 to 2.2% in 2007 while the participation of the Triad decreased during this same period¹⁹. India registers good results in terms of economic growth and investment in knowledge. Tertiary education and R&D activities are at the heart of public policy. A priority here is the improvement in terms of the quality and quantity of human resource in science and engineering. Government efforts in science and technology are expressed by the initiative to establish 30 new universities in India, increasing the number of enrolled students from fewer than 15 million in 2007 to 21 million by 2012 (UNESCO Science Report 2010).

As noted above, the Indian government is seeking to raise the enrolment of students in science and engineering, while EU students in these disciplines shrink.

III. Diversification of destinations for Indian human capital

The internationalization of knowledge creation and the rapid expansion of R&D activities determined the diversification of receiving countries for professionals and skilled workers from India. Traditional migration streams of highly-skilled Indian were directed toward the United States and the UK. In the 2000s, new non-English-speaking destinations emerged in Europe such as Italy, France, Germany and other European countries. The number of skilled Indian migrants moving to Australia, Canada, and New Zealand also increased.

Increasing numbers of highly-skilled Indians in Indian migration flows to Europe in response to favorable immigration policies in some European destinations

Considering the premium put on knowledge today, the competition for attracting and retaining skilled Indians is heating up. The EU increasingly reacts to this competition. It has shifted from an approach of addressing acute skill shortages through local labour supply, with little possibility of permanent residency, to a longer run approach based on integration into the receiving society. Europe has moved from specialized temporary programmes such as Green Card Scheme introduced in 2000 in Germany, to highly-skilled migrant programmes for permanent employment, allowing settlement. Another dimension of this new approach is expressed by the possibility of foreign students working in the host country after graduation, allowing them to shift from temporary student status to permanent resident status. These initiatives are more specifically promoted during a period of economic growth. In a crisis situation, destination countries are more prone to review their immigration policies and to harden conditions of access to domestic labour markets for foreign students.

The current economic situation in Europe induced by the sovereign debt crisis could possibly influence migration patterns of Indians. But fundamental changes are unlikely, except if the general situation is drastically modified. Such action as the home-affairs decision in France, aimed at limiting the access of foreign students to the national labour market, increasing xenophobic attitudes towards migrants or other protectionist measures could affect inflows of highly-skilled Indians, at least during the period of crisis.

¹⁸ Gross Domestic Expenditure on R&D

¹⁹ UNESCO 2010, *UNESCO Science Report 2010, The current Status of Science around the World*

Increase in the immigration of Indian migrants to the EU due to favorable policies

Over the last few years, the EU has been seeking to put in place measures which comprise effective integration policies addressing education and labour market issues. This is proven by the number of Indian immigrants who acquired EU citizenship. In 2006, 20,600 (2.8%) of 735,000 citizens granted by the European countries were Indians. In 2008, in a context of lower immigration figures, 15,200 Indians acquired citizenship of an EU Member State which represents 2.2% of the total number of acquisitions recorded in the EU. In 2009 this number doubled. Among 776,000 naturalized persons, 4% were Indian citizens, making Indians the third largest group after Moroccans (7.7%) and Turkish citizens (6.7%) to become citizens of an EU member State (Population Database - Eurostat). Such a trend would have to be checked over a number of years. For the moment, however, it tends to show the attractiveness of Europe to the highly-skilled Indian workforce.

Table 1. Main EU member States granting citizenships to Indians in 2009

Total acquisitions in EU-27	United Kingdom	Portugal	Germany	Italy	Other
	% of total EU	% of total EU	% of total EU	% of total EU	% of total EU
31,100	85.3%	3.2%	2.9%	2.9%	5.7%

Source: Fabio Sartori, *Acquisitions of citizenship on the rise in 2009*, Population and Social Conditions, EUROSTAT, Statistics in focus 24/2011, p. 7

The formulation of more favorable immigration conditions for highly-skilled persons determined the strong presence of this category in the Indian immigration flows to Europe. Current Indian mobility to Europe is mainly a movement of students and skilled workers in IT, medicine, finance, academia and other areas. The predominance of the highly-skilled is revealed by the high level of residence permits granted to Indian nationals by European countries for employment and education. Among 201,398 new permits issued to Indians at the EU level, 37% were for employment and 26% for education purposes.

