

Mexico-U.S. Graduate Student Mobility: Current Trends and Future Issues to Study



**Report for the U.S.-Mexico
Commission for
Educational and Cultural
Exchange (COMEXUS)**

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and Cultural Exchange (COMEXUS)



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¹ This report presents the final results of the research project on Mexico-US Graduate Student Mobility, which was conducted at the Center for the Study of Higher Education (CSHE), University of Arizona and funded by the US-Mexico Commission (COMEXUS).

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Presentation

On October 9, 2008, the U.S.-Mexico Commission for Educational and Cultural Exchange (COMEXUS) organized a working session on “U.S.-Mexico Student Exchange Statistics.” The session took place during the 12th North American Higher Education Conference organized by the Consortium for North American for Higher Education Collaboration (CONAHEC) in the city of Monterrey, Mexico. Participants agreed that the main problem in studying this topic had to do with the inconsistencies and gaps in the information available on student mobility between Mexico and U.S. Therefore, they recognized the urgency of conducting a study to organize and analyze the information available on this topic.

As a result of this meeting, COMEXUS hired a research group from the Center for the Study of Higher Education (CSHE) at the University of Arizona to conduct a research project on this subject. Due to the extension of this topic, it was decided to constrain the research to mostly graduate and degree-seeking mobility. This report presents the main results of this project, whose first objective has been to find out how many Mexican and American students are seeking a degree in the U.S. and Mexico respectively; what is the proportion of graduate and undergraduate students and some of the main future trends that should be explored in the study of graduate flows between Mexico and the U.S.

The years 2006-2007 mark the period for which the most complete and accurate data was located. To consult the sources used and the calculations made to obtain this table please go to sections “Mexican students in the U.S.” and “U.S. students in Mexico” in the main text. The purpose of this table is only to provide a raw picture of comparable data for one year:

TABLE 1: COMPARATIVE DATA FOR YEARS 2006-2007

CHARACTERISTICS	MEXICAN STUDENTS IN THE U.S.	U.S. STUDENTS IN MEXICO
Estimated Total	13,926	9,500
% Non-Degree seeking	36	N/A
% Degree seeking undergraduate	42	N/A
% Degree seeking graduate students	22	.8%

Sources: Open Doors, 2009... ANUIES...

Five main findings presented in this report are as follows:

1. The large amount of inconsistencies and contradictions in the data allow preparing merely basic estimations about the number of Mexican and American students in Mexico and the U.S.,

respectively. This report and the previous two technical reports on the data reviewed describe in detail the several difficulties found in obtaining the data.

2. Mexico-U.S. graduate student mobility shares many similar trends with the larger migration flow of Mexicans going to the U.S. This is evident by contrasting the number of Mexican students who go to the US versus the number of U.S. students going to Mexico. The situation of Mexican highly skilled workers shares some similarities with the situation of the larger number of Mexican migrants in the U.S.

3. Allowing for limitations in the data, the asymmetries in the Mexico-US student mobility in terms of the proportions of degree-seeking students, especially at the graduate level, are remarkable. Even when in total numbers the differences may not be very disproportional, the assumption is that the unevenness is also reflected at the undergraduate degree-seeking level. There is no evidence that this case will be different.

4. Further research is urgent on this topic, not only regarding the consistency of databases and the creation of new ones, but also in terms of understanding the mobility of the Mexican and American students and on exploring what are its main consequences.

5. Finally, it is imperative to inform the policy design of both nations and higher education institutions based on empirical research, in order to take advantage of the possibilities that this bilateral mobility may hold for mutual cooperation and collaboration.

Justification

The relevance of this study lies on four equally important main points: first, the central role of student mobility as a global phenomenon; second, the particularities of the U.S.-Mexico relationship; third, the role of international students as a key element for the development of higher education institutions; and finally, the lack of reliable information on the student mobility between Mexico and the U.S.

According to Waters (2001) "globalisation is a social process in which the constraints of geography on economic, political, social and cultural arrangements recede, in which people become increasingly aware that they are receding and in which people act accordingly" (5). There are two important characteristics associated to globalization that has to do with directly with academic mobility: The increasing worldwide interconnectivity (express by the mobility of multiple flows and the relevance of social and technological networks) (Castells, 2000) as well as the relevance of migration as a current globalization expression

Most higher education literature understands globalization as the larger phenomenon that occurs at those levels, whereas internationalization is the way higher education institutions response to it. This definition is problematic given the lack of agency that leaves to the role of higher education institutions (Cantwell & Maldonado, 2009). In terms of student mobility, perhaps the most predominant model for describing academic mobility in general and phenomenon such as brain drain in particular, is based on a World Systems Theory framework (Wallerstein, 1987; Altbach, 1998; Altbach & Balan, 2007; Clayton, 2004). A categorization of academic mobility based on World Systems Theory situates highly industrialized countries like the U.S., England, Australia, and Canada, at the "core" of international mobility, while less industrialized countries constitute the "periphery." The core-periphery metaphor is powerful and relevant to analyzes of the internationalization of higher education, in that it directs attention to the power that agents in highly industrialized countries have in determining the fates of university systems in less developed countries. In the latter contexts, scholars have widely documented how the "disruptions of globalization" and the emergence of a competitive global economy have forced major internal restructurings of higher education systems.

However, the metaphor is inadequate if the objective is to reach a more subtle and productive knowledge of student mobility. While this model is useful in illustrating the power differentials between higher education systems in highly- and less-industrialized countries, it does so by reinforcing a view of higher education systems in less-developed countries as homogenous,

static, and monolithic. Furthermore, because the international mobility of students takes place within larger and complex processes of migration, postcolonialism, and transnationalization, “no longer can the boundaries of center and periphery, home and abroad, self and other be drawn so distinctly” (Behdad, 1993; Postiglione, 2005). One of the main challenges in this respect is that, while academic and student mobility has long been a staple of the higher education research, few studies have focused on this phenomenon as a form of migration. Nonetheless, such an approach can add important insights to the understanding of mobility from a global perspective. Understanding student mobility between Mexico and the U.S. is important to study the place of these two countries in current global and international processes.

It is very important to recognize to what extent the intensity and complications that surround the Mexico-U.S. relationship impact the migratory situation between both countries. Three characteristics make unique the migration between these two countries: age, volume and geographical proximity. Nowhere in the world is there an oldest (over 100 years old) and largest migratory flow between two neighbor countries than that of Mexico to the U.S. (Durand & Massey, 2003, p. 45). Although student migration between the two countries does not share all the characteristics of the larger phenomenon of migration, it is impossible to understand Mexican-U.S. student migration isolated from the characteristics of the overall relationships between these two neighbor countries.

One of the examples of the asymmetries between Mexico and the US is reflected on the *Atlas of Student Mobility* (IIE, 2009). According to this publication, the U.S. is the number one country of destination for Mexican students. About 56.6% of all Mexican students abroad go to the U.S. to obtain their degrees or for an academic exchange experience. The nine top destinations of Mexican students after the U.S. are: Spain (13.2%), United Kingdom (7.6%), France (5.9%), Germany (4.8%), Australia (1.7%), Sweden (.7%), Italy (.6%), Switzerland (.5%) and Japan (.5%) (IIE, 2009). This number only represents the 2.4% of the total international students that the U.S. receive; this means Mexico is located in the 7th position of sending countries, very far from the main sending countries to the U.S such as India (15.2%), China (13 %) or Korea (11.1%) (see Appendix 2).

In terms of Mexico as a country of destination for American students, the United States is again in the first place; about 34.4% of the total number of international students in Mexico comes from the U.S. The other countries are: France (15.5%), Canada (6.3%), Spain (6%), Germany (5.5%), Japan (2.2%), Australia (2.1%), United Kingdom (1.7%), Colombia (1.4%) and Chile (1.3%). On the opposite, Mexico as a place of destination for U.S. students is again in the 7th position

after the United Kingdom, Italy, Spain, France, China and Australia. The asymmetry between the two neighbors on student mobility seems blatant (See Appendix 3)

International students have become essential for higher education institutions, as well as for sending and host countries. Bhandari R. and Blumenthal (2009) report that 2.9 million students [are] “seeking an education outside their home country” (p. 1). Some authors estimate that the mobility of academics has also increased rapidly in the last decade (Finkelstein, 2006; Marmolejo, 2009). The number of international students is connected to technology innovation, global economic competition, knowledge creation, university prestige and the place in worldwide rankings (Altbach, 2004a; Altbach & Teichler, 2001; Cantwell, 2009; Maldonado-Maldonado & Cantwell, 2008; Marginson, 2007; OECD, 2009; Peterson, Briggs, Dreasher & Horner, 1999; Saxenian, 2006; Stephan & Levin 2001; Teichler, 2004; Tremblay, 2005). According to Solimano (2008), it is of extreme importance for the policy research agenda on national development “to fill the information gap, particularly in developing countries, on the magnitude and characteristics of talent mobility” (Solimano, 2008).

Finally, there are several inconsistencies and gaps in the information available on student mobility, especially in the Mexican case. Historically, official American data as well as data coming from independent U.S. organizations has been more complete, extensive and refined than the official and independent Mexican data available. Actually, just answering to the general question on how many Mexicans live in the U.S. and how many Americans live in Mexico (without considering their educational attainment or their migratory status) is very challenging. Castles and Miller (2003) point out that really “no one knows exactly how many international migrants there are” worldwide (p. 4); in the case of Mexico and the U.S. migration the situation is also critical given the intensity of the relationship and factors such as the large number of documented and non-documented Mexican migrants.

