

Brain Drain

Social and Political Effects in Latin American Countries

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Abstract:

Brain Drain is an integral part of globalization, and constitutes a significant challenge for least developed countries undergoing processes of modernization. Traditionally, Brain Drain has been seen as a zero sum game that makes the rich richer, and the poor, poorer. Globalization has led to an increased international demand for skilled labour. Brain Drain suggests an unequal distribution of advantages and disadvantages of global migration. However, this unequal distribution could effectively be reverted if immediate action is taken, challenges to host and source countries are identified, and policies are adopted to revert its negative effects

Key words: Brain Drain, host countries, source countries, highly-skilled migration, globalization, Latin America, migration.

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Fuga de cerebros. Efectos sociales y políticos en los países de América Latina

Resumen:

La fuga de talentos es una parte integral del proceso de globalización y se presenta con un reto para países en procesos de modernización. Tradicionalmente, la fuga de talentos ha sido vista como un juego de suma cero que hace al rico más rico y al pobre más pobre. La globalización ha traído consigo una mayor demanda de capital altamente calificado, y aunque la fuga de talentos efectivamente trae consigo un sinnúmero de desventajas, estas pueden ser revertidas si se toman acciones concretas en los países emisores.

Palabras clave: fuga de talentos, América Latina, globalización, migración calificada, migración.

Fuga de cérebros

Efeitos sociais e políticos nos países da América Latina

Resumo:

A fuga de talentos é uma parte integral do processo de globalização e se apresenta como um reto para os países em processo de modernização. Tradicionalmente, a fuga de talentos tem sido vista como um jogo de soma zero que faz mais rico ao rico e mais pobre ao pobre. A globalização tem trazido consigo uma maior demanda de capital altamente qualificado, e ainda que a fuga de talentos efetivamente traga consigo um sem-número de desvantagens, estas podem ser revertidas caso sejam executadas ações concretas nos países emissores.

Palavras-chave: fuga de talentos, América Latina, globalização, migração qualificada, migração.

Introduction

As a result of the end of the Cold War the world underwent a major restructuring process that has led to important social, economic, cultural and political changes within countries. The process of globalization has accelerated redefining space, inter-state relations, and access to new markets. This has led to a widespread use of new information technologies and an increase in migration due to the adoption of open border policies adopted in regions such as the European Union, and deliberate policies in developed countries to attract highly-skilled migration to compensate for their increasingly ageing population and internal brain drain processes. Migration has generated tensions between nations, and many theories have been developed to explain the reason why people migrate and the impact it has on both host and

source countries, and whether migration should be restricted, encouraged, or limited. Migration, as any other social phenomenon, is diversified and has a complex nature, therefore it differs from country to country, and from time to time which makes it even harder to make generalisations about its possible effects in countries.² A phenomenon that invariably accompanies migration is “*Human Capital Flight*”, commonly referred to as “*Brain Drain*”. This term has been used to refer to the international mobility of highly skilled persons that emigrate from less developed countries to developed ones in search of a better future.

Brain drain is an integral part of the process of globalization, and constitutes a significant challenge for those least developed countries undergoing processes of modernization and globalization. This has brought about an important debate about its positive and negative effects in host and source countries. However, understanding its consequences for migrants, countries involved and those who are left behind in source countries is a complex task due to the lack of reliable migration statistics³, and the fact that a proper breakdown by educational attainment of migrants is not yet available.

Brain drain is not a new phenomenon, nowadays more and more skilled people are on the move to obtain skills and jobs not available in their home countries, and this trend is likely to continue in the future. Traditionally, brain drain has been seen as a zero sum game that makes the rich richer, and the poor, poorer. It has also been a topic widely discussed in international relations literature where views range from considering it as a curse for developing countries;⁴ to considering it as a positive phenomenon for such countries.⁵

What remains true is that globalization has led to an increased international demand for skilled labour, and developed countries extensively use science and technology, and they have attracted most of the highly-skilled migration. Brain drain suggests an unequal distribution of advantages and disadvantages of global migration.⁶ However, this unequal distribution could effectively be reverted if immediate action is taken in developing countries; adoption of proper policies and a correct understanding of such phenomenon are carried out. The aim of this essay will be to identify the challenges brain drain poses to both host and source countries, and to suggest policies that should be adopted to revert the negative effects of brain drain.

2 Reza Iravani Mohammad, Brain drain Problem: A Review, *International Journal of Business and Social Science*, Vol. 2 No. 15; August 2011.

3 Docquier Frédéric, *Brain Drain, Inequality Across Nations*, IZA (Forschungsinstitut zur Zukunft der Arbeit) Discussion Papers, No. 2240, 2006.