Table 2. New residence permits issued to Indians in 2010 in EU-27, by reason

Employment		Education		Family reunification		Other		Total first permits
Permits by reason	% of total permits	Permits by reason	% of total permits	Permits by reason	% of total permits	Permits by reason	% of total permits	
73,851	37%	51,501	26%	45,237	22%	30,809	15%	201,398

Source : Eurostat, Population Database - Residence permits (migr_res)

Amongst the citizens of non-EU countries, Indians are the largest group to obtain residence permits for employment (37%). In 2010, the number of permits issued to Indian citizens for employment increased by 14% comparing with 2009. The number of permits granted to highly-skilled Indians is also going up. According to Eurostat data, highly-qualified professionals from India and the United States are the largest groups receiving resident permits for this type of work. The table below shows that the number of permits issued to highly-skilled Indians and to Indian researchers increased in 2010 by 9% to the detriment of the number of permits for seasonal workers which decreased by 9% over 2009. However, it went along with a general increase of workers from this country, not exclusively highly-skilled ones. The proportion of the latter category increased from 17.5% to 18%.

Table 3. First residence permits issued to Indians for remunerated activities at the EU level, by type of work permit, in 2009 and 2010

Country of origin		Total permits	Highly-skilled workers		Researchers		Seasonal workers		Other economic reasons	
India	2009	64,592	India	11,784	India	658	India	4,163	India	47,844
	2010	73,851		12,852		724		3,783		56,488
Total EU	2009	654,015	Total EU	39,027	Total EU	6,228	Total EU	56,518	Total EU	546,749
	2010	808,061		40,786		7,172		114,311		645,493

Source: Population Database – Eurostat

The highly-skilled nationals of India are most prominent in the United Kingdom. Among 12,852 permits issued for Indian highly-skilled workers in 2010, 5,615 or 44% were issued by the UK. Italy is the first European destination for seasonal workers. In 2010 Italy issued 3,479 permits accounting for 92% of Indian seasonal workers in the EU.

Multiplication of European destination for Indian migrants

If, at the level of EU countries, immigration flows decreased by 21% compared to 2008, in 2009 Indian immigration increased by 16% reaching 108,341 which accounts for around 6% of all non-EU nationals. India-EU migration trend, in recent years, shows not only a gradual expansion, but also a diversification both in terms of source of flows and their destinations. Indian migration to Europe is a recent function of unskilled and skilled migrants with a growing element of skilled professionals, due to the EU immigration policies focused on skilled migrants. In 2008, India was the third non-EU source country (93,436) behind only Morocco (150,000) and China (97,000) (Eurostat). Despite the fact that the UK remains the main EU destination for Indian migrants, hosting 59%, in 2009, new European countries have emerged as attractive destinations. In 2001, only three European countries attracted over 1,000 Indian immigrants and three other attracted between 500 and 1000 Indians: in 2009, 10 EU Members states attract over 1,000 Indians.

Table 4. Evolution of European destinations for Indian migrants from 2001 to 2009

2001			2009		
EU country	Indian immigrants	Stock of Indian citizens	EU country	Indian immigrants	Stock of Indian citizens
1. United Kingdom	16,001	150,676	1. United Kingdom	64,000	293,000
2. Germany	8,949	35,183	2. Italy	12,769	91,855
3. Italy	4,820	32,507	3. Germany	12,009	47,025
4. Austria	836	4,879	4. Spain	5,956	29,754
5. Spain	835	6,790	5. Netherlands	2,699	8,003
6. Netherlands	684	3,361	6. Sweden	1,795	4,676
			7. Belgium	1,787	6,749
			8. France	1,458	13,000
			9. Poland	1,137	269
			10. Ireland	1,078	4,046
Total EU	33,390	250,269	Total EU	108,341	518,645

Source: Population Database-Eurostat and OCDE, International Migration Database

The same trends are recorded for the current international mobility of Indian students, which is no longer limited to the US and the UK; rather other European countries such as Germany and France have also confirmed their place as favored destinations. These trends were most accentuated by the global recession and by demographic concerns. Destination countries are now increasingly attracting Indian students not only in terms of funds, but also in terms of long-run socio-economic benefits accruing from these highly-skilled migrants, who will largely become permanent residents in the host country after graduation.