Data Collection

The research team reviewed 33 websites and almost 70 data bases to obtain as much accurate data as possible. Two previous reports were completed on academic mobility Mexico-U.S.A; they describe all the sources of information reviewed, the characteristics, contradictions and limitations across sources. Some recurrent methodological shortcomings include:

- ❖ Different ways to measure the amount of international students based on flows or stocks. Most reports measure the size of the flows and very few have attempted to measure the size of the current volume of students (stocks). Obtaining data of new entrees, new students enrolled or new visas is easier that finding ways to determine, for example, the number of the students enrolled or persons living in the country for more than one year.
- ❖ Discrepancy among databases that report annual information based on academic years versus others that report fiscal years. Some of the small inconsistencies when data is compared across sources can be explained by this situation (Table 1 is an example of this).
- ❖ Very few authors and organizations make the necessary methodological clarifications when they present data. This complicates the analysis and comparison of different sources.
- ❖ Reliance on data from national census reports. This is problematic since in most cases reference is made to the 2000 censuses in the U.S. and Mexico, and therefore the information provided may be very outdated. Another difficulty in the Mexican case is that, given the small numbers of Americans residing in the country, the Mexican census has not considered it a priority to gather more detailed data about this population. Once the new CENSUS information will be released it would be essential to consult the new data provided and compare with the previous one.

Appendix 1 describes the 33 websites and the data bases reviewed. Also, the complete reports can be consulted at COMEXUS official website: www.comexus.org.mx.

Mexican Students in the U.S.

The database review revealed the difficulty of forming a picture of the characteristics of mobile students. Even though more information was found concerning Mexican students in the U.S., the fact remains that there is not enough information about the students themselves. Determining the proportion of degree-seeking versus non-degree seeking students constitutes a major challenge, given the lack of comparable data across sources. As Table 1 illustrates, the data available from year to year varies greatly from one source to another. IIE/Open Doors was the only source that provided information spanning an entire decade.

TABLE 2: NUMBER OF MEXICAN STUDENTS IN THE U.S., BY DATA SOURCE, 1996-2008.

YEAR	OECD	IIE/ Open Doors	NCES	NSF
1996	N/A	8,975	N/A	N/A
1997	N/A	9,559	N/A	N/A
1998	N/A	9,641	N/A	N/A
1999	N/A	10,607	N/A	N/A
2000	N/A	10,670	N/A	N/A
2001	N/A	12,518	N/A	N/A
2002	N/A	12,801	N/A	N/A
2003	N/A	13,329	N/A	N/A
2004	13,329	13,063	N/A	N/A
2005	13,643	13,931	N/A	N/A
2006	14,425	13,926	13,826	9,085
2007	N/A	14,837	N/A	9,207
2008	N/A	N/A	N/A	N/A
2009	N/A	N/A	N/A	N/A

Given the fact 2006 is the only year for which the four data sources offer information, this year was taken as a baseline to try to estimate the proportion of degree-seeking Mexican students in the U.S. The reader may notice that the number of students reported by the NSF (9,085) is significantly lower than the figures reported by the OECD, Open Doors, and NCES. This is because the NSF reports exclusively the figures for degree-seeking students, both at the graduate and undergraduate levels (see Table 2). Thus, for 2006, the NSF reports that a total of 5,890 Mexicans were pursuing undergraduate degrees, while 3,026 were enrolled in graduate programs. These figures help to estimate the approximate percentage of non-degree seeking students for that year. The numbers reported by the NSF were subtracted from the figure provided by Open Doors, which includes both degree-seeking and non-degree seeking Mexican students in the U.S., for 2006 and 2007. The difference constituted the estimate of non-degree seeking students for those

years. According to this estimate, of an approximate total of 13,926 students in 2006, 42.3% were enrolled in undergraduate programs, 21.7% in graduate programs, and 34.8% were non-degree seeking.

TABLE 3: ESTIMATED DEGREE-SEEKING AND NON-DEGREE SEEKING MEXICAN STUDENTS IN THE UNITED STATES, 2006 & 2007

YEAR	UNDERGRADUATE	%	GRADUATE	%	OTHER (NON-DEGREE-SEEKING)	%	TOTAL	%
2006	5,890	42.3	3,026	21.7	4,841	34.8	13,926	100
2007	6,059	40.8	3,148	21.2	5,630	37.9	14,837	100

Source: Undergraduate and graduate figures, National Science Foundation. Total for 2006, IIE/Open Doors. Total for 2007, NCES Digest of Education Statistics, 2008.

Because there is no data available for other years, it is not possible to test the reliability of this estimate. This calls attention to the importance of collecting data that makes it possible to establish baselines for comparison across different datasets and time periods.

Determining other characteristics of the students is even less likely based on the scant information available. A case in point is the attempt made at determining the number of Mexican students who receive scholarships from the major sponsors to carry out studies in the U.S. In this respect, of the six sponsoring agencies reviewed, only CONACYT, COMEXUS, and the CASS/SEED program reported information regarding the number of sponsored students. Furthermore, even though CONACYT does provide information across time, the other sponsors only report disaggregated figures for 2006, as detailed in Table 3.

TABLE 4: NEW SCHOLARSHIPS GRANTED TO MEXICAN STUDENTS BY LEADING SPONSORING INSTITUTIONS, 2006

SPONSOR	2006
CONACYT	285
COMEXUS	40
CASS/SEED	47
PROMEP	N/A
TIES	N/A
PROMESAN	N/A
TOTAL	372

However, since these figures refer only to new scholarships granted in 2006, they underestimate the number of sponsored Mexican students that resided in the U.S. that year. This is evident when CONACYT figures for new and current scholarships in 2006 are compared. As Table 3 shows, CONACYT granted 285 new scholarships that year; however, a total of 579 scholarships were active in the same period. This includes grantees from previous years whose

awards were still active, as well as those that obtained renewals and extensions. This latter figure thus constitutes the “stock” of CONACYT students in the U.S. for 2006.

TABLE 5: NUMBER OF CONACYT-SPONSORED STUDENTS IN THE U.S., 1997-2005

SCHOLARSHIPS	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006 ^P
CURRENT	1,862	1,628	1,627	1,597	982	927	759	661	613	579
NEW	428	356	459	482	447	237	198	152	215	285
TOTAL	2,290	1,984	2,086	2,079	1,429	1,164	957	813	828	864

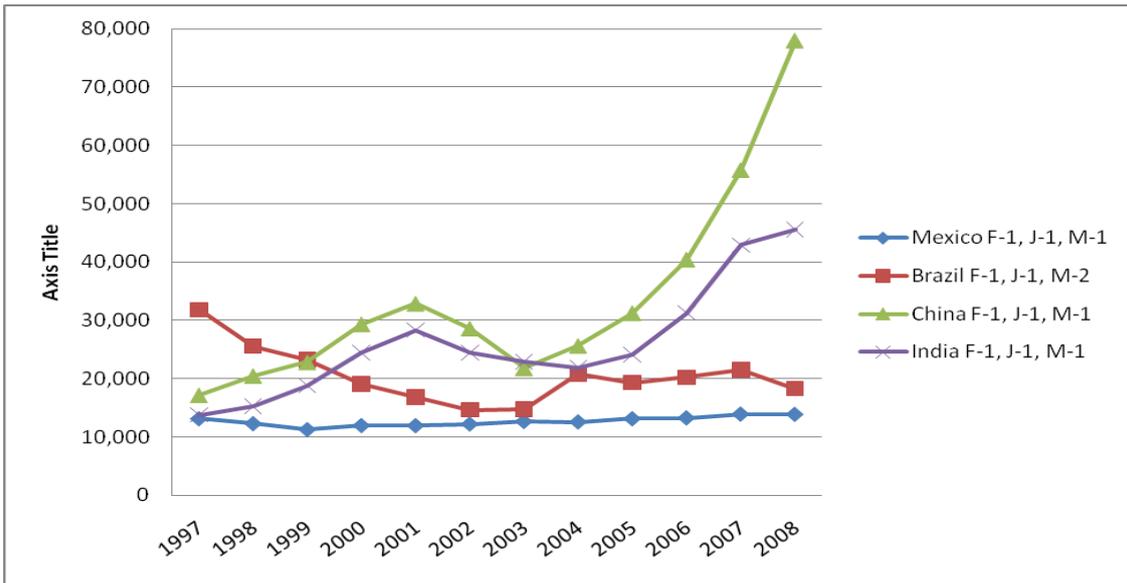
^P Preliminary data
Source: Series estadísticas del CONACYT

Based on the earlier estimation of the number of degree-seeking Mexican students in the U.S., it is possible to determinate the approximate proportion of students who receive governmental sponsorship. In the case of CONACYT, for example, a total of 579 students held scholarships in the U.S. in 2006. This represents roughly 4% of all Mexican students in the U.S., according to the Open Doors baseline for 2006. Since CONACYT only sponsors students pursuing graduate studies, based on these calculations, in 2006 approximately 19% of all Mexican graduate students in the U.S. were sponsored by CONACYT. Again, it should be emphasized that the lack of reliable and comparable information makes it impossible to reach anything other than these crude estimations. Based on the review of databases, it is not possible to determine with more certainty the proportion of Mexican students who receive governmental sponsorship versus those that receive institutional aid or pay their own way. More pressingly, the lack of information makes it virtually impossible to consider other important characteristics of the students, including field and level of study, gender, and geographical distribution in the receiving country.

