

The International Mobility of Talent and Economic Development:

An Overview of Selected Issues

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Introduction

Human talent is a key economic resource and a source of creative power in science, technology, business, arts and culture and other activities. Talent has a large economic value and its mobility has increased with globalization, the spread of new information technologies and lower transportation costs. Well educated and/or talented people are often more internationally mobile than unskilled workers and face more favourable immigration policies in receiving countries, typically high per capita income economies short of information technology experts, scientists, medical doctors and other type of talent.

Individuals from developing countries are increasingly meeting the global demand for talent. This is the case of medical doctors from, say, Sub-Saharan African countries or the Philippines, information technology experts from India, Taiwan, and China, mathematicians from the former Soviet Union, indigenous singers from Africa, professionals and writers from Latin America and others.

The economic value of talent stems from its various uses. Talent can be a productive resource for current production (e.g., information technology experts), or a source of wealth creation (entrepreneurs), a source of knowledge (scientists), provide a social service (nurses, physicians) or cultural work (artists). The sociology of talent is

interesting; talents constitute an international elite in economic, financial, or cultural areas. These international elites can work in trans-national corporations, in the bureaucracy of international organizations, in international banks, universities or government. Talented individuals usually have considerable influence at national and international levels as they are often well-connected, shape ideas, values and beliefs. In turn, many of them are decision-makers.

As discussed in chapter 1, the international mobility of talent can have important development effects on the source and destination nations, affecting the human capital base of these countries and their development potential. Most of this talent is concentrated in a few OECD destination countries. (Dumont and Lemaitre 2005, Abella 2006).

The purpose of this chapter is to review selected analytical and policy issues related to the literature on international mobility of talent and its development impact complementing the discussion of chapter 1.

2 Types of talent

The classification of types of talent offered in chapter 1 of talent devoted to productive academic and socio-cultural activities can be further disaggregated into:

- (i) Technical talent
- (ii) Scientists and academics
- (iii) Professionals in the health sector: medical doctors and nurses
- (iv) Entrepreneurs and managers
- (v) Professionals in international organizations
- (vi) Cultural talent.

2.1 Technical talent (TT)

By ‘technical talent’ we mean people who are experts in information technology (IT), telecommunications and computer science. These people often hold a university or advanced technical institute degree in mathematics, engineering, and computer science. They can be developers of new software and hardware in the information industry or be engaged in applications in industry, services, the banking sector, government, etc. These people are sometimes referred as ‘knowledge workers’ or owners of ‘intellectual capital’ (see D’Costa 2004; Drucker 2000; Kuhn and McAusland 2006). They often face a favourable visa system in developed countries.² A main exporter of technical talent in the world economy is India, the country that accounts for the largest number of scientific and engineering degrees in the US and 30,000 S&E doctorates in 1999 (see D’Costa, 2004).³ Russia is another main source of scientists and engineers that go to OECD countries, Israel and other destinations (Abella, 2006). The mobility of technical talent depends on the way IT services are delivered. For example in the United States, IT services are delivered in two main forms: on-site services (which require the physical presence of the expert) and off-shore development (which may be delivered from the home country of the IT firm although some travelling of the expert may be involved as well. See for example McKinsey Global Institute, 2005). The diaspora of technical talent is often referred to as a ‘brain bank’ whose ‘(human) capital’ is formed by the stock of talent abroad. Countries with a large pool of technical talent abroad are India, China, Russia, Ukraine, Belarus, Hungary, Poland, and others.

2.2 Scientists, academics and international students.

Scientists and academics compose another brand of talent. They may belong to physical and life sciences such as physics, math, chemistry, biology or social sciences such as anthropology, sociology, political science and economics. These people are internationally mobile when they have good qualifications, a publications record, international contacts, and so on. Scientists leave their home countries attracted by higher salaries abroad, by the possibility of increasing their knowledge base and to transmit their own, to interact with peers of international recognition, and pursue a successful career. This set of factors can be considered as 'pulling factors'. On the other hand, we identified in chapter 1 'pushing factors' that induce scientists and academics to emigrate: they are low salaries at home, limited professional recognition, poor career prospects, and the absence of a critical mass of peers in their home country. A vehicle through which future academics and scientists come to foreign countries is as graduate students to get a Masters degree a PhD, or pursue a post-doctoral fellowship. The number of international students is large: according to Freeman, (2006) in 2004 there were approximately two million students with the United States being the largest single destination, having 573,000 overseas students, one fourth from China and India. Some of those students abroad return back home after graduating abroad while others remain in the host country to work in universities, research centres, and industry. Empirical evidence on foreign students studying and working after graduation in the United States, provided by the US National Science Foundation (NSF, 1998) and Regets (2001), seems to show a pattern that combines elements of 'brain circulation' and 'brain drain'.⁴ In a recent study Freeman (2005) shows that changes in global job markets for science and engineering (S