India a supplier of young and well trained-people for European countries

With the global reliance upon skilled people and new demographic conjuncture, the EU is increasingly likely to draw on the available pool of young and well-trained Indians. In order to sustain growth and to address population ageing issues, the EU has to consider the capacity of India in terms of human-capital formation.

Increasing economic interdependence among nations, growing demand for skilled labour in the knowledge economy not to mention demographic trends are all strengthening the position of India as a major supplier of young, educated and qualified manpower for the EU. Owing to its demographic profile and its English-speaking population, India, with its large reserves of highly-skilled workers, has emerged as one of the most prominent country to fill the supply gaps in the labour-deficient economies of the developed world. Taking into account EU economic objectives coupled with demographic and ageing effects, Member States have put in place selective immigration policies

aimed at attracting highly-skilled professionals and tertiary-level international students from South Asia. Through the European Blue Card, following the principles of the American Green Card, the EU intends to attract 20 million well-trained workers in the next 20 years (Sawahel 2007, Khadria, 2008b). Moreover, negotiations in early 2012 over the free-trade agreement launched in 2007 between the EU and India could reinforce the immigration of highly-skilled Indians to the EU, which will mean easier access for Indian workers to EU countries in return for access to India's domestic market.

In order to facilitate labour mobility, some EU countries signed labour-mobility partnerships with India. According to the Ministry of Overseas Indian Affairs, this kind of agreements was signed with Denmark, and negotiations are ongoing with other European countries, EU and non EU, including Poland, the Czech Republic, Norway, Switzerland and Hungary, Sweden and France.

Current demographic trends will shape future international migration patterns and will underline the necessity of good migration management among countries experiencing steady population growth and countries witnessing serious population decline.

The evolution of age structure will also prove an important element which will determine the dynamics of human mobility between India and the EU. The median age of the EU27's population was 40.9 years in 2010 (Eurostat), which means that half of the European population is older than 40.9 years while the median age of the Indian population was 26.2 years (2010 CIA World Factbook). The number of older people in the EU27 is expected to continue to grow, with the portion of the population aged 65 years and over increasing from 17.1% in 2008 to 30.0% in 2060, and those aged 80 and over will rise from 4.4% to 12.1% over the same period (Eurostat newsrelease). By contrast, India will experience a growth in its working age population.

With a large and growing population of 1.15 billion, India will be a major player in international migration. According to the Indian Office of the Registrar General & Census commissioner, the population of India is expected to increase to 1.4 billion in 2026 overtaking China at that point. Population growth in India is set to continue and large numbers of young people will enter the labor force age group of those aged 15 to 64. By 2020, India will become the world's largest pool of young people estimated at 820 million as compared to the present number of 400 million²⁰. Moreover, 3.5 million graduates and postgraduates are added annually to the talent base. No other country offers a similar combination and scale of human resources (NASSCOM). The Indian labor force will increase, while many destination countries will continue to see a shrinking working age population. Europe will be particularly affected since it has a lower fertility rate: 1.59 live births per woman by 2009 (Eurostat), even lower than the United States with 2.06 children (CIA statistics) compared to India with 2.7 children per women (UNICEF statistics).

International migration plays an important role in the size and structure of the population in most EU countries. In January 2011, the total population increased by 1.4 million compared with 2010, due to a positive net migration of about 0.9 million (64%)²¹. Immigration in many European countries is not only a factor in population growth, it is also a way to achieve a younger population.

Nonetheless, immigration, especially immigration from India, is not a unique solution or perspective. Europe may, indeed, draw upon traditional and closer work force providers, like the MENA region (World Bank 2009). It may also optimize its use of endogenous human resources, either with the better employment of highly-skilled female work forces or young tertiary educated professionals. But the opening of new sources of highly-skilled labour expands its portfolio of available options in proactive strategies towards sustainable development.