4 Tesón, Fernando, “Brain Drain”, *San Diego Law Review*, Volume 45, Issue 4, 2008.

5 Mountford, A., “Can a brain drain be good for growth in the source economy?”, *Journal of Development Economics*, 53, 2: 287-303, 1997.

6 Johnson, Nadia, “Analysis and Assessment of the “Brain Drain” Phenomenon and its Effects on Caribbean Countries”, *Florida Atlantic Comparative Studies Journal*, Vol. 11, 2008-2009.

I. What is Brain Drain?

The term was coined by the British Royal Society to refer to the exodus of scientists and technologists from the United Kingdom to Canada and the United States in the 50s and 60s.⁷ It is now used to refer to the emigration of a nation's most highly skilled individuals. The term gained wide usage in the late 60s and has undergone a recent revival as migration has accelerated again due to the growth of intensive knowledge and information activities. Developed economies have openly set out to poach talent using a range of incentives and institutional mechanisms to attract skilled migrants.⁸

The earlier literature of the 60s⁹ tended to downplay negative externalities. The one of the 70s,¹⁰ stated that brain drain was negative as it was a zero-sum game. Recent literature¹¹ is less pessimistic: while recognising the importance of brain drain for economic development, it also says it can positively affect host and source countries as it can stimulate education and economic growth. These recent findings permit a rather more nuanced and different view on this phenomenon. Early international interest in causes and consequences of brain drain resulted in debates and resolutions in the United Nations starting from 1967; however this debate dissipated during the 80s and was rarely heard again until the 90s when it was reintroduced in policymaking and academic circles. Recent theories resulting from this debate have found some level of emigration may actually stimulate education and spur development.¹² There are some scholars that prefer to use the term of *Highly Skilled Migration* instead of brain drain, however problems arise when trying to differentiate between highly skilled migration and general or low skilled migration. The only subjective difference is that in highly skilled migration or brain drain implies human capital or expertise that move with the migrant.¹³

After the WWII, the idea that western universities and the US in particular, should become the model to follow intellectually and professionally strengthened in all those countries seeking modernisation. This process was accompanied by brain drain flows as highly skilled migrants started to emigrate causing important human resources losses to their countries of origin.¹⁴ Between 1990 and

7 Cervantes, Mario and Dominique Guellec, The brain drain: Old myths, new realities, *OECD Observer* No. 230, January 2002.

8 Commander Simon, Kangasniemi Mari, Winters Alan, "The Brain Drain: A review of Theory and Facts", *Brussels Economic Review*, Vol. 74, No. 1, 2004, págs. 235-236.

9 Grubel and Scott, 1966, Johnson, 1967.

10 Baghwati, Hamada, 1974, McCulloch, Yellen, 1975.

11 Mountford, 1997, Stark, 1998, Vidal, 1998, Stark, Wang, 2002.

12 Commander, págs. 32-33.

13 Grubel, Herbert, G. and Anthony Scott, *The brain drain: determinants, measurements and welfare effects* (Ontario, Canada: Wilfrid Laurier University Press, 1977).

14 Schwartzman, Simon, "Nacionalismo versus Internacionalismo en las políticas de formación de recursos humanos de alto nivel", pág.64 en Didou Aupetit Sylvie, Etienne Gérard (eds) *Fuga de cerebros, movilidad académica y redes científicas. Perspectivas latinoamericanas*, Programa de Apoyo al Desarrollo Universitario (PROADU), Secretaría de Educación Pública, México, 2009.

2000, total number of international migrants increased from 154 to 175 millions,¹⁵ and those holding tertiary education grew 111% from 1990 to 2008.¹⁶

Many explanations to why people migrate have been presented, however, when considering migrating; a potential migrant will only do it when the expected benefits exceed the costs. Benefits may include higher wages, greater freedom, economic and social mobility, escaping persecution, and pursuing better careers. Costs include physical and psychological costs such as leaving family and familiarity behind, difficulty in assimilating into receiving countries, and perceived loss of culture.¹⁷ People migrate as they cannot improve their living standards in their home countries. Migration policies can also foster it, such is the case of the *Labour Market Test* enforced by some European countries, as in the case of Germany and the green card that targets highly skilled migrants from non-EU countries. Migration can then be influenced by a combination of factors that include economic, institutional or personal ones. In the 90s developed countries starting suffering from scarcity of qualified workers in the field of computing, engineering, health and accounting and started to facilitate the hiring process of foreign workers.¹⁸ According to the push and pull theory,¹⁹ the reasons why people migrate can broadly be divided into two categories: push factors are endogenous circumstances in source countries that encourage people's migration such as unemployment, corruption, war, political persecution, reduced government funding, absence of social programmes. According to Gibson,²⁰ brain drain rates are higher in countries with fractionalisation, political instability and high crime rates. Pull factors are those that make host countries more attractive for migrants such as flexible immigration policies, higher salaries, better career opportunities and gaining a greater degree of freedom.²¹ Migration can also respond to personal factors such as the presence of relatives in the host countries or falling in love with someone from another country. Solimano and Tesón²² identify the current knowledge explosion in developed countries as their demand for capital, talent and skilled workers combined with poor conditions in source countries as incentive to migrate.