& E) have started to erode the traditional dominance of the United States in high tech sectors, the trend is now of comparative advantages that are started to shift to large-size, low-income developing countries such as China and India. Regarding the impact of foreign graduates in native labour markets for scientists and engineers Borjas (2006) detects that the influx of foreign students in doctoral fields have depressed the earnings of natives in these areas. He estimates that a 10 percent immigration–induced increase in the supply of doctorates lowers the wages of competitive workers by about 3 to 4 percent.. This is due to both an increase in the supply of doctoral graduates as well as the fact that many times foreign PhDs accept low-pay post-doctoral jobs appointments in the host country. These labor market effects on native scientists and scholars are important in shaping attitude and policies on the immigration of talent in developed countries.

2.3 Professionals in the health sector: medical doctors and nurses

A specific form of talent outflow that is worrisome for developing countries—particularly for the poor ones—is the international mobility of professionals in the health sector, mainly medical doctors and nurses (Abella, 2006). Main importing countries of medical doctors and nurses are the United Kingdom, the United States, Australia, Canada, and other industrial nations. Important suppliers of health professionals from developing countries are the Philippines, India, several African and Latin American countries. In 2002–03 the three main source-countries of overseas-trained nurses in the UK were the Philippines, India and South Africa (see Bach, this volume). The demand for foreign professionals of the health sector seems to be associated with a supply shortage of native health sector professionals. As the incidence of various diseases such as malaria and HIV-AIDS is much higher in developing countries, particularly in Sub-

Saharan Africa countries, the paradox—from a social point of view—is that much needed medical personnel leave their home countries where they are in high (social) demand (the ability to pay for their services is another matter) looking for better salaries and enhanced possibilities of career development abroad. The flow of talent is not always from developing countries to industrial nations (or south-north). Some developing countries with a high supply of medical personnel (i.e. Cuba and China) tend to send medical doctors to other developing countries (south-south flows) suffering from health crises, natural disasters, and to help to set-up national health systems in which these professionals can make a valuable contribution. It is estimated that close to 20,000 Cuban doctors are servicing in other developing countries following government policies of and internationalist bent. There is also a considerable movement of medical doctors and nurses within industrialized countries. For example, between 1990 and 2000, of the almost 7,000 Canadian physicians that left the country, mainly going to the United States, less than 3,000 returned home (Bach 2003).

Foreign health professionals are often subject to licensing requirements. These are often lengthy, complex and costly processes that, in practice, constitute an effective barrier to entry to the local labour market of foreign health professionals. At the same time, due to scarcity of health professionals in the industrial countries such as the US and the UK they have easier access to working visas than other professionals.

2.4 Entrepreneurs and managers

An important feature of migration, relatively neglected in the discussion of talent mobility, is the international mobility of entrepreneurship. Entrepreneurs, in the Schumpeterian tradition, are agents of resource mobilization, investment, and

innovation.⁵ From an international perspective, entrepreneurs can transfer innovative and wealth creation capacities from one country to another. This is a scarce trait in developing (and probably in developed countries also), so their permanent departure is likely to have a retarding effect on national development. However, if economic and business conditions are propitious and entrepreneurs do return home bringing along fresh capital, technologies and contacts acquired and developed abroad with an ensuing positive developmental effect for the home nation. Thus, we can make a distinction between ‘entrepreneurial drain’ (entrepreneurs that don’t return) and ‘entrepreneurial circulation’ (entrepreneurs that do return home or keep investing in the source and destination country).

Historically, world-wide successful entrepreneurs and bankers in the late nineteenth and early twentieth century in the United States and Europe such as Mellon, Vanderbilt, Carnegie, Rockefeller, the famous banking dynasty of the Rothschild with operations in London, Zurich and other financial centres, were foreign-born or first descents of immigrants.^{6,7} In this volume Annalee Saxenian, analyzes new patterns of mobility of “technological entrepreneurs, that move between Silicon Valley in the US and India, Taiwan, Israel and other countries.

There is considerable variation in the scale of the business activity created by the entrepreneurship of foreign migrants.⁸ Not all entrepreneur immigrants operate at the economic scale of the Rockefellers, Rothschild, or Soros. There is, indeed, a plethora of them operating at the level of family business and small firms. A typical example are the ethnic restaurants (e.g. Chinese, Indian, Brazilian, French, Italian, etc.) in the large cities of developed countries. Moreover in the carpet and furniture business in these cities there

is a predominance of Turkish, Indian, Pakistani, and Moroccan owners. These patterns of immigrant entrepreneurship do not mobilize large amounts of financial resources but they can be quite labour intensive and their businesses add to the variety of services in host countries. The sociological profile of these endeavours is interesting: businesses are usually owned and run by members of a specific ethnic group and the employees (many times family members) tend to be also of the same ethnicity.⁹ The connections between ethnicity, entrepreneurship and migration and their patterns of integration/exclusion with the local economy and society are themes that deserve further inquiry. For example some ethnic-migrants form entrepreneurial groups among them and may have more difficulty in integrating into local society than immigrants that develop entrepreneurial activities across a more diverse ethnic spectrum.