Characteristics of Mexican Students in the U.S. by Visa Status

A discussion of the visa type that is granted to Mexicans upon entering the U.S. is important since it helps contextualize student academic flows of Mexicans within national and international settings. Figure 1 compares student and exchange scholar visas over the last 10 years for Mexico, Brazil, China and India. The predominant feature is the staggering growth of visas for Chinese students and scholars. Although the number of visas for Mexicans has fluctuated during the same period, it has remained relatively stable, and much lower, than the numbers for China, India, and Brazil.

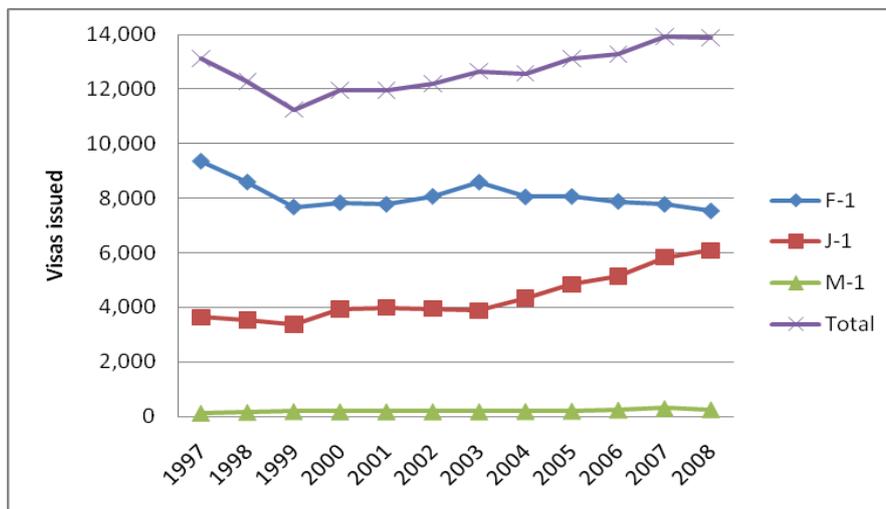
FIGURE 1: F-1, J-1 & M-1 VISAS ISSUES BY SELECTED COUNTRY OF ORIGIN, 1997-2008



Source: U.S. Department of State, Bureau of Consular Affairs: Non-immigrant visa issuances by visa class and by nationality.

Even though the total number of non-immigrant visas for Mexicans has increased gradually since 1999, the data shows a differential trend for each type of visa (see Figure 2). The number of F-1 visas shows a steady decline from the beginning of the period, while the number of J-1 visas grew and is currently almost on a par with F-1 visas. In 1997, F-1 visas made up 71.3% of all primary visas granted to Mexicans, while J-1 visas constituted close to 28%. Over the years, however, the proportion of J-1 visas gradually increased to 35% in 2005 and nearly 44% in 2008. Although M-1 visas constitute only a small portion of all primary visas, they have also experienced growth, from 1% in 1997 to close to 2% ten years later.

FIGURE 2: F-1, J-1, & M-1 VISAS ISSUED TO MEXICANS, 1997-2008



Source: U.S. Department of State, Bureau of Consular Affairs: Non-immigrant visa issuances by visa class and by nationality.

Although seemingly straightforward at first, these data conceal differences among the grantees that are important to consider if a distinction between student and academic flows would be made. As mentioned in the annexes, the primary distinction in non-immigrant visas granted to Mexicans is between academic students (F) and vocational students (M). Each of these is further divided to distinguish among the principal alien attending an educational institution on a full-time basis (F-1 or M-1) and his or her spouse and minor children (F-2 and M-2). The J-1 visa is granted to students or scholars going to the USA to pursue either undergraduate or graduate degrees, to conduct research and who are being sponsored through government funding (either American or a foreign one). However, as happens with CONACYT students, it is harder for the American government to keep track of students and scholars who are getting only financial support from a foreign government.

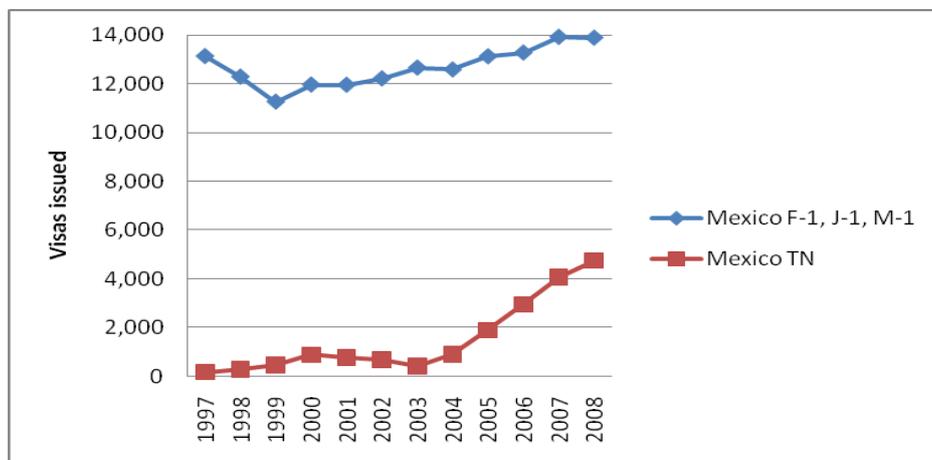
Based on this description, it would be easy to assume that F-1 visas can act as a reliable proxy for student flows, while the J-1 visas could refer more specifically to academic mobility. However, it is important to consider that J-1 visas are granted not only to research scholars, professors, and professional trainees, but also to exchange students at all academic levels. This is important to keep in mind when it is showed the steady decline of F-1 visas relative to J-1 visas since 2003. Several factors may have contributed to this phenomenon, including the following:

- ❖ There are some contradictions in CONACYT policies on which type of visas they require to their sponsored students. It seems the practice is that CONACYT leaves up to the recipient institution and in some cases to the students what visa they prefer. This practice seems contradictory with the idea of requiring a J1 visa to all sponsored students in order to make them responding to their obligations with the sponsor (in this case with the Mexican government).
- ❖ Therefore, the data presented must be approached cautiously in light of calculating that approximately 19% of all Mexican graduate students in the U.S. were sponsored by CONACYT in 2006 but there is uncertainty on knowing how many of these students receive a J1 or F1 visa. A seeming increase in the number of non-degree seeking students in recent years may have also contributed to the J-1 upward trend. In the estimation of the number of degree- and non-degree seeking Mexican students in the U.S., it was calculated that in 2006 close to 35% (4,841) of all Mexican students were, in fact, non-degree seeking. Using the same calculating criteria, the proportion of these students was estimated at 37.9% (5,630) in 2007. Once more, the lack of data prevents from making a stronger claim in this direction, yet it seems is a factor that must be kept under consideration in future studies.

- ❖ At the same time, the decline in F-1, J-1 and M-1 visa approvals by the late 1990s may have been offset in part by an increase in TN visas, introduced as part of the signing of NAFTA. According to U.S. Citizenship and Immigration Services, “certain professionals from Canada or Mexico may enter the United States for temporary employment under the provisions of the North American Free Trade Agreement (NAFTA)” (p. 8). Eligible professionals are admitted under the TN classification, while their dependants are admitted as TD not authorized to work in the United States. Sixty-three professions are covered under this provision, including accountant, architect, economist, engineer, interior designer, lawyer, librarian, vocational counselor, dentist, pharmacist, nutritionist, veterinarian, meteorologist, zoologist, horticulturalist, and college or university teacher.

As figure 3 illustrates, TN visas have increased dramatically over the last 5 years. In 2004, 12,577 Mexicans received F-1, J-1 and M-1 visas, while only 902 received TN visas. By 2008, the visas for students and scholars continued its gradual growth, reaching 13,881. However, a total of 4,741 TN visas were issued to Mexicans that same year; this represents a growth of 525% relative to 2004.

FIGURE 3: F-1, J-1, M-1 & TN VISAS ISSUED TO MEXICANS, 1997-2008



Source: U.S. Department of State, Bureau of Consular Affairs: Non-immigrant visa issuances by visa class and by nationality.

U.S. Students in Mexico

The data for American students in Mexico is both scarce and often unreliable. A case in point is the data provided by two publications prepared by the Institute of International Education (IIE): The 2007 Atlas of International Student Mobility and the 2009 Open Doors report. According to the IIE Atlas, Mexico receives the most international students from the U.S. This report cites data provided by ANUIES (the Mexican National Association of Universities and Institutions of Higher Education) which states that in 2007 there were a total of 2,880 international students enrolled in Mexican higher education institutions. This figure stands in stark contrast to those provided by the IIE Open Doors 2009 report, which indicates that the number of American students in Mexico increased 5.3% from 9,461 to 9,963, in the period between 2006 and 2008 (see Table 1). One possible explanation for this huge discrepancy could be that ANUIES reports only those students enrolled in degree programs in Mexico, as opposed to all degree-seeking and non-degree seeking international students. However, neither the IIE Atlas nor ANUIES provide any information that may support or refuse this possibility.