Assessing and calculating the phenomenon of brain drain is not an easy task due to the complexity of it, and the fact that current data available do not permit a breakdown analysis. The World Bank

15 United Nations (2002), *International Migration Report*, New York: United Nations.

16 Organización Internacional para las Migraciones y SELA, "La emigración de recursos humanos calificados desde países de América Latina y el Caribe. Tendencias contemporáneas y perspectivas", SELA, Caracas, junio de 2009.

17 Foad, Hisham, *Leveling the Playing Field or Widening the North-South Divide?*, Emory University, December 16th, 2005, pág.4.

18 Balán, Jorge, "Los mercados académicos en el Norte y la migración internacional altamente calificada: el contexto actual de la circulación de cerebros de América Latina" en Didou Aupetit Sylvie, Etienne Gérard (eds) *Fuga de cerebros, movilidad académica y redes científicas. Perspectivas latinoamericanas*, Programa de Apoyo al Desarrollo Universitario (PROADU), Secretaría de Educación Pública, México, 2009.

19 Johnson, pág.3.

20 Gibson John, McKenzie D., "The Economic Consequences of "Brain Drain" of the Best and Brightest Microeconomic Evidence from Five Countries", *The World Bank, Development Research Group, Finance and Private Sector Development Team*, August 2010.

21 Grubel, Herbert, G. and Anthony Scott..

22 Solimano, 2003, Tesón, 2008.

estimates that for a country to talk about brain drain, 10% of its inhabitants with higher studies should have left.²³ There is an absence of systematic and reliable data on migratory patterns, and migrants' characteristics. The UNDP (United Nations Development Programme) evaluates on a regular basis the number of international migrants, and so does the OECD (Organisation for Economic Co-operation and Development) however both give no detail about migrants' education levels. The first serious attempt to put together a harmonised international data set on migration by education levels is due to Carrington and Detragiache from the IMF (International Monetary Fund).²⁴ **Dócquier y Marfouk**²⁵ present the most comprehensive data on bilateral migration to date, however current statistics are still not perfect and are unable to trace who leaves the country, where they go, and what they do. It is still impossible to know how many people stay or come back, and the US is so far the only country that offers detailed data on migrants. The EU is moving towards the same system; however it is not implemented yet.²⁶

There is a current debate whether the right to migrate is a human right or not. David Miller²⁷, a well-known opponent of open borders argues that freedom of movement does not have a universal value, but only as much as it protects vital interests and basic rights, and the line should be drawn between freedoms people have as a matter of right, and what is called bore freedoms that do not warrant that kind of protection. Josep Carens,²⁸ on the other hand, remarks that every reason why one might want to move within a state may also be a reason to move abroad. One may want another job, one might fall in love with someone from another country, and one might wish to pursue opportunities not available somewhere else. Following the thought of Miller, highly skilled migration should only be allowed if one's country is in danger in a country, either by poverty, persecution, or other severe circumstances. The Universal Declaration of Human Rights²⁹ and the International Covenant on Civil and Political Rights³⁰ grant the right to migrate, article 13 of the UNDHR states that everyone is endowed with the rights to physical movement, and residence within the border if a state and everyone has the right to leave any country, including his own. Therefore, when people cannot pursuit a decent life in their home countries they should have the right to migrate.

23 World Bank, "Measuring Skilled Migration Rates: The Case of Small States", *Policy Research Working Paper* N° 4827, World Bank, 2009.

24 Carrington, W.J. and E. Detragiache, *How big is the brain drain?*, IMF Working paper 98/102, 1998.

25 Docquier, F. and A. Marfouk, *International migration by educational attainment (1990-2000)*, in C. Ozden and M. Schiff (eds). *International Migration, Remittances and Development* (New York: Palgrave Macmillan, 2006).

26 Albornoz, M., Fernández Polcuch, E. & Alfaraz, C., "Hacia una nueva estimación de la fuga de cerebros", *Centro Redes*, Buenos Aires, 2002.

27 Miller, D., *Immigration: The Case For Limits*, in A. I. Cohen and C. H. Wellman (eds), *Contemporary Debates in Applied Ethics* (Oxford: Blackwell, pág.194, 2005).