The relationship between endowments of human capital and entrepreneurship is also an interesting subject. Entrepreneurs are not necessarily people with a high stock of formal education; in addition, the 'psychology of the entrepreneur' is certainly different from that of the scientist, the expert or the intellectual who we usually identify with 'human capital'. Typically the entrepreneur is prone to risk-taking, has a talent for combining capital, labour and for entertaining a vision of opportunities and the prospects for profits (see Schumpeter 1911 [1934]). In contrast, professionals, scientists, and engineers are often employees rather than owners and are supposed to be more risk averse than self-employed entrepreneurs.

Historically, a main recipient of migrants with entrepreneurial skills in the late nineteenth century and early twentieth century was Argentina, a country that experienced rapid rates of output growth and net immigration, mainly from Spain and Italy (see

Solimano 2004b). In turn, immigration allowed the mobilization of the large natural resources of the receiving countries and that was a key engine in their growth process. The other part of the mutual causation process is that immigration is an important factor in *sustaining and reinforcing* the dynamics of growth and prosperity. In fact, the immigration of people with entrepreneurial capacities and a favourable attitude towards risk-taking contributed to business creation, resource mobilization, colonization and innovation—all factors that supported rapid economic growth—in the countries of the New World in the first era of globalization (pre-1914, see Solimano and Watts, 2005).

More recently, in the late XX and early XXI centuries, entrepreneurial immigrants from India, Taiwan, and China have provided an important human resource in the creation of high technology industries both in hardware and software in Silicon Valley in the United States. They have engaged in business creation and output growth in the tech sector contributing to economy-wide growth (see Florida 2005).¹⁰

Managers

The international labour markets for talent can be grouped in, at least, two ‘circuits’ (or sectors) that demand qualified human resources in the global economy: the *international private sector* and the *international public sector*. In the international private sector, multinational corporations and international banks often transfer some of their key management abroad when open branches and set-up operations abroad. The Chief Executive Officer (CEO) may be brought from headquarters. Alternatively, he or she can be a national hired locally. Some corporations or international banks transfer their general counsellor, the financial manager and sometimes their human resource managers from

headquarters. Certain corporate policies may be specific and companies may want to preserve their corporate culture in these matters. This is a clear point of further research. Trans-national corporations and banks are another vehicle for the international transfer of talent within the international private sector.¹¹ International investments often require that managers move internationally to establish contacts in foreign markets, make business deals and set-up operations abroad. In addition, international investment projects may usually involve the movement, across countries, of engineers and skilled workers in the phase of project design, project implementation and actual operations. Some of these people may move only temporarily (for a few months) while others move on a more permanent basis (for several years).

2.5 Mobility in international organizations

Multilateral and regional development banks, various international organizations and development agencies at global and regional levels comprise what we may call “the international public sector”. International organizations are intended to promote international development through technical assistance, lending (in the case of development banks) and knowledge generation and dissemination. These institutions require qualified professionals to conduct their activities. Their staff is often composed by economists, engineers, social scientists, health experts, environmental specialists and people with other expertise. Many of them come from developing countries. They often hold advanced degrees (Masters or PhDs) earned in first-rate universities in the US, Canada, and Europe and work for international organizations whose headquarters are located in Washington, Paris, London, Geneva, and other major cities. International organizations are an attractive pole of attraction for professionals: they offer

internationally competitive salaries and benefits; stable careers and their staff can get a first hand involvement with development problems from a privileged position. From the viewpoint of the direction of talent mobility, the international public sector (some located in the capitals of developed countries) encourages a flow of human capital to the developed countries. This may entail migration of professionals south-north or north-north in the case of regional institutions the flow of talent, is south-south.

2.6 Cultural talent

Our discussion of the mobility of talent has referred mainly to talent linked to the production side of the economy or the social sector (i.e. health professionals). However, talent moves also in response to the demand for cultural activities, entertainment, and aesthetic enjoyment. Here we refer to a variety of ‘cultural workers’, such as musicians, singers, writers, painters, designers, and the like. Their motivation for migration and international circulation is probably similar to other types of talent. The expectation of better economic possibilities abroad than at home (i.e. higher earnings), access to a larger market, interaction with other producers of culture, and the lure of becoming better known internationally. Creative processes are rarely done in isolation and the interaction with other artists can enhance the quality of cultural work. At the same time, signalling and reputation are important elements behind the success of artists and their earnings profile. An opera singer of worldwide reputation may have better access to mass media in international circuits than an unknown singer of pop music operating at a local level. Well-known writers who operate at an international scale find easier the access to publishing. In turn, famous painters may have agents that commercialize their paintings.