TABLE 6: AMERICAN STUDENTS IN MEXICO, BY SOURCE, 1996-2007

YEAR	OPEN DOORS	UNESCO
1996/97	6,685	N/A
1997/98	7,574	N/A
1998/99	7,363	N/A
1999/00	7,374	1,141
2000/01	8,360	690
2001/02	8,078	830
2002/03	8,775	N/A
2003/04	9,293	N/A
2004/05	9,247	N/A
2005/06	10,022	N/A
2006/07	9,461	N/A
2007/08	9,963	N/A

Source: Open Doors 2009 Country Fact Sheet for Mexico; UNESCO, Institute for Statistics Education Report, Table 14: Tertiary Indicators (<http://stats.uis.unesco.org/unesco/ReportFolders/ReportFolders.aspx>).

The number of total international students in Mexico provided by ANUIES (2,880 in 2007) also contradicts data provided by the UNESCO Institute for Statistics. An education report provided by this latter agency indicates that in the year 2007 there were 24,950 international

students in Mexico. Furthermore, UNESCO’s data for American students in Mexico are far lower than those provided by Open Doors, which remain relatively stable over time.

The great discrepancies in the data discussed above highlight the difficulty in trying to reach plausible estimations for the number of American students in Mexico over time. They also provide a necessary context to bear in mind when considering other data for American students found in this review. For example, ANUIES provides figures for the American students enrolled in Mexican graduate programs. Data is available for the 2004-2005 and 2006-2007 academic years, and is divided according to the regional system ANUIES uses to categorize Mexican universities. ANUIES reports that a total of 98 and 84 American students were pursuing graduate degrees in Mexico in 2004 and 2006, respectively.

TABLE 7: AMERICAN STUDENTS ENROLLED IN GRADUATE PROGRAMS IN MEXICO, 2004-2005 AND 2006-2007

YEAR	ANUIES REGION						TOTAL
	NORTHWEST	NORTHEAST	CENTER WEST	CENTER SOUTH	SOUTHEAST	MEXICO CITY	
2004-2005	9	25	12	15	2	35	98
2006-2007	6	20	9	18	4	27	84

Source: ANUIES, Graduate statistics 2004-2005 and 2006-2007, http://www.anui.es.mx/servicios/e_educacion/index2.php

Considering the great differences in the estimates by Open Doors, UNESCO and ANUIES regarding the number of American and international students in Mexico, it is impossible to establish a tentative baseline against which to estimate the proportion of Americans enrolled in graduate programs in Mexico. It is perhaps more telling to compare the numbers provided with ANUIES against the number of Mexican students enrolled in graduate programs in the U.S.

Finally, the review conducted also located some data regarding the sponsorship that American students receive for studying in Mexico. For instance, Table 3 shows data from the U.S.-Mexico Commission for Educational and Cultural Exchange (COMEXUS) regarding its programs for students. COMEXUS provides very detailed information regarding sponsorship for Americans to study in Mexico that allows us to see the number of scholarships granted to different types of students. Most scholarships are designed to help students pursue research or internships relating to their thesis, dissertation, or individual fieldwork on issues of relevance to both countries; this is the case for all the categories listed in Table 3, with the exception of the Graduate Degree Program. The latter is the only scholarship intended to help students complete a master’s or doctorate degree at a Mexican university or qualified academic institution. As such, this is the only scholarship designed for degree-seeking students.

TABLE 8: COMEXUS PROGRAMS FOR AMERICAN STUDENTS IN MEXICO, 1991-2007

PROGRAMS FOR STUDENTS - COMEXUS						
YEAR	STUDENT RESEARCHERS	GRADUATE DEGREE PROGRAM	PUBLIC POLICY INITIATIVE	BINATIONAL BUSINESS	FULBRIGHT HAYS - STUDENTS	TOTAL
1991	11	N/A	N/A	N/A	5	16
1992	23	N/A	N/A	N/A	3	26
1993	14	N/A	N/A	N/A	2	16
1994	21	N/A	N/A	N/A	3	24
1995	29	N/A	N/A	N/A	3	32
1996	25	N/A	N/A	5	1	31
1997	16	N/A	N/A	7	2	25
1998	22	N/A	N/A	15	0	37
1999	21	N/A	N/A	8	3	32
2000	20	N/A	N/A	12	1	33
2001	19	N/A	N/A	9	7	35
2002	21	N/A	N/A	8	6	35
2003	18	2	N/A	10	10	40
2004	16	2	4	8	5	35
2005	16	2	2	10	10	40
2006	20	2	2	7	7	38
2007	22	2	3	9	13	49
2008	21	0	3	10	12	46
2009	18	2	4	11	6	41

Source: COMEXUS Annual Academic Report, 2007

The reader may appreciate that the students in the graduate degree program make up a tiny proportion of COMEXUS-sponsored students. This possibly reflects the low numbers of American students who pursue graduate degrees in Mexico, as suggested by the ANUIES data discussed above.

Finally, the Interagency Working Group (IAWG) of the U.S. Government also provided some data on government-sponsored programs for studying in Mexico. Two programs are aimed at students: the Program for North American Mobility in Higher Education (PROMESAN) and the Fulbright-Hays doctoral dissertation research abroad. PROMESAN, created in 1995, seeks to foster student exchange between Canada, Mexico, and the United States. The government of each country provides resources to sponsor collaboration projects between participating institutions in each country. One important characteristic of all eligible projects is that they must include a non-degree student exchange component. Although the program was first created in 1995, it was not until 2001 that the student exchange component was put in place. Between 2001 and 2007 the number of students participating in this program increased from 33 to 204.

As its name implies, the Fulbright-Hays doctoral dissertation research abroad provides grants to colleges and universities to fund individual doctoral students who conduct research in other countries, in modern foreign languages and field studies for periods of six to 12 months. Also a program for non-degree-seeking students, the program granted a total of 12 awards in 2007.

TABLE 9: AMERICAN STUDENTS IN MEXICO UNDER SPONSORSHIP OF THE U.S. GOVERNMENT, 1998-2007

FY	PROMESAN	FULBRIGHT-HAYS DOCTORAL DISSERTATION RESEARCH ABROAD	TOTAL
1998	0	5	5
1999	0	3	3
2000	0	3	3
2001	33	7	40
2002	70	6	76
2003	20	8	28
2004	226	5	231
2005	173	8	181
2006	228	10	238
2007	204	12	216

Source: Interagency Working Group (IAWG) on U.S. Government-Sponsored International Exchanges and Training, Inventory of programs FY 1998-2007

In sum, the information available for American students in Mexico is limited, as this section illustrates, and often a lot more robust in the case of non-degree-seeking than degree-seeking students. Although this situation precludes the possibility of carrying out a more in-depth analysis of student mobility between Mexico and the United States, the data founded does suggest the great asymmetry that characterizes student flows between Mexico and the United States.

Discussion

1. Impact of student mobility in Mexico and in the U.S.

There is a current assumption about the value that the mobility of international students represents for the receiving and sending countries. In the Mexican case, the emphasis should be on what is the type of impact the country receives from this mobility.

In the U.S. case, this country still represents the most important host country in the world. After September 11th, the U.S. lost some relevance in attracting international students versus other countries such as the United Kingdom or Australia. Even when Mexico is not one of the top sending countries worldwide, it may still be strategic in some institutions and geographical areas, such as along the U.S.-Mexico border.

As mentioned before, one problem is the lack of data on migrants in Mexico where there is more data on migrants in the U.S. With the little information available on the U.S. citizens in Mexico, there is not clarity on who they are or what they do, nor to what extend how many of the US citizens reported in Mexico are the daughters and sons of past Mexican migrants in the U.S. In this sense, it is clear that before researching deeper on possible impact of the student mobility it is necessary to improve and refine available data on this may be possible only with a bi-national effort and political will.

If “the gains and losses from the mobility of talent for sending and receiving countries depend on whether, for example, the international flow of people is temporary or more permanent” (Solimano, 2008, p. 11) is something unknown for the Mexico-US case because there is not complete and enough information on this.

In discussing the relevance of graduate students, De Blij (2008) points out that Ph.D. students (along with faculty members) should be considered as “globals,” as opposed to what the author defines as “mobals” and “locals”. Globals are described as: [those who] “easily move across national borders and cultural context and are a part of global networks of professional contacts and activities. Locals are those who do not have the opportunity to escape their immediate contexts and pressures”. Locals basically do not have the chance to move and “Mobals” are described as [those who] “may or may not cross national borders, yet their migration is often driven by economic need and survival and does not come with the same level of access and opportunity as that the globals” (O’Hara, 2009, p. 29). Understanding that these definitions may be problematic, “mobals” may be differentiated by their country of origin,

institution that they belong, and other class, race or social characteristics: “borders often continue to demarcate extensive, tangible differences in work environments, infrastructure, resources and opportunity” (O’Hara, 2009, p. 29). Therefore this classification must be taken with precaution and even challenging it by affirming there are some international students more “mobals” than others and, and that these definitions may be closely linked to the students’ country of origin.

There is some empirical evidence to consider that highly-skilled migrants tend to be more mobile than low-skilled individuals:

“The empirical evidence on the size and direction of the mobility of highly skilled individuals is still scant. However, current trends show that the mobility of people with tertiary education (a proxy of talent) is higher than the mobility of people with lower levels of education” (Solimano, 2008, p.3).

Skeldon (2009), citing Stark and Fan, offer evidence that highly skilled migrants tend to obtain higher income than migrants with less education. Following this interpretation, “it is the possibility of migration that induces individuals in a developing country to acquire higher education (Stark and Fan, 2007, p. 261)” (p.5). Another assumption today has to do with the contribution of the “globals.” “Talents constitute an international in elite economic, financial and cultural areas. These international elites can work in transnational corporations, in the bureaucracy of international organizations, in international banks, universities, or government” (Solimano, 2008, p.22). This means that highly-skilled migrants may not only be more flexible in terms of moving to another geographical location; they also enjoy the added advantage of being mobile across the types of employment they can seek.