²⁰ Annual Report of the Ministry of Overseas Indian Affairs 2008-09, Government of India

²¹ M. Marcu (2011), *Population grows in twenty EU Member States*, Eurostat Statistics in focus 38/2011, Population and social conditions

IV. The Economic downturn resets the flows of highly-skilled Indians

The OECD countries economic downturn since 2008 has revealed new trends in migration flows from India. Anecdotal evidence indicates that the number of Indian immigrants increased in Europe after the beginning of the crisis, to the detriment of the United States. At the same time, due to current favorable economic conditions at home, many Indian professionals settled abroad decided to return to India.

The favorable situation at home spurs return migration

Driven by a multi-dimensional force of economic growth, India is becoming more attractive to its highly-skilled migrants. The economic growth rate, the improvement of living and working conditions in the home country and the deteriorating growth of advanced economies coupled with the feeling of nostalgia motivate many skilled Indian migrants to return.

India has been the second fastest-growing economy in the world, second only to China, averaging over 6 percent growth per year over the past decade and a half. During the global recession, 2008-09, China and India witnessed slightly slower rates of growth, consequently their economies continued to catch up even during the crisis. While most of the world's economies including the US and the EU are dealing with the recession, India's GDP still grew 4.9% in 2008, 9.1% in 2009 and 9.7% in 2010. The United States witnessed a decrease of 2.7% in 2009 and a slight growth of 2.9% in 2010 (World Bank Data). EU economic growth also suffered from the 2008 global economic and financial crisis. Real GDP contracted by 4.3 % in 2009 and recorded a moderate increase of 1.9% in 2010 (Eurostat statistics).

This current situation in India spurs reverse migration. Indian expatriates take advantage of the context by exploiting interesting career opportunities at home, lower costs, growing markets and their business networks established in their countries of destination. Many Indian professionals settled in the United States choose to return to India or to move to Europe in search of better opportunities. According to the Indian newspaper *Business Standard*, approximately 60,000 Indian professionals returned to India from the US in 2010²². The projections done by the US based Kelly Services, a global company in workforce solutions, point out that by 2015 the number of returnees may attain 300,000²³. This figure is related to Indians settled in the US and the EU. The reasons of this return are: the economic crisis in the destination countries which leads to job insecurity; growth opportunities in India and nostalgia which accelerated the decision to return, in a favorable context, to the country of origin.

Steady economic growth creates significant opportunities at home and is able to discourage emigration and to stimulate return migration. Despite good economic conditions in India, the pressure to migrate to developed countries is still high. Differences in salaries and in living standards are likely to persist and to spur international movements. Social networks and remittances will continue to sustain the continuity of migration flows from India. Therefore, some educated Indians will choose to put their skills to use in high-income countries as labor migrants or students. The current admission conditions and integration policies focused on highly-skilled immigrants in Europe encourage not only professionals from India to move to Europe, but also Indian specialists settled in the United States to come to Europe in search of better opportunities and possibilities to get permanent residence.

After the crisis peak of 2008 Indian migrants preferred EU countries to the US

Even though the US recorded superior economic growth in 2010, compared to the EU, Indian migrants seem more attracted by European countries. Beyond economic conditions in host countries, there are other factors that explain the current orientation of highly-skilled flows of Indian migrants towards Europe such as the possibility of getting the status of permanent resident lower school fees more easily

²² Kala Seetharam Sridhar & V Sridhar, *The risks of coming home*, Business Standard, 18 June 2011

²³ Partha Sinha and Namrata Singh, Three lakh Indians working abroad may return to India by 2015, *TheEconomicTimes*, 2 November 2011

and the possibility of integrating into the local labour market after graduation. It is important to note that due to the current European sovereign debt crisis, these aspects may deteriorate temporarily. Another aspect of the new direction of Indian migratory flows may also be explained by the saturation effects of migration to the US and the willingness of Indian migrants to explore new destinations.

Available data on the number of Indian migrants to the EU and to the US show that after the financial crisis started in the US, Europe attracted highly-skilled workers and students from India to the detriment of traditional destinations strongly affected by the crisis. The number of Indian immigrants in the United States decreased by 9.5% in 2009 compared to 2008 diminishing from 63,352 in 2008 to 57,304 in 2009 (OCDE, International Migration Database). Even if India accounted for 36.3% of the total 339 243 H-1B visas issued in 2009, the number of H-1B visa holders from India decreased by 20% compared to 2008²⁴. By contrast, the flows of Indian immigrants admitted in the EU 27 increased from 93,436 immigrants in 2008 to 108,341 in 2009 (Eurostat statistics and OECD statistics). The Indian immigrants stock in the EU in 2009 increased by 8.6% compared to 2008.