The cultural market, as we shall see in the next section, has features of ‘winner-takes-all’ markets such as sport and music.

3 Topics in the international mobility of talent

In this section we shall examine some topics such as the rewards structure, the relation between education and talent, the links between political regimes and out flows of talent and the relation of talent and wages and incomes inequality.

The rewards to talent

The market rewards to talent is a key determinant of the allocation of talent both at national within countries and international levels (among countries). If the earnings of lawyers are higher than the earnings of teachers we can expect that more talented people will study law than education as talent allocation at *national* level depends on the rewards of alternative occupations. In turn, the *international* mobility of talent depends on the expected income differential that can be earned abroad with respect to earnings at home in a given activity.¹² For example if the earnings of engineers in country x, adjusted by the cost of living and the cost of moving, are higher than the earnings of engineers in country y, we can expect that engineers will migrate from country y to country x. As mentioned in chapter 1 the earnings may be a salary for professionals, technical experts, and medical personnel or profits for entrepreneurs, or honoraria, royalties, and international prizes for artists, writers, and painters.

International income differentials across countries may be substantial: it is reported that a Filipino nurses can earn between US\$ 75–200 per month in the Philippines compared to US\$ 3,000–4,000 in the United States (Bach 2003). In turn, the average

annual net income of a US physician is reported to be substantially greater than the annual income earned by Canadian physicians (see Bach 2003) due mainly to differences in tax rates between the two countries. These large net income differentials certainly prompt emigration to the higher pay/lower tax country (see Lucas, 2005).

Failures of markets, both at *national* and *international* levels, to properly reward talent can lead to resource misallocation. Among the reasons why market rewards can diverge from social values is the difficulty in identifying the output of talent; as a consequence, the rents associated with special abilities cannot be privately internalized. The result will be that too few talented individuals will devote to certain activities that have a high social value.

The return of talent can be particularly difficult to assess in the fields of entrepreneurship and creative activity. The difficulties to reward entrepreneurial talent may be related to weak property rights, weak patent system for innovations, stiff taxation and corruption (see Acemoglu and Verdier 1998). Studying the effects of talent allocation on economic growth Murphy et al. (1991) show that in economies in which rent seeking is highly profitable (due to distortions, import protection, corruption and lobbies capturing key state-agencies) the return to wealth creation, innovation and entrepreneurship will be low compared to the return of devoting time and efforts to rent seeking. The result may be economic stagnation and poverty as the return to talent is distorted against talent engaged in productive endeavours that create wealth and help countries to prosper. In turn, international differences in the relative returns between rent-seeking versus wealth-creation/entrepreneurial-oriented activities can be a cause for the

emigration of entrepreneurs from high-rent seeking countries to lower-rent seeking countries where entrepreneurial talent is more valued.¹³

Some time ago Murphy et al. (1991) tried, empirically, to assess patterns of talent allocation. They used the share of college enrolment in engineering in total college enrolment as proxy of talent allocated to productive activities and the share of enrolment in law as a share of total college enrolment a variable denoting talent allocated to unproductive, rent-seeking activities (admittedly this is a crude approximation as lawyers are also needed to draw contracts oriented to create business). This variable was then used as an additional explanatory variable in growth equations *à la* Barro in a panel including 91 countries (or 55 countries with more than 10,000 college students) in the period 1970-85. In the sample of all countries the authors find a positive and statistically significant effect of the share of college graduates in engineering in an initial year, and a negative but statistically insignificant effect on growth rates of the proportion of college graduates in law. As the author's state: 'the signs of the coefficients are consistent with the theory that rent seeking reduces growth while entrepreneurship and innovation raises it.'

Rewarding talent engaged in starting new activities and developing new products or techniques—the distinctive role of the entrepreneur according to Schumpeter—, in which the demand is difficult to anticipate, presents several problems. History matters in the formation of expectations and therefore with new activities and products history literally does not exist. Thereby, talent needs to be compensated for this fundamental uncertainty. Both Frank Knight and Joseph Schumpeter underscored this point in their writings on the return on capital and entrepreneurship. For Schumpeter the entrepreneur is somebody

who breaks the 'status quo' and innovates and development is the shift between qualitatively different 'circular flows' associated with a stream of new innovations led by the entrepreneur. This is different from the repetition of capital accumulation and growth under the same set of organizations and techniques (stationary equilibrium).¹⁴

This uncertainty on the value of talent is not only valid for the entrepreneur (a self-employed individual) but also for hired new talent (employees). In the case of employees there is also uncertainty on the market valuation of new products produced by hired talent. However, this is not the only source of uncertainty for the firm: it also has to ascertain the actual productivity, work effort and social integration at firm level of talented new employees. Here the contracts structure (including monitoring capabilities) matters a good deal, as underscored by the new contract theory (see Bolton and Dewatripont 2005).