It is assumed that a large proportion of graduate students are potential “globals,” how many of Mexican graduate students would fall under that category? How many American graduate students? And what is the situation between the two countries in terms of the mobility of their “globals”?

In the current and expected international race for attracting international students, there seems to be a tendency where “developed countries have sought to limit or control more effectively the entry of the less skilled” while at the same time they are transforming their immigration policies to attract more highly skilled migrants (Skeldon, R. 2009). Kuptsch and Pang (2006) pointed out that “global talent has never been more mobile, thanks to changes at the national, regional and international levels which have eased their flow across borders” (p. ix).

Therefore it seems necessary not only to understand the situation of student mobility to the short, medium and long terms but also to differentiate on the characteristics of the students (i.e. fields of study, social, economic and cultural capital, etc.) and looking ways to explore the implications of studying abroad from the point of view of the individuals who go as well as the higher education institutions, national systems and countries who send and receive these individuals.

2. Necessity on expanding the models to explain student mobility

The higher education literature seems to suffer from a recurrence to argue for and against the push-pull model and nothing else. This happens with authors who actually use the model and by authors who disagree with it (Altbach, 2004; Li, M. & Bray, M., 2007; McMahon 1992; Mazzarol & Soutar 2002; Cantwell, Luca and Lee, 2009; Maldonado and Cantwell, 2008). Most discussions only have to do with this model. There is little if any acknowledgment that the literature on migration is very multidisciplinary and has applied other models and theories (Bommes & Morawska, 2005). For decades, the emphasis in this field has been on the socio-economic determinants usually applied to migration in general, of which Massey (1999) offers a comprehensive review. More recently, the field of migration studies received an infusion of new perspectives drawn from social capital theory, networks theory, and emerging theories of transnationality. Though salutary, these points of view have been slow to enter the higher education literature and they have yet to gain widespread usage.

According to Thron & Holm Nielsen (2008), there are three main approaches to analyze highly-skilled mobility:

- ❖ Neoclassical economics (importance of the wage differentials). Within the neoclassical economics there are different tendencies, especially with approaches such as segmented labor market theory.
- ❖ Transnationalism (strong ties to home country). The use of the concept diaspora is particularly important within this approach (Diaspora is defined as “a community of people embedded, through psychological and physical links, in a larger context or environment” where there is an important emphasis on the idea of culture) (Smith and Stares, 2007, p. 18-19).
- ❖ Social network theory (relevance of personal and social linkages” (p. 148).

Additionally, other three more approaches could be used:

- ❖ Theory of “global governance” (it suggests to reduce the role of national states and to consider other global forces) (Counihan & Miller, 2006, p. 261)
- ❖ World systems theory (economical and political power is unequally distributed among nations); and finally,
- ❖ “Cumulative causation theory” (“causation is cumulative because each act of migration alters the social contest within which subsequent migration decisions are made” (Massey, 1999, p. 45).

These theories provide different understandings on migration. It is important to note that even among proponents of the same theory there are different views, trends and disagreements. The key aspect of this discussion is to highlight how restrictive the field of higher education has been on just adopting the push-pull model exclusively to explain why students go from one place to another and giving predominance to economic aspects of mobility. Unfortunately, the push pull model has become almost the homogenous ideology to explain student and highly skilled personal; surely, this is a pending issue for future research on this area.

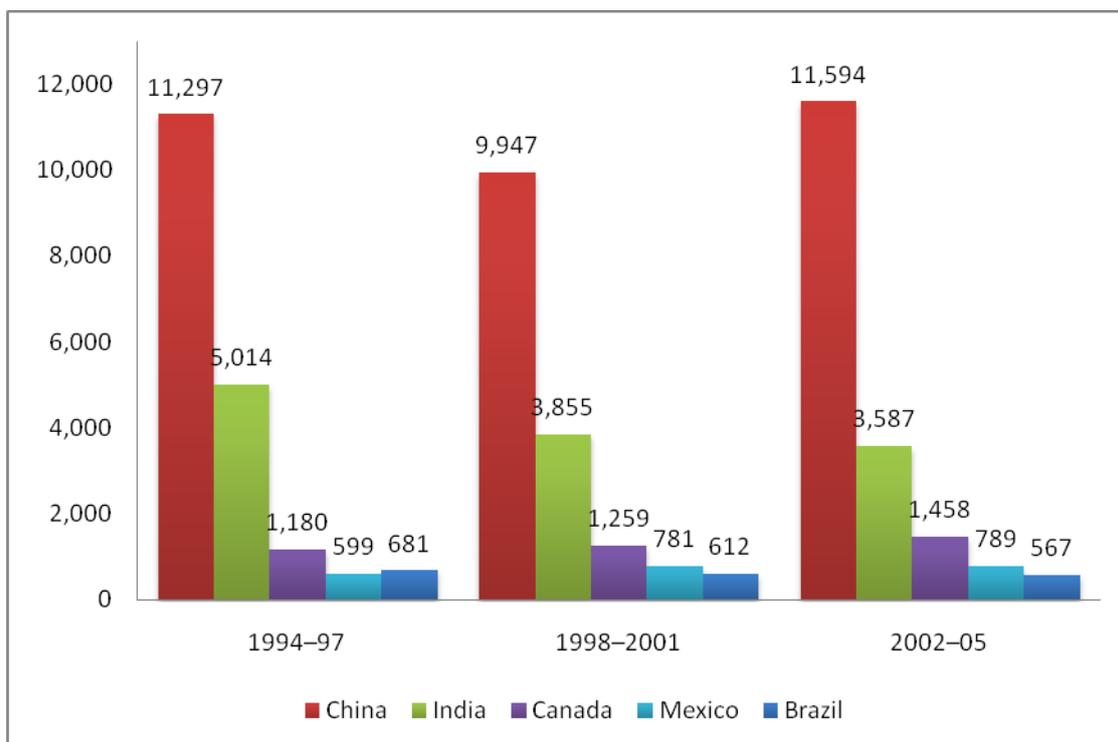
3. Brain drain

The phenomenon of brain drain is connected in multiple ways to student mobility and in particular with the type of mobility discussed in this report: graduate student mobility. The fact that many Mexican students go to get a graduate degree to the USA takes to the question of what happen with them once they complete their studies. According to the Department of Economic and Social Affairs of the United Nations (2004) and Abella (2006), the only four countries “experiencing brain drain” that are included in three recently published reports on the topic (Adams, 2003; Carrington and Detragiache, 1998; Bein, Docquier and Rapoport, 2002) are the Dominican Republic, El Salvador, Jamaica and Mexico. As mentioned earlier, the U.S. is the main destination for Mexican students and for Mexican migrants in general. However, if other variables are taken into consideration, such as “technical talent” (formal training and education in fields such as sciences and technologies) (D’Costa, 2008, p. 46), Mexico could well not be considered as a case of brain drain. Even more complicated is the fact that most accounts of brain drain measure flows but not stocks, so the numbers could differ drastically (Docquier and Marfouk, 2006). Therefore there is no definitive classification of when a country should be defined as a brain drain case or not but at least Abella’s and the Department of Economic and Social Affairs’ comparison (2006) always locate Mexico as an example of the top 10 countries experiencing brain

drain. In 2007, 3,026 Mexican students in the United States were pursuing graduate degrees, that is, an estimated 21% of all Mexican students in the country that year.

Regarding only graduate students, the numbers for Mexico are direr. According to data provided by the National Science Foundation (NSF), the number of doctoral degrees awarded to foreign students in the United States seems proportionally closer to the data from Brazil; on the other hand, the number of Mexicans who received doctoral degrees in S&E literally dwarfs in relation to the number of Chinese and Indian recipients (see graph 2).

FIGURE 4: FOREIGN S&E DOCTORAL RECIPIENTS IN THE U.S., BY SELECTED COUNTRY OF ORIGIN, 1994-2005

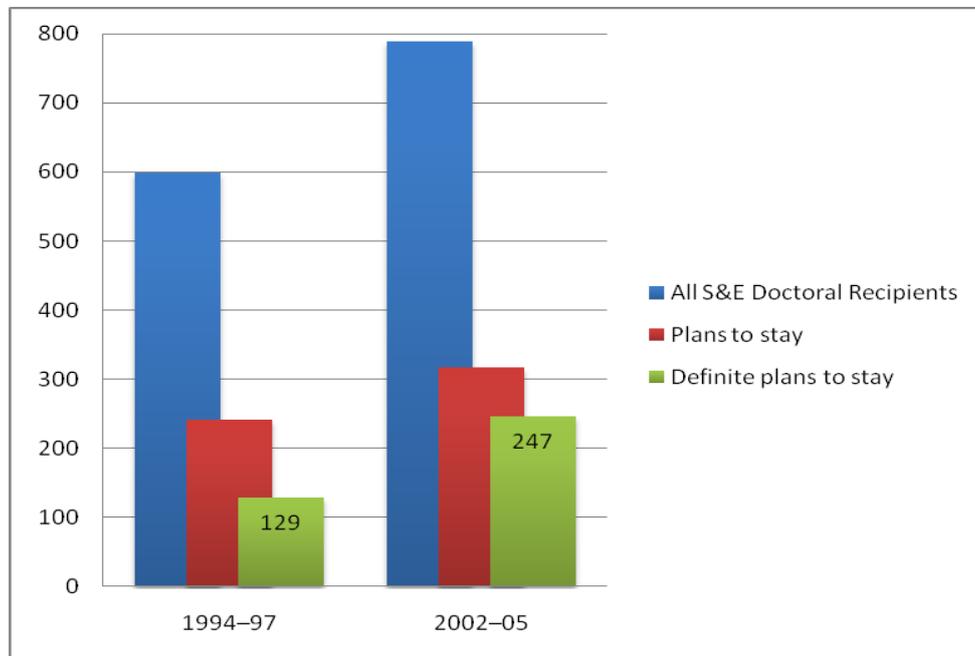


Source: NSF 2008, Higher Education in Science and Engineering. In Engineering indicators. Downloaded on Jun 25, 2009, from (<http://www.nsf.gov/statistics/seind08/c2/c2h.htm>)

In terms of the fields, mathematics and computer sciences constitute the fields with the least number of doctoral degrees granted to Mexicans (see appendix 3). This could be the basis to argue that Mexico does not suffer of brain drain as other countries (although to make this claim, these figures should be compared with those of the total number of graduate students in these fields in Mexico). However, the main areas where Mexican doctorate recipients are largely concentrated are in the biological and agricultural sciences, with engineers following closely behind, a trend that has remained relatively stable since 1994.