28 Carens J.H., *Migration and Morality: A Liberal Egalitarian Perspective*, in Brian Barry and Robert E. Goodin, eds., *Free movement: Ethical Issues in the Transnational Migration of People and of Money* (PA: Pennsylvania State University Press, págs. 27-28, 1992).

29 United Nations, *Universal Declaration of Human Rights*, United Nations, 1984.

30 United Nations, *International Covenant on Civil and Political Rights*, United Nations, 1966.

2. Social, Political and Economic Effects of Brain Drain

It is estimated that around 180 million people, 3.5% of the world's population, are living in countries in which they were not born. Rapidly declining transport and communications costs, as well as flexible migration policies and making it easier for people to migrate and harder for governments to restrain migratory flows.³¹ International migrants are usually well-educated: 67% of those in the US and 88% in OECD countries hold a secondary education or higher.³² They also tend to be better educated than the rest of the population in their home countries. Traditionally unskilled migration is presented as generating huge gains for migrants, families, and sending countries. On the contrary, high skilled migration is usually blamed for depriving less developed countries of human capital,³³ this hinders economic development. There have been multiple approaches trying to define the extent to which this phenomenon is beneficial or detrimental to host and source countries. On one hand, the economic approach suggests that brain drain allocates human resources efficiently as it puts talents to their best and highest use;³⁴ and on the other hand we have the approach that depicts brain drain as detrimental to a country's economic, social, and professional development. Reality is that brain drain continues to be a major concern from many countries, and its effects are now being felt in developed countries where workers are feeling threatened by large amounts of skilled labour force entering their countries.³⁵

Countries that are most concerned with brain drain tend to be less developed ones that are in need of serious reforms in healthcare, education, politics, and environment, unfortunately those most suitable and likely to bring about such reforms tend to be the most likely to be internationally marketable.³⁶ Therefore the ongoing debate about brain drain reveals important areas of improvement and consensus that ought to form the basis of action. Terms like *brain exchange*, *brain gain*, and *optimal brain gain*³⁷ have recently been used to further describe the fact that brain drain can take different forms and scenarios. The latter two are used to describe countries that manage to keep brain drain on healthy levels or that have successfully brought back their migrants.

What are, overall, some of the effects brain drain has in source and host countries? For many authors the international mobility of workers is perceived as a key issue in economic development.³⁸

31 Çağlar Özden, *Brain Drain in Latin America*, Expert Group Meeting On International Migration And Development In Latin America And The Caribbean Population Division, Department of Economic and Social Affairs United Nations Secretariat, Mexico City, 30 November – 2 December 2005.

32 Ibid.

33 Docquier, F. and A. Marfouk, 2006.

34 Tesón, pág. 905.

35 Ajay Agrawal, Devesh Kapur, and John McHale, *Brain Drain or Brain Bank? The Impact of Skilled Emigration on Poor-Country Innovation*, NBER Working Paper No. 14592, December 2008.

36 *Ibidem*.

37 Reza, 2011 provides a great description for each of these terms.

38 Ugarte Darwin, Verardi V, *Does Aid Induce Brain Drain? The Effect of Foreign Aid on Migration Selection*, CRED Working Papers 2010/12, pág.1.

The OECD estimated in 2008,³⁹ that more than half of its countries have a stock of immigrants that exceeds 10% of their population, and the share of skilled workers is increasing over time. Dócquier and Marfouk⁴⁰ estimate that between 1990 and 2000, the proportion of skilled workers over total migrants raised from 26% to 29%.

Two blocs of countries can be identified, one formed by countries that import highly skilled migrants, led by the US which hires around 30% of it, followed by Europe that has started to develop policies to attract foreign students, researchers and IT workers. In 2000, for example, Germany launched a programme to recruit 20,000 foreign specialists. By the end of 2001 half of those places had been filled mainly by eastern Europeans.⁴¹ The other bloc is formed by those countries exporting highly skilled people such as China, India, eastern Europe and Latin America. Receiving countries are generally seen as gaining from brain drain as they gain technology, expertise, and a presence of vibrant international communities that may produce new business opportunities abroad, which in turn may lead to an increase in their exports and further economic development. However, not everything is positive for host countries. Current debate on migration in developed countries goes beyond unskilled labour, illegal migrants, and economic calculations. Recent events such as 9/11 and its aftermath, have ignited national identity and security passions, which have resulted in stricter immigration policies, such is the case of post 9/11 US. Since 9/11, the US has sought to limit the access of some foreign students and visitors for scientific knowledge thought to be of potential use of terrorists. A form of xenophobia has emerged leading to stereotyping of certain migrant groups. This trend is expected to continue, and could eventually lead to intellectual protectionism.⁴²

Nationalism, nationhood, and security are becoming important topics again in developed countries as migration could be considered a hindrance to native population's well-being and professional development. An excessive number of highly skilled migrants can also lead to loss of opportunities for natives; they could end up facing up a decline in wages, and an increase in competition. Local conditions in developed countries may also pose a challenge as well; the European fiscal system is especially strict with those with high salaries, this, may in turn, cause that native highly skilled people decide to emigrate in search of better opportunities. Finally, having an important presence of migrants that still have strong links with their home countries may also create the risk of valuable knowledge being transferred to competitors.