Valuing talent is also difficult in the 'creative industries', (see Caves 2000) of painters, writers, singers, classic musicians, film-makers, designers and others. In the creative industry there is often uncertainty related to the ways markets will value new paintings, new books, new films and other products of creative people. This certainly has an impact on the behaviour of publishing houses, record companies, film studios, opera houses, etc. A variety of contract structures have been developed in the creative industries to deal with these uncertainties that attempt to share these risks between agents and principals (see Caves 2000).

Another feature of the economics of talent is the existence of *increasing returns to ability* in which small differences in individual abilities can generate large differences in pay and reward. This is the essence of the theory of 'winner-takes-all markets' applied to

arts, sports and other activities that involve talent. In fact, the number one tennis player in the world makes an income several times larger than the second or third player who can be nearly as talented as the number one who receives the main prize (and the most lucrative advertisement contracts). In this context, the possibility of making super-normal rents attracts talent to these activities. Authors such as Frank and Cook (1995) have argued that the lure of such rents attracts an *excessive* allocation of talent to these activities compared to what is socially optimal if true probabilities of making the big prize were known ex ante. In contrast, activities with diminishing returns may not attract the brightest people, as effort tends to be only weakly compensated at the margin. This is often the case of teachers, public employees, and medical doctors in public health systems. Also teamwork and joint production in which individual contributions are hard to detect tend to discourage really outstanding talent. Bureaucratic organization with flat remuneration structures may fail to attract talent. However, at international level the salary differentials between international organizations and national agencies may be very large, inducing the migration of talent to international organizations, particularly those run more on merit than on other considerations.

Education and talent allocation

The literature of talent allocation stresses the importance of education in nurturing and developing talent. However, there is not consensus on the mechanism through which education affects the allocation and mobility of talent. The standard assumption is that investment in human capital and talent is positively correlated: talented individuals choose more reputable and better-paid careers. In other words, the highest return of

investment in human capital goes to the most talented individuals. In addition, if education has a signalling effect (Spence 1974) talented individuals choose to be educated, preferably in good universities, to signal that they have high ability. The critical notion in the 'education as signalling' approach is that *information to the market* is the key consideration in the choice of education by talented people. Authors such as Grossman (1999), Benabou and Tirole (2000), and Hvide (2001) have contested this assumption by considering that education plays also an important role in *providing information to the individuals who are educated about their own abilities*. Thus education helps individuals to gather private information about their capacities and potential performance in labour markets after completing their careers. In these papers employment contracts are endogenous and affect the allocation of talent. Interestingly, Hvide (2001) arrives to the following result: in the context of education as a learning process in which information capital is accumulated, the most able individuals, who have a high level of self-confidence, will skip (higher) education and go directly to the market often as entrepreneurs. As they have a high degree of self-confidence they avoid the potentially large opportunity cost of spending several years pursuing a career. They prefer to accumulate wealth (undertaking profitable projects) from the start. In contrast, those individuals with intermediate self-confidence educate before choosing a sector and a contract type. Summing-up, the most able skip education because those in the middle can imitate them too cheaply; however, those in the middle educate to distinguish themselves from the least able people. These principles can, in principle, be applied also to the decision of education versus work in the broader context of global labour markets and also to the relation between education and taxation (Bergman, 2003).

Democracy, Authoritarianism and Outflows of Human Capital

The outflow of human capital is not only led by economic considerations of market rewards. The political regime — democracy or authoritarianism and different gradations of these regimes-- also matter in the decision to emigrate as they affect the quality of life and the freedom to employ each people's talent in the way they choose. Thus the political regimes prevailing in host and source countries—democracy or authoritarianism—and also the quality of democracy matter in the decision to emigrate or leave a country. In general, it is reasonable to assume that individuals will prefer to live in countries where civic freedoms and individual rights (freedom of speech and association, access to fair trial, religious freedom, right to elect public authorities, etc.) are respected and economic rights (property rights, contract enforcement) are protected. This tends to occur more often in democracies than in dictatorships. The extent these rights are respected is lower in poorly working democracies than in more mature democracies.¹⁵ As well-educated individuals are more mobile than low-income people we can expect that non-democratic regimes and poorly working democracies are likely to prompt the emigration of educated individuals. This was indeed the case for the Latin American dictatorships of the 1960s and 1970s in Argentina, Brazil, Chile (between 1973 and 1989) and Uruguay that impelled the massive emigration of university professors and intellectuals who saw the universities intervened by the military, their research budgets cut and salaries frozen and their tenured positions affected by political considerations. As a consequence of hostile public policies towards universities and independent think tanks these countries suffered serious brain drain with consequences not easily reversible. In these cases, emigration (very often of individuals with a high stock of human capital) became an individual response to non-democratic political regimes that fail to respect civic rights.^{16,17} The restoration of democracy in Latin America in the 1980s and 1990s led to some return of scientists and intellectuals, although this flow would have been probably larger if the economic conditions in universities and research centers --salaries and resources available for research-- were