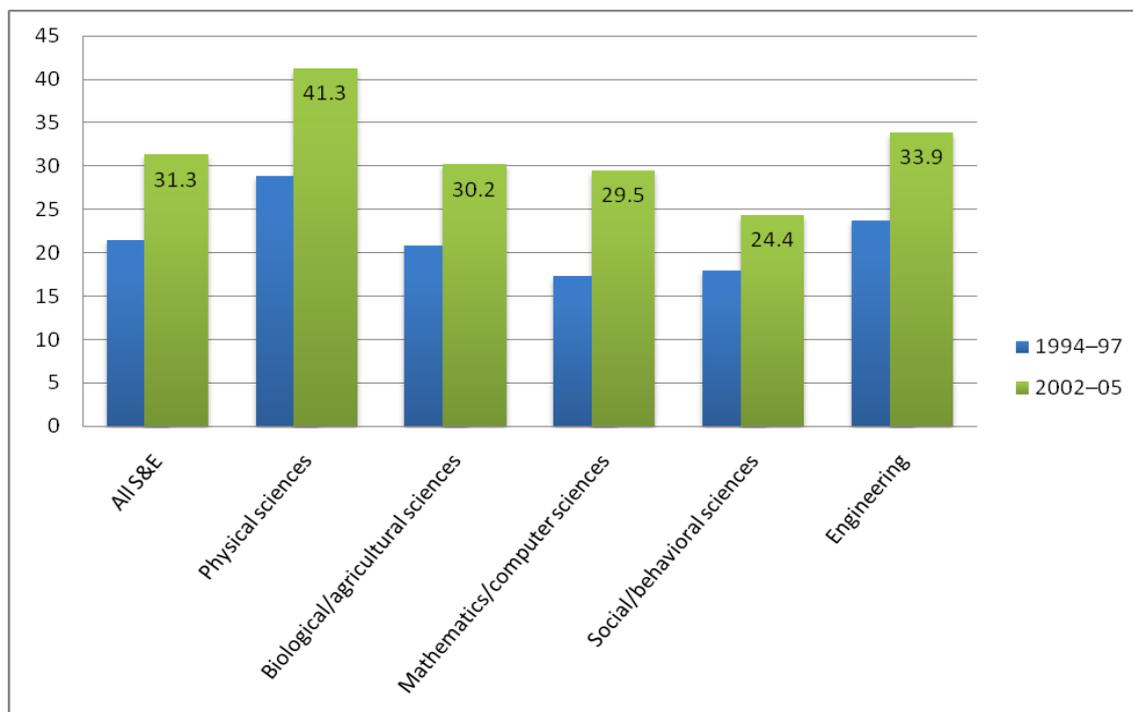
Regarding their willingness to stay in the host country more permanently, there is a strong tendency among Mexican graduate students in the US. to consider this as a very attractive option, and to make definite plans to stay, as figures 3 and 4 illustrate:

FIGURE 5: MEXICAN S&E DOCTORAL RECIPIENTS IN THE U.S., BY PLAN TO STAY, 1994-2005



Source: NSF 2008, Higher Education in Science and Engineering. In Engineering indicators. Downloaded on Jun 25, 2009, from (<http://www.nsf.gov/statistics/seind08/c2/c2h.htm>)

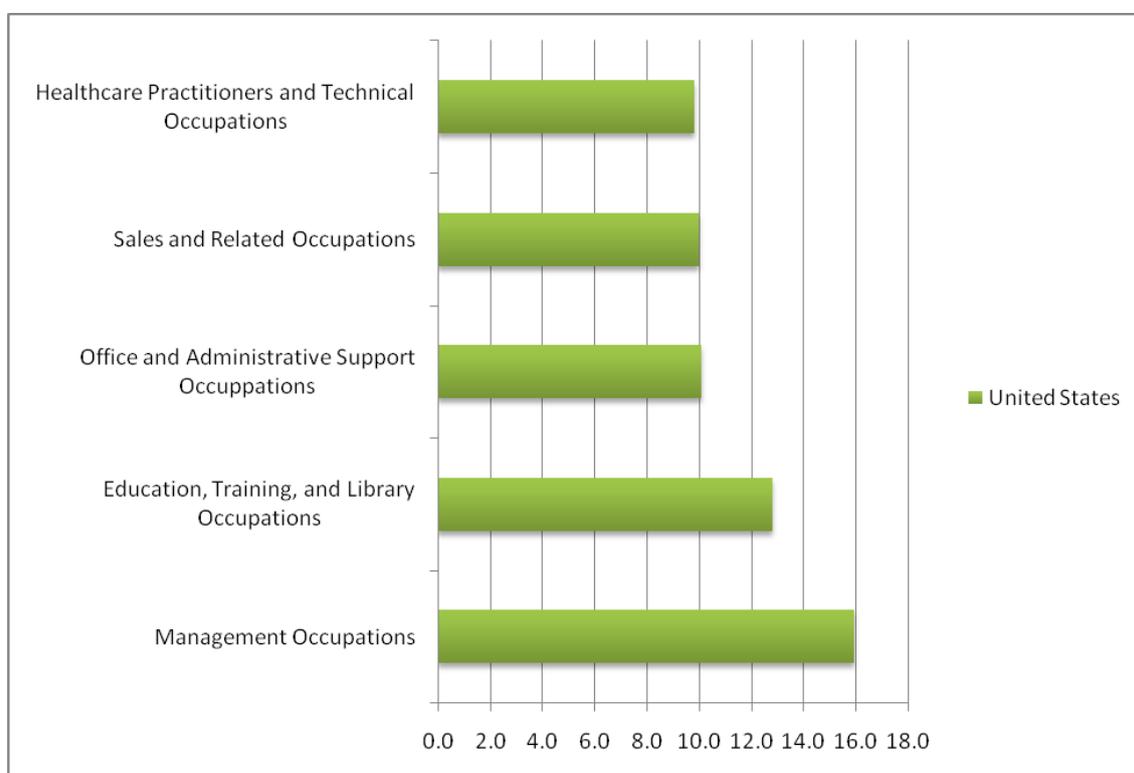
FIGURE 6: PERCENTAGE OF MEXICAN S&E DOCTORAL RECIPIENTS WITH DEFINITE PLANS TO STAY IN THE U.S., BY FIELD, 1994-2005



Source: NSF 2008, Higher Education in Science and Engineering. In Engineering indicators. Downloaded on Jun 25, 2009, from (<http://www.nsf.gov/statistics/seind08/c2/c2h.htm>)