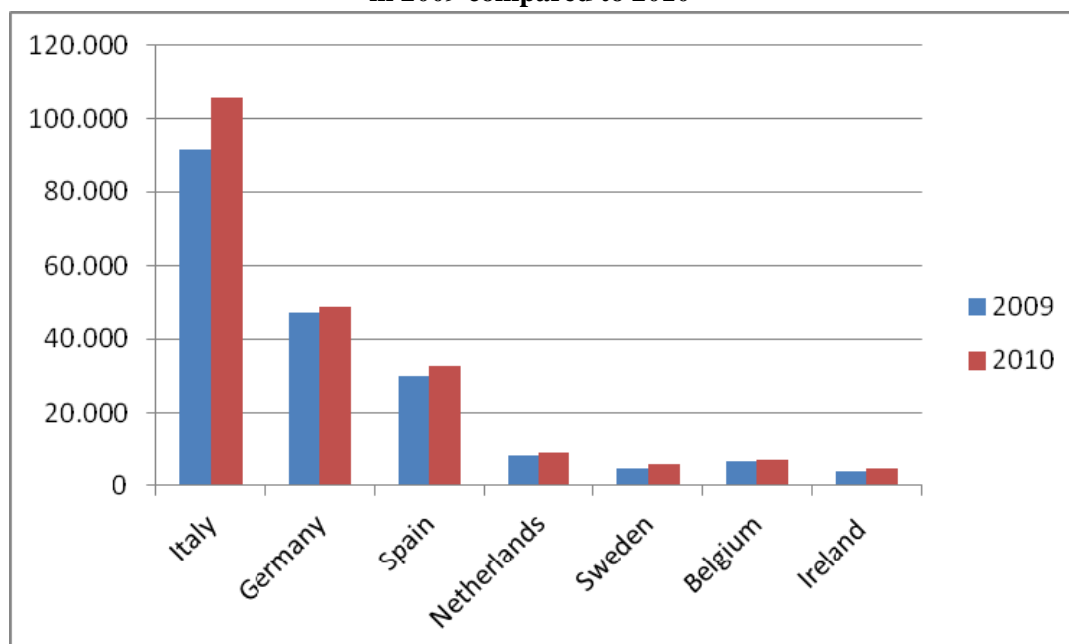
Table 5. Indian immigrant stock in the EU in 2008 and 2009

2008			2009		
Indian immigrants stock	Total immigrants EU27	% of Total immigrants EU27	Indian immigrants stock	Total immigrants EU27	% of Total immigrants EU27
477,383	30 800 000	1,5%	518,645	31 800 000	1,6%

Source: Eurostat Migration Data and OECD International Migration Database

The same trend stuck in 2010. According to Eurostat data, the stock of Indian migrants in the main European destinations continued to grow.

Figure 1. Evolution of Indian migrant stock in the main European destinations in 2009 compared to 2010



Source: Population Database-Eurostat, International migration

²⁴ United States Department of Homeland Security, Yearbook of Immigration Statistics 2008, 2009, 2010

As already mentioned, due to the ongoing European crisis Indian migrants inflows might decline and consequently the stock of Indian migrants in 2011.

In 2009, Indians were the biggest group of third-country nationals receiving authorisations to reside in the EU. In 2010 the Indian group was overtaken by US citizens who obtained 213,428 new resident permits (27% of them came for studies). These numbers show that not only Indians left the US for Europe, but also that US citizens chose EU countries or other destinations in a quest for better economic opportunities. Due to the high number of students, it is confirmed that lower scholar fees in Europe attract even American students. This does not necessarily mean that they stay for long-term professional positions, but it does point to a generalized mobility, not unilateral mobility towards the US as it used to be, but rather multipolar, Europe being an important magnet in redesigning the flows.