better¹. There seems to be no clear relationship between academic freedoms, democracy and the amount of resources devoted to universities and research activity. This can be illustrated by the recent experience of post-socialist countries such as Russia, Poland and others. In these countries, particularly Russia, the end of communism and the transition to markets and democracy in the 1990s has coincided with a net outflow of skilled professionals, scientists and information technology specialists². For example in Russia it is estimated that a significant number of people employed in "science and scientific services" have left Russia since the early 1990s. Germany and Israel account for 86% of the Russian emigrants in this category in 2000 (Gokhberg and Nekipelova 2002). The outflow of scientists in Russia is largely attributed due to a squeeze in the budget of the science and technology sector that cut salaries, research budgets and deteriorated working conditions in the science and technology sector. This, along with changes in legislation that recognized the right of national citizens to take employment abroad (a right restricted under communism), seems to be an important variable explaining the outflow of scientists and professionals from Russia since the early 1990s (Gokhberg and Nekipelova, 2002). In general, countries that live through periods of collapse of democracy, severe contraction of the economy, civil war, and violence often do not create a good environment for domestic science, arts and creativity to flourish. The result is an emigration of talent to more favourable environments.

Talent migration, wage convergence and inequality

The increased integration of goods and capital markets seem not to reach global labour markets even for qualified human resources. The issue of wage convergence for different categories of labour is investigated in Freeman (2006) using information of wages for a large world dataset covering the period 1998-2002. This author finds that

¹ See Pellegrino, A. and J. Martinez (2001); also Hansen et.al. (2002).

² For an interesting albeit dramatic account of how emigration of the most talented individuals of the German Democratic Republic used as a state policy during communism to get rid of active opposition and

measured in the same currency and using purchasing power exchange rates , the wages of the top 20 percent in the earnings distribution show differences in a factor of four or five to one among countries (using an international data set of salaries). This is purported to show that even labour markets for higher pay categories of labour (more closely related to our description of talented individuals) are not well integrated internationally as measured by the dispersion of salaries.

Overall migration affects global income distribution at three levels: a) in the sending country; b) in the receiving country, and; c) inequality between countries.

Economic historian Jeffrey Williamson, considering the process of *mass migration* of the first wave of globalization of c.1870–1913, asserts ‘Where immigration increased the receiving country’s labor supply, inequality rose sharply; where emigration reduced the sending country’s labor supply, inequality declined’ (Williamson 1997). Therefore, inequality should have *declined* in Europe (source region) and *increased* in the US, Canada, Argentina, Australia, and Brazil (recipient countries) in the first wave of mass migration of the late nineteenth century and early twentieth century. In fact, historical trends show that ‘When emigration trends were big, egalitarian trends were strong; when countries had to accommodate heavy immigration, in egalitarian trends were strong’ (Williamson 1997: 129). In principle global inequality, say inequality between countries, must be *reduced* with international migration as people move from relatively low wage countries to nations with higher wages, thereby reducing the real wage gaps between sending and receiving countries. This is, in turn, a key element in the whole discussion about *convergence*.¹⁸ An important effect of international migration in that period was to

discontent, debilitated so much the GDR contributing to its unexpectedly rapid demise after the end of the communist regime in 1990, see Hirschman (1995).

contribute to convergence of per capita national income levels and factor prices in the Atlantic Economy. However, this is a story of *mass migration* and we are considering here the migration of talent that is less important in quantitative terms in affecting overall factor prices as it was the case with mass migration process of the first wave of globalization of the late nineteenth century and early twentieth century. In the case of mobility of talent we can expect changes in the micro remunerations of different types of talent (technical experts, professionals, scientists, entrepreneurs, artists) depressing (relatively) their remunerations in the recipient countries and increasing them in the source country. As mentioned before international wage convergence for the higher-end of the wage distribution is far from complete.

5 Elements of a policy-research agenda on talent mobility

From the previous discussion we can identify the following elements of a policy and research agenda on talent mobility for global development:

- (i) Filling the *information gap*, particularly in developing countries, on the magnitude and characteristics of talent mobility. Many developing countries simply do not know how many of their scientists, technology experts, physicians, university professors, entrepreneurs, and artists are abroad. In developed countries the statistical base on the mobility of human resources is better. For example the OECD has developed a system of recording and of building a statistical and analytical base of the Human Resources devoted to Science and Technology (HSHR) in the OECD countries. Developing

countries should strengthen their statistical capabilities on the mobility of high skills and educated individuals.