Traditionally, in source countries, brain drain has always been associated with its negative effects, namely decrease in governmental investment, and a loss in human resources that are highly qualified.

39 OECD, "International Migration Outlook: SOPEMI", *OECD Publications*, 2008.

40 Docquier, F. and A. Marfouk, 2006.

41 Remedi, Eduardo, *Fuga de cerebros y movilidad profesional: ¿vectores de cambio en la educación superior?* en Didou Aupetit Sylvie, Etienne Gérard (eds) *Fuga de cerebros, movilidad académica y redes científicas. Perspectivas latinoamericanas*, Programa de Apoyo al Desarrollo Universitario (PROADU), Secretaría de Educación Pública, México, 2009.

42 Johnson, Nadia, "Analysis and Assessment of the "Brain Drain" Phenomenon and its Effects on Caribbean Countries", *Florida Atlantic Comparative Studies Journal*, Vol. 11, 2008-2009, págs. 11-13.

This loss is worse as those who leave are characterised by their intelligence and capacity.⁴³ As a result, the source country presents a reduction in human capital that is going to be enjoyed by host countries, a decrease in productivity, competitiveness, and a loss in social welfare.

Brain drain also induces distortions on sending labour markets resulting in a decrease in welfare. People who leave no longer participate in their home economic activity, which in the long run, may reduce long-term growth perspectives. Brain drain also presents a public finance as governments subsidize the training of people anticipating the gains, however, when these people leave, the investment yields a return to host rather than source countries. This loss is known as *Free Riding*.⁴⁴ However, one of the most striking negative effects of brain drain is *emigration surpluses* that are when the sending countries suffer from shortages in critical sectors such as education and health. These losses constitute the drain in the brain drain.

Positive effects of brain drain have often been overlooked and misunderstood. High skilled migration benefits the migrants themselves, the knowledge-producing community, and the global economy as a whole. Managed wisely it can also benefit many less developed countries. Around 37% of the legal migration stock in OECD countries falls into the highly skilled one.⁴⁵ While it is true that recent IMF and World Bank studies have consistently found a high correlation between education and legal migration,⁴⁶ this does not necessarily impact source countries negatively: prospects of migration induce the desire for skills and education, especially when the payoffs are bigger than opportunities at home. This in turn, may also lead to greater investment in skills and education. Migration can also precipitate knowledge spill-overs from host countries to source countries. Migration to study abroad in democratic countries has also shown to increase democracy in source countries. Many important independence leaders have been trained abroad.⁴⁷

We cannot always assume either that migrants' experience is more satisfactory in host countries. Standard of living should not be equated to quality of life. This implies lengths of hours worked, ease with which they can communicate to their home countries, time spent commuting, how satisfied they are with climate, levels of taxation, and access to social services.⁴⁸ There is also the widespread assumption that highly skilled workers use up their skills upon arrival to host countries, however strong evidence shows that highly skilled workers often take low-skill jobs. This phenomenon is known as *brain waste*, and it is usually accompanied by a deskilling process. This may lead to migrants returning to source countries, and individuals returning with physical and human capital earned abroad are

43 Solimano, A, "Globalización y migración internacional: la experiencia latinoamericana", *Revista de la CEPAL*, n°80, págs. 55-72, 2003.

44 Cervantes, Mario and Dominique Guellec, The brain drain: Old myths, new realities, *OECD. Observer* No. 230, January 2002.

45 Hart, David, "From Brain Drain to Mutual Gain: Sharing the Benefits of High-Skill Migration", *Issues in Science and Technology*, Volume 23, Issue 1, 2006.

46 *Ibid*, pág. 54.

47 Spilimbergo, Antonio, "Democracy and foreign education", *American Economic Review* 99(1): 528-43, 2009

48 Grubel, Herbert, G. and Anthony Scott

more productive.⁴⁹ In India, Taiwan, and several eastern European countries thousands of migrants have returned bringing home new knowledge, capital and fresh contacts. In the case migrants decide to stay in host countries, when connections are fostered, they can yield a flow back that can boost growth as expatriate networks can lead to collaborative ventures, knowledge and technology transfers.⁵⁰ This is known as *Diaspora externalities*.