In 2010, the EU Member States issued about 2.5 million new residence permits to non-EU citizens, 8% to Indian migrants, a number that represents an increase of about 10,000 new permits compared with 2009.

Table 6. Evolution of new residence permits in the EU-27 granted to Indian migrants between 2009 and 2010

Total EU-27	Main countries of issuance							
	United Kingdom	% of total EU-27	Italy	% of total EU-27	Germany	% of total EU-27	Sweden	% of total EU-27
191,418 2009	120,940	63.2%	34,912	18.2%	5,934	3.1%	4,724	2.5%
201,398 2010	127,753	63%	37,985	18.9%	5,962	3%	4,547	2.3%

Source: Eurostat, Population Database - Residence permits (migr_res)

As indicated above, the number of Indians who acquired the nationality of an EU country doubled between 2008 and 2009. By contrast, in the United States the number of Indians acquiring the nationality of the host country decreased by around 20% in 2009 in comparison with 2008, the numbers falling from 65,971 to 52,889 (OCDE, International Migration Database)

Coinciding with the general economic recession in the US, highly-skilled Indians who want to go abroad chose other destinations and those in the US, in some cases, decided to leave their destination country by returning to India or going to Europe or other destinations which are more attractive than the US in terms of career opportunities and permanent residency.

The same trend can be confirmed by the international mobility of Indian students. Even if in absolute terms the US hosts the largest number of Indian students abroad, its share dropped after the global economic downturn. According to existing data, in 2010 the number of Indian students in the EU increased against the number of Indian students going to the United States. The data on visas for entry into colleges in 2010 show that the US delivered 32,000 student visas, which represent a little more than half the number issued by the UK (57,500). In 2009, the number of new student admissions stood at 34,000 and 27,000 for the US and the UK, respectively²⁵. In 2009 the new enrollment of S&E students from India at US institutions declined by 17% from 18,280 to 15,130 students²⁶.

²⁵ The Times of India, *No. of Indian students going to US falls, rises for UK*

²⁶ Department of Homeland Security, U.S. Immigration and Customs Enforcement, Student and Exchange Visitor Information System database, special tabulations: 2010

The tightened visa procedures for students, the slight possibilities of getting permanent residency after graduation, high tuition fees and the difficulty in finding a job in the context of the high level of unemployment in the US motivates Indian students willing to pursue a higher degree abroad to choose other destinations. As English is a universal language, universities in many non-English speaking European countries offer them programs in English, notably in the field of science and engineering. Another important aspect which encourages Indian students to choose the European countries is the possibility of integration into the local labour market leading to permanent residency.

V. Converting Indian brain drain into brain gain

There is increasing awareness that migration can benefit both the ‘sending’ and the ‘receiving’ country. In the long run brain drain may be converted into brain gain: something particularly relevant to India. Until recently, the role of the overseas Indian community in the development of the homeland concerned only financial resources. Estimated at 30 million and with a presence in 189 countries, the Indian Diaspora produces an annual economic income of about \$400 billion, almost 30 percent of India’s GDP²⁷. Desai, Kapur and McHale (2001) found that the 1 million Indians in the United States who represent only 0.1 percent of India’s population earn the equivalent of about 10% of India’s national income. The estimated volume of remittances in 2010 was \$55 billion or 3.9% as a share of GDP. Despite the economic crisis since 2008, the volume of remittances has remained resilient due to the geographical diversification of Indian migrants. After a 1% fall off in 2009 compared to 2008 (\$49.9 billion), in 2010 the total amount climbed to \$55 billion. Comparing to other regions which were suffering from a decrease in remittance inflows, India continued to receive an increasing volume of remittances²⁸: Mexico, for example saw a reduction of 16% in 2009 (\$22 billion) and in 2010 with a lower level of remittances than before the crisis.

Naturally, these financial resources contributed to development processes in India. But in addition to direct financial advantage, Indian expatriates abroad, especially highly-qualified expatriates bring other benefits such as image improvement for the country, knowledge transfers, access to new markets, business networks.

Transition to a knowledge economy

The contribution of US-based Indian IT specialists to the growth of the software industry in India is an illustration of a win-win scenario, in which the international mobility of Indian skilled professionals has helped India’s transition to a knowledge economy and has led to the development and has increased the innovation capacity of the host country. Currently, about 14% of India’s net domestic product is composed of knowledge intensive activities, mostly in the services sector²⁹.