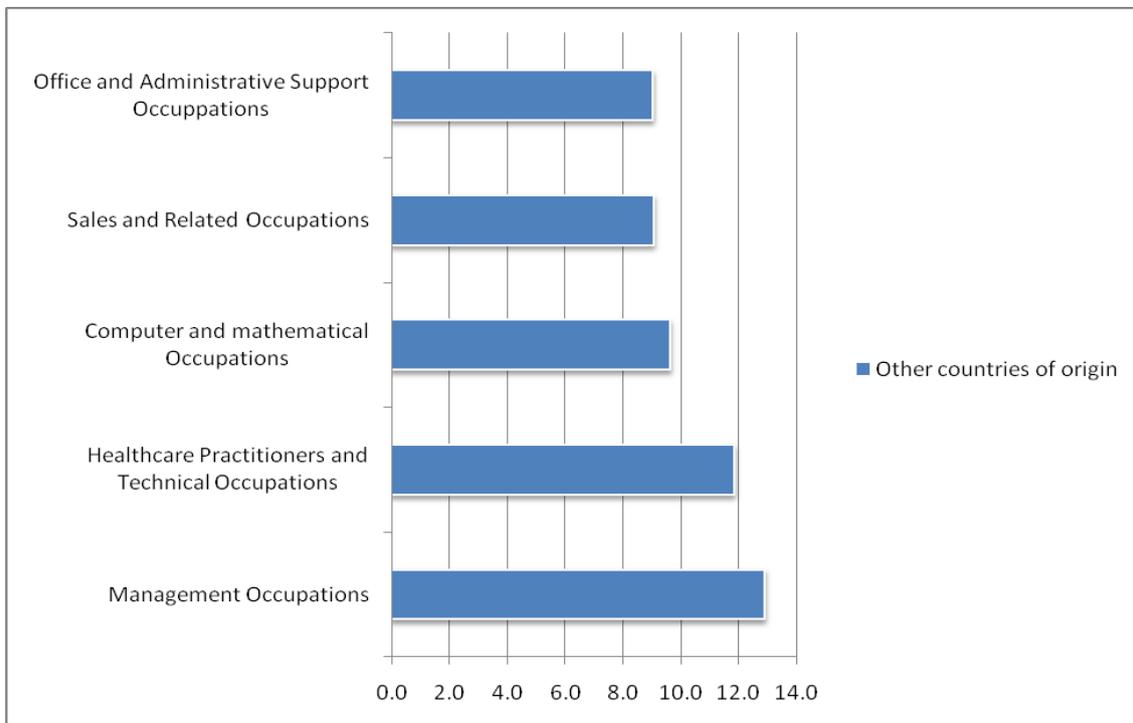
So, considering that from 2002-2005, about 33% of Mexican doctoral recipients in the U.S. had definite plans to stay and almost 40% show a desire to stay it is pertinent to ask, what is life for highly-skilled Mexicans in that country? A look at the salaries and type of occupations of these Mexicans reveals the disadvantaged position that awaits them in general terms. The following graphs show the top five occupations for Mexicans in the U.S. as compared to those of highly-skilled Americans and migrants from other countries of origin. It is remarkable that the occupation with the largest percentage of Mexicans with some higher education is “construction trades,” while this sector does not appear in the top five of Americans and other countries.

FIGURE 7: DISTRIBUTION OF THE U.S. POPULATION WITH A HIGHER EDUCATION DEGREE (ASSOCIATE’S, BACHELOR’S, MASTER’S OR PHD. DEGREE), BY 5 MAIN OCCUPATIONS AND PLACE OF BIRTH, 2008



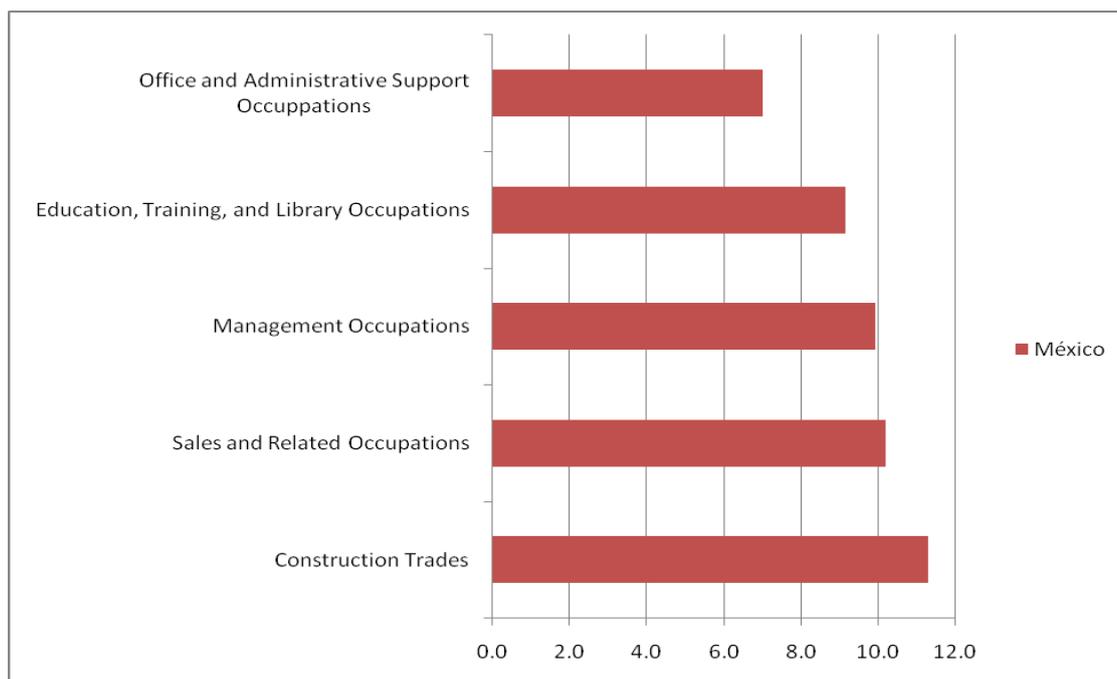
Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement, 2008

FIGURE 8: DISTRIBUTION OF THE U.S. POPULATION WITH A HIGHER EDUCATION DEGREE (ASSOCIATE'S, BACHELOR'S, MASTER'S OR PHD. DEGREE), BY 5 MAIN OCCUPATIONS AND PLACE OF BIRTH, 2008



Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement, 2008

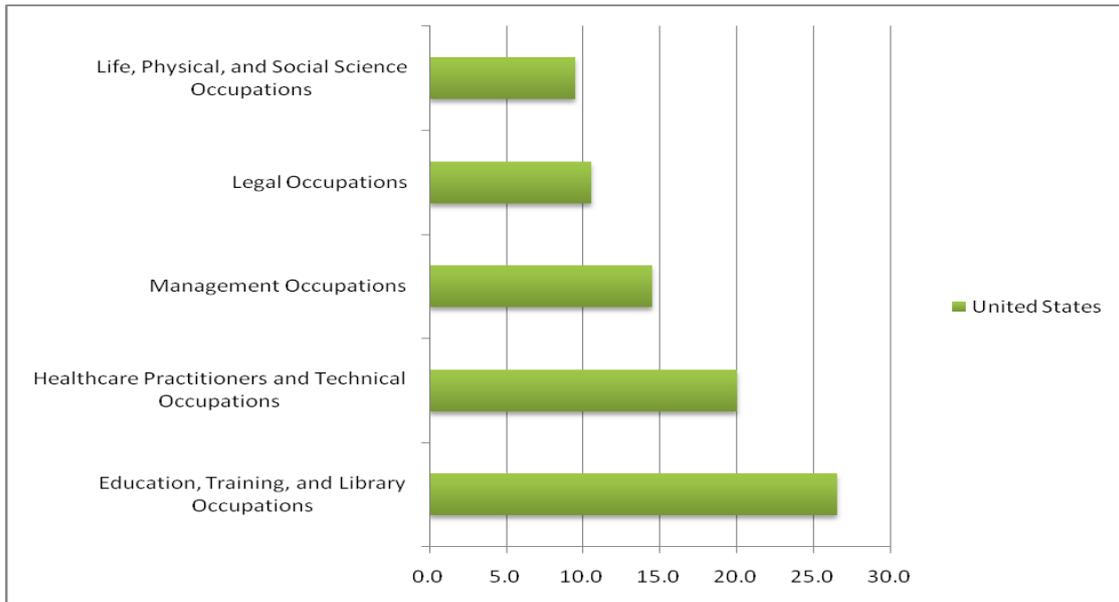
FIGURE 9: DISTRIBUTION OF THE U.S. POPULATION WITH A HIGHER EDUCATION DEGREE (ASSOCIATE'S, BACHELOR'S, MASTER'S OR PHD. DEGREE), BY 5 MAIN OCCUPATIONS AND PLACE OF BIRTH, 2008



Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement, 2008

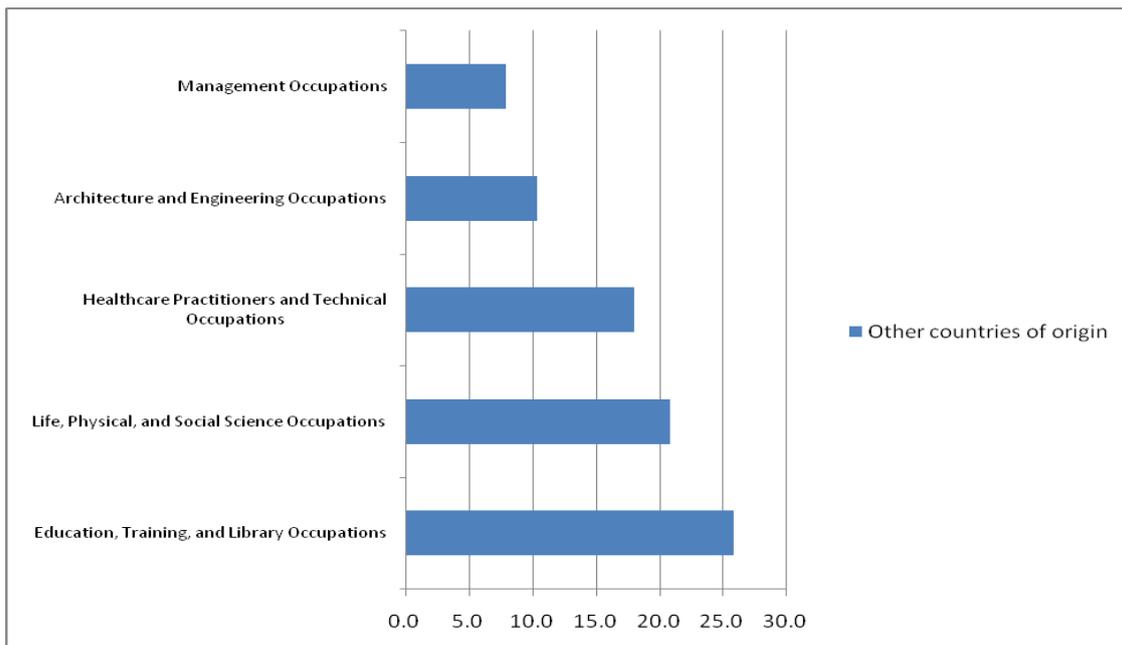
The following graphs present the same data but only for those holding a doctorate degree. In this case “installation, maintenance and installation workers” represent the second more important sector for Mexicans, only after “legal occupations”. While for Americans and other countries the top one sector is “education, training and library occupations” for Mexicans this appear as the 4th sector. Also, sectors like “Life Physical and Social Science Occupations” or “Architecture and Engineering occupations” are not in the top five for Mexicans.