In host countries, there has been an emergence of family associations and investments from migrants towards source countries that has created a strong community feeling around a nationality and shared professions. This can stimulate trade and boost exports in source countries as migrants usually retain preference for those goods they grew up with and are likely to import items they know. Migrants can also generate beneficial effects on productivity and technology diffusion. India claims to lose two billion dollars worth in brains a year, yet, without it, it could have never created such a flourishing software industry. India has heavily invested in science and technology that has been primed in the US. Thanks to their links back home, outsourcing software design to India has created a major industry bringing yearly revenues of around six billion dollars, 3 times more than what it loses.⁵¹

Remittances also constitute an important channel through which brain drain may generate positive effects as they often made a significant contribution to GDP. In 2000, the three largest remittance receivers were India, Turkey and Mexico.⁵² However, although remittances may have a multiplier effect to increase national income, it can be quite substantial as education tends to reduce the likelihood a worker remits.⁵³ Highly educated migrants are more acculturated into the host society, and, hence, less committed to source countries.⁵⁴

Internal brain drain is also another negative effect of brain drain. It is used to refer to people who stay in their home countries but work and produce for foreign firms or institutions. They embrace non-national priorities and their productivity is being taken advantage of by others. This phenomenon can affect both host and source countries.

4. Brain Drain and Latin America

Latin America is a region that is far from being homogenous. It is a region kept apart by economics and politics and only brought together by its culture and linguistic affinity. It has recently become an emigra-

49 Gibson John, McKenzie D, pág. 20.

50 Kaplan, D., "Reversing the Brain Drain: The Case for Utilizing South Africa's Unique Intellectual Diaspora", *Science, Technology, and Society*, 2(2) 1997.

51 Hart, 2006.

52 *Ibidem*.

53 Taylor, J. E. and I. Adleman, *Village Economies: The Design, Estimation and Use of Village-Wide Economic Models* (New York: Cambridge Press, 1995).

54 Lowell, Lindsay, "Some Developmental Effects Of The International Migration Of Highly Skilled Persons", *International Migration Papers 46*, International Migration Branch, International Labour Office, Geneva, 2001.

tion continent, and brain drain has constantly been included in governmental and educational agendas.⁵⁵ Starting in the mid-nineteenth century, Argentina, Costa Rica, Uruguay, Brazil and Mexico became a privileged destination for Italians, Germans and Spaniards. By and large these were highly educated. However, economic crisis and military regimes in some Latin American countries reversed the previous brain gain Europeans have brought. Political repression and dictatorships in the seventies and eighties triggered migration in countries such as Haiti, one of the poorest countries in Latin America that has lost many of its scarce human resources to the US. Almost all medical doctors have left. El Salvador, due to a 20-year civil war, has lost about half of its population to the US as well; however, compared to Haiti, its economy is picking up and has created a complex web of connections between individuals in both countries, and remittances are a very large source of foreign exchange.⁵⁶ Argentina, being amongst the five richest countries in the region, started to lose some of its best brains after mismanagement and economic crisis that followed the fall of Peron in the seventies.

Latin American regular migration has also risen in the last decade, and has undergone transformation as it now responds to professional and family motives rather than to political ones as in the seventies. On one hand there are countries whose number of qualified migrants in relation to their total population is superior to their regional average as it is the case of Argentina, Chile, Venezuela, Panama and Mexico. Then those countries that despite having a good amount of highly qualified people cannot employ them as they lack facilities, resources, and in-situ educational opportunities as Haiti, and other Caribbean islands. Finally are those countries that have traditionally exported low-skilled workforce as Honduras, El Salvador and Nicaragua; this lack of homogeneity makes that the consequences of brain drain are perceived differently in different countries. In the case of Mexico, the increasing number of highly skilled migrants has been partially compensated by immigration: nearly 19% of the people settling down there have a college diploma.⁵⁷

The US is still the main magnet for Latin American talent. It attracts around 60% of highly skilled migration from Latin America. Mexico is the country that has most postgraduate people living in the US.⁵⁸ This is because of its proximity and a large migrant network, and the fact that it is easier for Mexican people to migrate to the US. There are currently around 4,500 Mexicans teaching in the US, and around 30 out of 100 Mexican academicians have been formed in the US.⁵⁹ This is roughly the same for many other Latin American countries. Many of the college educated people, who were born in Latin America, actually complete their education in the US.

55 Commander, pág. 30.

56 Çağlar, pág. 35.

57 Ermolieva, Eleonora, “¿Fuga o Intercambio de Talentos? Nuevas Líneas de Investigación”, *Nueva Sociedad*, No 233, mayo-junio de 2011, pág. 120.