The IT-BPO industry in India has today become a growth engine for the economy, contributing substantially to GDP growth, urban employment and exports. The success and achievements of Indian expatriates helped the origin country to create an image of a young and open India.

The Indian IT-BPO industry is estimated to have had revenues of \$71.7 billion in 2009, with the IT software and services industry accounting for \$60 billion of these revenues. During this period, direct employment is expected to reach nearly 2.23 million, an addition of 226,000 employees, while indirect job creation should touch 8 million. As a proportion of national GDP, sector revenues have increased from 1.2% in 1998 to an estimated 5.8% in 2009. Export revenues are estimated at \$47.3 billion in

²⁷ Annual Report of the Ministry of Overseas Indian Affairs, Government of India, 2009-10

²⁸ World Bank, Migration and Remittances Factbook 2011

²⁹ UNESCO 2010, *UNESCO Science Report 2010, The current Status of Science around the World*

2009, representing 66% of the total IT-BPO industry revenues. Software and services exports are expected to constitute more than 99 percent of total exports, employing over 1.76 million employees³⁰.

Despite the fact that the US, with a 60% share, is the largest export market for Indian IT-BPO³¹ services, the European market is gaining ground in India's software and IT services exports. This trend shows that the recent settlement of Indians in Europe has led to an increase in Indian exports. Europe has discovered, like the US before it, the quality of India IT products and services.

Table 7. Exports market distribution for Indian IT-BPO

Market	2005	2006	2007	2008
Americas	68.30%	67.18%	61.40%	60%
Europe (incl. UK)	23.10%	25.13%	30.10%	31%
Rest of the world (incl. APAC)	8.6%	7.69%	8.50%	9%

Source: Indian IT-BPO Industry 2009: NASSCOM Analysis

Indian IT specialists settled abroad are bringing benefits for both home and for host country. India accelerated its transition to a knowledge economy taking advantage of the updated skills of its highly-skilled workers abroad and the entrepreneurial networks that they established there (Warrier 2006, Leclerc and Meyer 2007). From the receiving country's perspective, Indian professionals mitigate labour shortage problems in knowledge-intensive sectors and play a crucial role in the reinforcement of the innovation capacity of the host country.

Growing bilateral investment flows between the country of origin and destination countries

The success of Indians abroad and the economic evolution of India has boosted the confidence of overseas investors. In 2008, India received a high amount (US\$ 41.5 billion), partly due to the size and growth of its economy, but to a large extent because of the relatively higher number of science and engineering personnel that India possessed compared to other countries.

Thanks to Indian prowess in ICTs³² achieved due to its diaspora, a growing number of well-known companies like Microsoft, IBM, Hughes Software, Intel, Oracle, GE, CISCO established R&D centres in India. The number of centres related to ICTs grew from fewer than 100 in 2003 to about 750 by the end of 2009 (UNESCO Science Report 2010).

Overseas Indian professionals played a crucial role in the development of IT industry at home helping India to become the world's leading exporter of IT services.

Today, investment flows are not only a one-way movement directed toward India but a two-way. Business networks established by Indian migrants in their countries of destination facilitate capital circulation between India and its foreign partners. The biggest companies from India, in pursuit of technology, start also to invest abroad.

Foreign direct investment outflows from India increased from just \$2 million in 1993 to about US\$ 19 billion in 2009. There are many examples of Indian companies which have invested abroad: so Tata Steel took control of the major British industrial corporation Corus; Bharat Forge has taken over

³⁰ NASSCOM 2009, Indian IT-BPO Industry 2009: NASSCOM Analysis, March 2009

³¹ Information Technology-Business Process Outsourcing

³² Information and Communication Technologies

forging companies in Germany, the UK and the US; and Suzlon has taken over wind turbine companies in Germany (UNESCO Science Report 2010).

The diversification of business partners due to the presence of Indian migrants in Europe has also led to increased trade between India and the EU.

International trade effects

Indians abroad represent an important market for products from India. Their contribution to the expansion of trade relations can be made through direct or through indirect effects.