- (ii) To put in the development agenda the topic of talent mobility, it is important to recognize that increased mobility of high skills individuals implies that developing countries are *exporting talent* and that part of their most qualified stock of *human wealth* is beyond their national borders. As with financial capital, human capital emigrates when the incentives structure at home is distorted and the value of talent is not properly recognized. Future research in the topic should identify sound policies to attract talent to the developing countries.
- (iii) To enable *talent circulation for global development* may require action in several fronts. As mentioned before, countries such as India and Taiwan have been successful in building a domestic high tech industry that is internationally competitive. A critical contribution to this has been made by expatriate entrepreneurs and technology experts that have been successful in the US, UK, and other developed economies. Boosting connections among entrepreneurs can increase the international circulation and mobility of capital, technology, and managerial capacities. To attract human and financial capital back home may require some favourable tax treatment in the initial stage. Land grants for setting up new companies and other subsidies of a temporary, performance-based nature can also be helpful. For scientists and researchers increased connections among universities and research centres at home and abroad are needed. This may involve cooperation in research projects,

organization of joint conferences, institutional agreements, fellowships programmes and other measures.

- (iv) In the cultural sector, international initiatives such as concerts, exhibitions, shows, and cultural exchanges can also promote cooperation and enhance the circulation of talent.
- (v) A more general point is the need for developing countries to reassess their rewards structure for talent. Poor remuneration, lack of recognition, the absence of professional tracks in public administration, obstacles for business creation and innovation are all factors that lead to talent outflows and brain drain from the developing world.
- (vi) National tax systems also affect the international mobility of talent as international net income differentials may reflect differences in personal or corporate income tax rates across countries.
- (vii) The relation between education and talent and its effects on the international mobility of professionals needs further study. From a practical point of view, mobility is affected by the (lack of) international compatibility and recognition of university degrees and professional titles earned in foreign universities. The integration of higher education would need some common framework that would enable comparing the diverse national education systems (incidentally this is the 'Bologna process' in the European Union).

6 Concluding remarks

In the 1960s and 1970s the discussion on talent mobility was dominated by concerns on brain drain. The dominant view at that time was that permanent emigration of talent from the developing countries had adverse consequences for national development, autonomous policy-making, and qualified human resources. In the early twenty first century, the international circulation of talent has increased significantly as we are living in a world of increased economic interdependence, rapid technical change, and lower transportation costs. The direction of talent circulation is multiple: south-north, south-south, north-north, and north-south. Individuals with special abilities move across countries in response to economic incentives and clusters of expertise, which concentrate in certain locations. That talent may eventually return home if the appropriate conditions for work and investment exist in their source countries. The causes of the outflow of talent reflect failures in rewarding talent in developing countries as well as superior paying structures and better work opportunities in advanced economies. Distortions of the reward structures against innovation and productive activities may produce a sub-allocation of talent in growth-oriented activities and/or in an outflow of talent to foreign countries that provide better opportunities for wealth creation. Rent seeking, patronage, and the politicizing of professional appointees in national and international public administration is another deterrent for talent interested in public policy our review also highlights the complex relation between formal education and talent and highlights that political regimes also matter in the size and direction of the mobility of highly qualified

human resources. An agenda of talent mobility that works hand in hand with global development is required to address these issues.

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² It is estimated that of the 331,206 HB1 visas approved in the US in 2001, 49 per cent went to Indians and 92 per cent to IT experts, see D'Costa (2004) and Kapur and McHale (2005).

³ It is estimated that half that number planned to stay in the US after graduation.

⁴ A NSF (1998) study shows that about 47 per cent of the foreign student on temporary visas, who earned doctorates in 1990 and 1991, were working in the United States in 1995. In turn, the majority of the foreign doctoral recipients in 1990-91 coming from India (79 per cent) and China (88 per cent) were still working in the US in 1995. In contrast, only 11 per cent of South Koreans who completed science and engineering doctorates from US universities in 1990-91 were working in the US in 1995. The NSF

study reports that foreign doctoral recipients in science and engineering that were working in the US after 10 or 20 years tended to remain in the country (no significant net return migration).

⁵ For an interesting discussion of the distinctive features of the entrepreneurs in theory and practice, see Baumol (1993). A classic article on the economic role of the entrepreneur is Schumpeter (1911 [1934]).

⁶ See Ferguson (1999). In this case, it is interesting to note that the Mellons, Rockefellers, and others, besides accumulating a large wealth, had an interest in creating centres of education and learning. In fact, they helped to establish universities and created private foundations devoted to education purposes. Carnegie in particular, was one of the pioneers in the formation of the system of public libraries in the United States at the turn of the twentieth century. Later on, names such as George Soros, an immigrant from Central Europe escaping Nazi persecution in the 1930s, turned abroad into a very successful financier. Soros is another case of a talented entrepreneur with a philanthropic gist manifested in creation of the Soros Foundation and the network of Open Society Institutes throughout the world.