58 Didou Aupetit Sylvie, Etienne Gérard (eds) *Fuga de cerebros, movilidad académica y redes científicas. Perspectivas latinoamericanas*, Programa de Apoyo al Desarrollo Universitario (PROADU), Secretaría de Educación Pública, México, 2009, pág. 5.

59 Balbachevsky Elizabeth, Fabrício Marques “Fuga de cerebros” en *Brasil: los costos públicos del errado entendimiento de una realidad académica*, en Didou Aupetit Sylvie, Etienne Gérard (eds) *Fuga de cerebros, movilidad académica y redes científicas. Perspectivas latinoamericanas*, Programa de Apoyo al Desarrollo Universitario (PROADU), Secretaría de Educación Pública, México, 2009.

According to UNAM, ⁶⁰(Autonomous National University of Mexico) around 5,000 scientists leave Mexico yearly for better opportunities elsewhere: Around 200,000 are now working in Canada, France, Argentina, Chile and Spain. There are other destinations emerging as magnets now, US immigration went down from 55% in 1999 to 43% in 2008 when China, Australia, and Western Europe started to attract Latin Americans. It is estimated that around 14% of Mexican university graduates were living abroad in 2000.⁶¹ Latin America has only 146,000 researchers, representing 3.5% of the worldwide number.⁶²

Not everything is better abroad for migrants, among Latin American migrants arriving in the US in the 90s and that held a college degree obtained at home, only 36% obtained a skilled job, another 26% had a semi-skilled job, which means that 40% had unskilled jobs in the US labour market. Three migrants out of ten are employed in occupations that do not match their profile.⁶³ In the case of Mexican migrants, 75% are in this category. This is not the case for migrants from other countries: 70% of Chinese and Indian migrants with college diplomas have skilled jobs; this is due to the fact that for them the main path to enter the US is through employment authorisation, which requires higher levels of human capital.⁶⁴ So that Latin America can reduce the costs and take advantage of the benefits brain drain brings, it is necessary to develop policies aimed at preventing migration, encouraging return, and reintegration of migrants. Starting in the 1980s, Latin America started adopting strategies such as establishing quotas for scholarships, sanctions for those who did not return, and delaying migration through policies restricting migration. This is impractical as it infringes on basic human rights, and will do nothing but fuel discontent and illegal activities.⁶⁵ According to classical liberal theory, a state has no moral claim to its citizens' knowledge as every man has a property in his own person, and the labour of his body is his property.⁶⁶ As a result of this impracticability, in the 1990s governments launched programmes aimed at the returning of graduates, their retention and network building. In June 2005, Argentina's Labour Ministry, the Chilean Foundation and the Institute for Mexicans Abroad ran separate meetings with expatriates to try to build bridges with them. One of the main hurdles to drawing talent back in Latin America is ingrained culture of mistrust towards returning talent. People can look with fear and distrust at colleagues who return from successful careers abroad. Instead of hostility, there should be a mentality of change and a new policy of open doors. A second problem is that, in Mexico, as in many other Latin American countries, retention programmes have not been accompanied by effective labour policies, and therefore their efficiency has decreased. Only around 700 Mexican postgraduates have returned thanks to the Repatriation Programme of the CONACYT

60 Roberto Rodríguez Gómez: «Fuga de cerebros en números» en *El Universal*, 27/8/2009, disponible en <<http://rodríguez.blogspot.com>>; y «Cinco mil investigadores al año abandonan México» en *Red de Ciencia y Desarrollo*, <www.scidev.net>, 26/7/2009.

61 Ermolieva, pág. 130.

62 Organización Internacional para las Migraciones y SELA, pág. 12.

63 Ermolieva, pág. 122.

64 Çağlar, pág. 10.

65 Sanders, Ronald, Brain Drain or Export Earnings? *Caribseek Caribbean News*, July 20, 2007.

66 Locke, John, *Second Treatise of Government* (Cambridge: Hackett Publishing House, 1980).

(National Council of Science and Technology), and it lacks yearly funding. In 1984, the SNI (National Researchers' System) was created as a way to improve income of academicians and preventing brain drain, however, very few of them are members. As long as structural disadvantages continue to exist in Latin American brain drain will continue to threaten stability and future of the region.