Direct effects come from expatriates' demands for Indian products. Besides their own consumption, they may induce new consumption habits in the host country. An example is the influence of Indian and sub-continental migrants on UK nutritional patterns. The Indian community in the UK has changed general consumption and cuisine patterns. Indian migrants have demonstrably affect and contribute to the promotion of local goods such as basmati rice, Indian films, etc. The growing consumption of Basmati rice in the UK due to diaspora influence is a key driver of growth of Basmati rice exports. In 2010, the imports into the EU from India were estimated at €3.2 billion and agricultural products represented 8%³³. On the one hand, Indians abroad create a new demand for Indian products and on the other hand, the native population is encouraged to consume as well.

During the last few years Indo-EU trade relations have been strengthened. The EU is India's largest trading partner and its main source of foreign direct investment. Available data shows a dramatic increase in EU-Indian trade. The EU represents 21% of India's total exports and 16% of India's total imports. India accounts for a small but rapidly growing share of EU trade: 2.4% of the EU's total exports and 1.9% of the EU's total imports. In 2008, India became the tenth largest trading partner of the EU evolving from fifteenth in 2002³⁴. The presence of Indian professionals in Europe is an important element to be taken into account, then, in exploring the potential for more EU-India collaboration in terms of trade and investment.

The indirect role of overseas Indians in trade expansion is expressed through the importance of networks as a source of information and business contacts. Due to their knowledge of the business environment in the host country and the home country, Indian professionals can provide updated information about local rules and regulations, not to mention inputs for market penetration strategies.

Indian doctors settled in the UK permitted India to make a name in the health care sector just as their compatriots settled in the US contributed to India's role in the leadership of the global IT industry. This positive image from the UK led to the development of medical tourism in India. According to the Indian Ministry of Tourism, this market was estimated at \$330 million in 2004 and it generated approximately \$2 billion in 2010. Between 2002 and 2009, the number of medical tourists increased from 150,000 in 2002 to 500,000 in 2009. Apart from healthcare services, this category of tourists generated other revenues for India by visiting famous sites in India and by buying traditional products.

³³ <http://ec.europa.eu/trade/creating-opportunities/bilateral-relations/countries/india/>

³⁴ Delegation of the European Union to India, *Trade*, available on http://eeas.europa.eu/delegations/india/eu_india/trade_relation/index_en.htm

Conclusion

This paper underlined how Indian expatriates offer opportunities for mutually beneficial growth in both origin and destination countries. These professionals contribute not only to the development of the country where they live and work but also to the economy of the country of origin. Indian human capital abroad can be leveraged by India to take advantage of its resources but also by destination countries for the fulfillment of skill shortages. With a large number of young and educated people, India plays a major role in international migration. In the context of the intensification of a global knowledge economy, the demographic trends and the changes induced by the crisis, the EU could take advantage of Indian migrants turning towards European destinations. The win-win scenario for India and the EU is explained, on the one hand, by development perspectives thus opened for India (as acknowledged by MOIA report) and, on the other hand, by employment perspective for the EU member States (shrinking supply recognized by numerous official statements). The Bangalore cluster is a relevant example of win-win scenario. It played a crucial role in the development of the Indian IT industry, as well as of IT companies from Silicon Valley. The destination country took advantage of the knowledge of Indian specialists while the origin countries benefited from foreign direct investment and, from the Diaspora networks which facilitated the emergence of India as preferred outsourcing destination. In order to continue to take advantage of the international mobility of highly-skilled Indians, India and Europe have to cooperate in the formulation of joint measures taking into account the interests of all stakeholders: country of origin, country of destination and the migrants themselves. Europe has to promote integration policies for Indian migrants ensuring long-term economic benefits rather than temporary programs which offer only short-term solutions to labour shortage problems. The redirection of mobility flows between evolutionary poles of migration emphasizes the changing geopolitics at work: asymmetric traditional relationships have diminished and the circulation paradigm redistributes current moves, opening new options and perspectives. However, due to its complexity, this evolution will be unpredictable, even between major global players such as India and the EU. Constant observation of mobility has become crucial³⁵.

³⁵ See MICAL, the observatory of Latin American mobility and diasporas, www.observatoriodiasporas.com

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