⁷ Some studies have observed a connection between ethnic diasporas and entrepreneurship. Classic examples of this are the Jewish emigration to the United States. In fact, it is estimated that the contribution of the Jewish community in America to business creation and banking is far larger than their share in the total population of the US. In the context of developing countries, Chinese emigration has played an important role in building a business community (of Chinese origin) in several very dynamic economies of South-East Asia. In turn, immigration from Germany, Italy, Syria,

Palestine, Lebanon to Argentina, Chile, and Brazil at the turn of the twentieth century, played a very important role in building the textile sector, banking, agriculture, and mining sectors in these Latin American countries.

⁸ This section is based on Solimano (2004a).

⁹ See Ndoen et al. (2000) and Kloosterman and Rath (2001).

¹⁰ Various mechanisms can account for a positive effect of migration on economic growth in receiving countries (see Solimano 2001). The immigration of unskilled labour can help to increase and sustain growth in the host country by moderating the growth of wages therefore contributing to keeping profits high, raising the profitability of investment, and accelerating growth. These two mechanisms: i) the transfer of entrepreneurship and highly-skilled people, and ii) an increased labour supply of unskilled workers, operate essentially, through *investment and productivity growth* (see Solimano 1998). An additional macroeconomic mechanism from migration to growth operates through *savings*. International immigration may raise savings in the host country by keeping wages down and boosting profits. As profit-earners tend to have a larger propensity to save than wage earners, the net result is an increase in overall national savings. In a savings constrained economy this should be translated into more rapid economic growth.

¹¹ See Vodusek (2001) for the case of international investment from Europe into Latin America.

¹² Expected income differentials have to be adjusted by the costs of migration (pecuniary and non-pecuniary).

¹³ Acemoglu (1995) also makes the case that the valuation of entrepreneurship is affected

by social norms, and societies' recognition of wealth creating versus other activities. In some countries entrepreneurs have high social esteem, and in others low. This theme is also present in Max Weber's *Protestant Ethic and the Spirit of Capitalism* (1930 [2000]) in which countries that have a protestant ethic are supposed to be more prone to wealth-oriented systems due to a higher valuation of thrift, effort, and risk-taking activities, typical of the entrepreneurial spirit.

¹⁴ See Schumpeter (1911 [1934]). The super-normal profits associated with innovation have to compensate for this sort of risks.

¹⁵ See Olson (2000) for an insightful analysis of the economic consequences of democracies and autocracies. In turn, Albert Hirschman provides a view relevant for understanding the relation between politics and migration. In *Exit, Voice and Loyalty* he draws a distinction—useful to understand the economic and political causes of immigration decisions—between purely economic choices and collective action. While *exit* is often an economic decision, *voice* belongs to the realm of collective or political action. This framework suggests that individuals, who are unsatisfied or discontent with current political and economic conditions in their home countries and where 'voice' becomes an ineffective expedient to change things, may choose to exit their countries (i.e. to emigrate). Thus (voluntary) migration (different from the problem of refugees and asylum which are instances of forced migration) is a decision also affected by political conditions that are considered inadequate by nationals and foreign residents.

¹⁶ Emigration was generally restricted in former socialist countries. One of the justifications for restricting exit and emigration was that educational and other social investment made by the state on citizens would be lost by emigration. However, given the

lack of civil liberties and the poor economic performance of these regimes, particularly in their phase of maturity and then decline, it is likely that the outflows of people would have been sizeable under liberal emigration regimes with the ensuing political and economic costs for the regimes. However, emigration was used in controlled and selective fashion to get rid of political opponents and dissidents.

¹⁷ For an interesting, albeit dramatic, account of how emigration of the most talented individuals of the German Democratic Republic was used, as a state policy during communism, to get rid of active opposition and discontent, debilitated the GDR to the extent that it contributed to its unexpectedly rapid demise after the end of the communist regime in 1990, see Hirschman (1995).

¹⁸ It is estimated that around 70 per cent of the wage convergence in the 'Atlantic Economy' (Europe, US, Canada) between 1870 and 1900 is explained by the collapse of the wage gap between Europe and the New World following massive international migration from the former to the latter (see O'Rourke and Williamson 2000). The story of convergence is one of lower real wages in labour abundant nineteenth century Europe catching-up with higher wages in the labour-scarce New World. In addition, lower-wage countries such as Argentina and Canada were catching up with higher-wage countries such as the US and Australia. By the late twentieth century, the wage gap between Argentina and the then developed countries had widened as the US, Canada, and Europe turned into the highest per capita incomes in the world. With the onset of the First World War this process of convergence in wages across the Atlantic economy abruptly stopped.