4. What can be done about it?

There is a positive view to brain drain that emphasises the gains over the drains, and that suggests the adoption of public policies to compensate for the losses. One such policies has been to delay migration by making public service mandatory, or inhibiting migration in either source or host countries. However such a policy depends on the host countries' willingness to enact a policy that goes against their best interests. This is not impossible, though, in post 9/11 US, due to heightened security concerns, only 74,000 visas were issued in security and technology in 2002, compared to 166,000 in 2001.⁶⁷ We cannot always assume that this will be the case in the rest of the countries, and even if some host countries were willing to limit their high skilled migration, migrants will then go to those countries with no restrictions. Among other policies proposed to curb brain drain's negative effects are: subject migration to government's permission, adding years to education, establishing fiscal controls, such as taxing foreign-earned income, and discontinue policies that lure talented migrants by refraining from direct recruitment upon studies completion.⁶⁸

In Brazil, for example, authorities have reacted more harshly towards brain drain. They have sought agreements with host countries to avoid granting visas to ex-grant students, and they have included clauses in grant agreements that demand the immediate return of the person after conclusion of studies. It also imposes the obligation to stay in the country for the same period of time the scholarship was granted. Students can be prosecuted if they do not return. However, academic institutions that offer a stimulating and competitive environment in Brazil are scarce. Graduates cannot be inserted effectively into the labour market. This questions the effectiveness of such policies, and the raises the need to reexamine their implementation as return migrants end up taking up low-skilled jobs, or work for institutions with no international links. It would probably be wiser to allow them to stay longer and have links with international institutions that are productive and dynamic as local conditions do not guarantee the correct use of knowledge acquired.

Source countries' governments must now become proactive and stop trying to control people who already left. Instead they should shift their focus to start finding ways to improve local conditions for the people remaining, and provide them with incentives to stay such as better salaries, working conditions, pursue economic and social policies that bring progress, freedom and prosperity; and adopt measures to strengthen relations with expatriates. Entrepreneurship allows developing countries to

67 Tesón, pág. 904.

68 Didou, pág. 165.

capitalize on supply chain relationships and direct investment. Strengthening ties with Diasporas may also prove to be beneficial for trade and export boost. Subsidizing the organization structure of highly skilled Diasporas and provide them with incentives to create educational, scientific, and commercial relationships with partners in home countries is one way to get the gains of brain drain. Source countries should also strengthen their capacity to absorb knowledge and extract benefits from it, and build stronger educational systems that are more responsive to the global knowledge economy. They should also take advantage of information technologies currently available such as distance learning: people do not need to move out anymore to have access to better opportunities, and this would also allow expatriates to share more easily what they have learnt.⁶⁹

Conclusion

The whole idea behind brain drain is that when highly skilled people migrate, there is a shortage of people remaining with the ability to adequately develop the source country. Host countries gain extra skills and resources as it continues to become wealthier, while source countries lose highly skilled manpower.⁷⁰ In an idealized world, free labour mobility would be efficient, and migration would respond to the rational choice theory: migrants would take decisions that are good for them, and an efficient allocation of resources would take place. However, this is not the case in the real world where brain drain is significantly affecting source countries, and highly skilled migration will persist as long as international inequalities remain unchanged. The smaller, and less developed the country is, the harder it will be for it to compete globally and retain skilled workforce.⁷¹ Therefore these countries need to work on improving conditions to provide greater incentives for local people to stay: better wages, changes in the political system, more modern health and education facilities, as well as creating a more suitable environment for businesses.⁷² As long as these remain unchanged, brain drain will not cease. These efforts need to be accompanied by a number of policies aimed at reducing brain drain's negative effects.

The US has been the leader in receiving highly skilled migration, however the Canadians and Australians have further streamlined their admission policies to better compete, and so have the Irish, the English, and the Germans.⁷³ Brain drain is not constrained to developing countries, the UK and Ireland ranked high in highly skilled migration to the US in the 90s, however, these countries have managed to compensate their losses by importing human capital from less developed countries. While it is true that many source countries have found in emigration a solution for social problems as they cannot meet the needs of higher education, neither can they offer better jobs for qualified people

69 Commander, pág. 66-69.

70 Johnson, pág. 15.

71 *Ibidem*.

72 *Ibidem*.

73 Lowell, pág. 3.

with studies abroad, and emigration sends away and otherwise critical population. They should focus on abandoning the zero-sum terminology, and stop using the term brain drain to refer to highly skilled migration. Policies aimed at obtaining benefits should seek the redistribution rather than limitation of migration. Source governments should also encourage linkages and partnerships between Diasporas and national institutions to allow migrants to become more socially and economically connected to their countries. They should also subsidize research, the possible return of migrants, promote the role of researchers, academicians, and scientists abroad, and link them nationally, as well as foster the development of virtual networks, and the use of new technologies. This could make reaping the benefits quicker than trying to change local conditions. Civil conflict, a dictatorship, deeply embedded corruption, poverty and unemployment cannot be overcome easily.

Policies adopted may also need to be tailored on a regional basis. Casual dismissal of brain drain realities is not right, and policymakers in both source and host countries should examine the balance sheet and implement policies that ensure that feedback effects yield a positive return to both over the long run

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