FIGURE 10: DISTRIBUTION OF U.S. POPULATION WITH A DOCTORAL DEGREE, BY 5 MAIN OCCUPATIONS AND PLACE OF BIRTH, 2008



Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement, 2008

FIGURE 11: DISTRIBUTION OF U.S. POPULATION WITH A DOCTORAL DEGREE, BY 5 MAIN OCCUPATIONS AND PLACE OF BIRTH, 2008



Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement, 2008

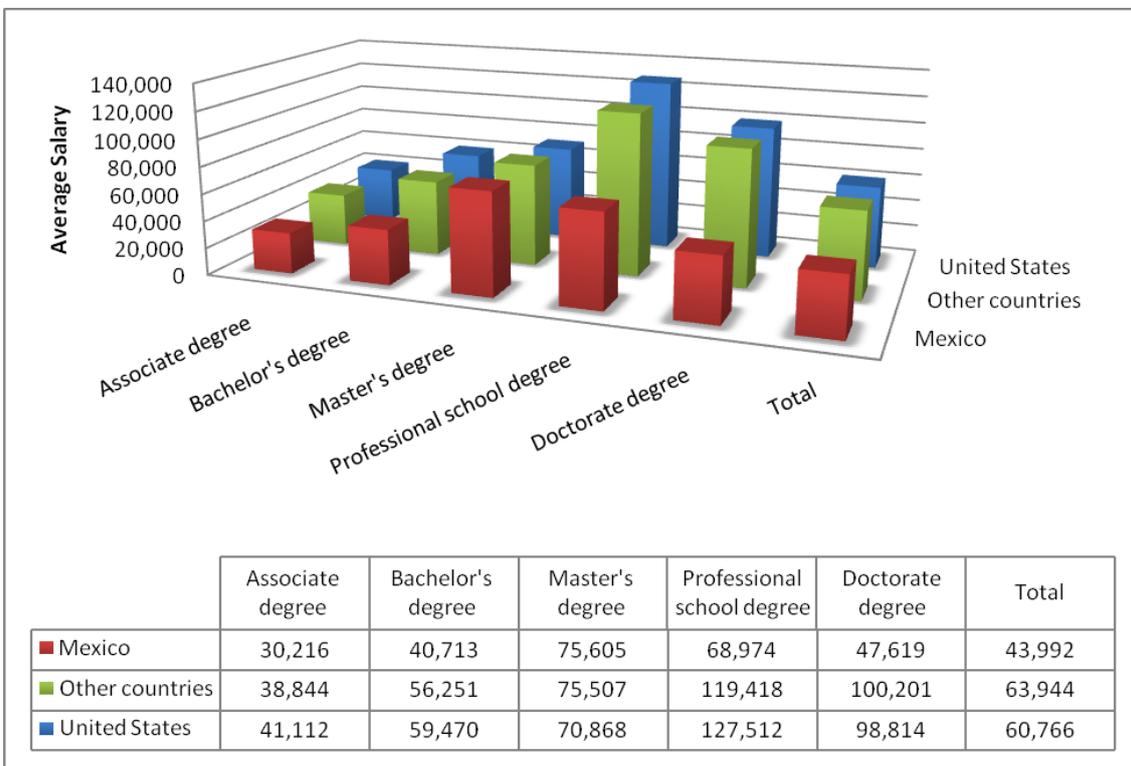
FIGURE 12: DISTRIBUTION OF U.S. POPULATION WITH A DOCTORAL DEGREE, BY 5 MAIN OCCUPATIONS AND PLACE OF BIRTH, 2008



Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement, 2008

In terms of income, the disadvantages for Mexicans seem quite notorious (as figure 11 shows). Only at the level of Masters' level is where Mexicans seem equally the salaries received by US citizens and from other countries. The biggest difference comes with the level of doctorate degree for Mexicans what may let us think about the importance of education for this group of immigrants and keep questioning how to explain this.

FIGURE 13: MEAN INCOME OF ECONOMICALLY ACTIVE POPULATION IN THE U.S., BY EDUCATIONAL LEVEL AND COUNTRY OF ORIGIN, 2008



Source: U.S. Census Bureau, Current Population Survey (CPS), March Supplement, 2008

In the case of Mexico versus the US, the story is about a country with a higher number of immigrants, low skilled and highly skilled but contrary with what the literature suggests, the individuals with more education do not seem to attain that much of an economic advantage over those with less education. The graphs above suggest that the situations of Mexicans in the U.S. are very disadvantaged even for the most educated ones. The disadvantages have to do not only with salaries but also with type of occupations. This data becomes even more relevant if it is taking into consideration that according to the Mexican Under-Secretary of Higher Education, one of every 5 Mexican with a Master's Degree lives in the U.S. and one of three with a Ph.D. degree (Tuirán, 2009, p. 13). Regardless, Mexican students in the US show an increasing desire to stay in this country once they conclude their studies (put the graph here). As a matter of fact, between 1990 and 2000, the percentage of Mexicans professionals that moved to an OECD country increased from 10.4% to 14.3% (Didou, 2009, p. 33). This is where more analysis on brain drain becomes relevant.

Actually, there is a current discussion seeking to substitute the concept brain drain for brain exchange or brain circulation without further discussion. Some of the terms typically found in the literature include brain drain, brain gain, brain waste, brain exchange, brain mobility, brain circulation and brain training. These concepts attempt to illustrate different phenomena related to the mobility of these talented individuals. In the latest books published on this topic, there is a clear tendency for substituting the term "brain drain" for the term "brain exchange." According to Kuptsch and Pang (2006), this debate has to do with whether the person takes an optimistic or a pessimistic view of the issue:

"The optimistic view is that increased flows of talented people will forge closer links between developing and developed countries, which will spur trade and investment, leading to convergence in economic performance and less migration over time. The pessimistic view is that global quest for talent will be won by countries that are already prosperous, which will widen the economic gaps that spur migration, and turn some developing countries into 'emigration nurseries' that produce migrants for foreign jobs" (Kuptsch and Pang, 2006 p.1)

Other authors consider the debate has to do with creating win-win situations for developing countries and taking advantage of this mobility. Examples of this win-win situations will be in terms of "remittances flows and by the potential of mobilization of fresh capital accumulated by emigrants who may want to invest in their home countries" (Solimano, 2008, p. xvii and p. 12). On the other hand, Bhandari R. & Blumenthal (2009) point out that instead of the use of brain drain and brain gain they prefer "the terms "brain circulation" or "brain exchange" to account for the increasingly multidirectional nature of mobility and the growing awareness

that such mobility patterns or exchanges are mutually beneficial for sending and receiving countries, albeit in varying ways" (p. 8).

These ideas are interesting and they may have more application in other cases. However, after reviewing the available data of student mobility in Mexico and the U.S., the idea of just substituting a term because its emphasis is on in the negative effect of the mobility of talents from developed countries to developing countries does not seem too solid. One particular problem with the successful cases that are used to argue in favor of substituting these terms is that these cases represent the exception, not the rule. These cases are mostly located in China and India and have to do with very successful communities (graduated from some of the most prestigious U.S. universities) and related to the fields of computing and information technologies. In fact, the winning cases represent good news in terms of possibilities for other countries, but reality tells us a different story for most developing countries. The advantages for these countries on having leaving their most educated individuals have not been very obvious in the majority of the cases. Analyzing under what circumstances is Mexico and the US regarding brain drain and exchange seems as a central research topic to pursue.

Future Trends to Research

In the previous section of this report, three central topics in the debate of graduate-degree seeking student mobility were presented. The first one is about understanding better the importance of graduate students worldwide. The second is about the lack of theoretical constructions to interpret this phenomenon; and the third one is about the debate between the terms brain drain and brain exchange. Naturally the future trends to research go beyond these three topics but these three include some of the most relevant topics that need the attention of researchers and practitioners.

The future research trends are as follows:

- ❖ Generating accurate data that allows establishing solid comparisons between the Mexican and U.S. student mobility. The lack of information goes from knowing more precise numbers on the flows and stocks, the differentiation between degree seeking and non-degree seeking students and graduate vs. undergraduate students, sources of financing (sponsored versus non sponsored students), to the fields of study and types of receiving and sending higher education institutions.
- ❖ Seeking to create new ways to analyze the impact of student mobility to the medium and long terms. More longitudinal research is required on this topic.
- ❖ Understanding the different circumstances under which Mexican and U.S. students make the decision to go to the neighbor country to obtain an educational experience.
- ❖ Expanding the traditional and dominant approaches to explain the phenomenon of student mobility (such as the push-pull model). There is a need in this area to conduct more research emphasizing the role of the agency in students, higher education institutions and educational systems.
- ❖ Analyzing what is the importance of graduate students for the national development of asymmetric countries like Mexico and the US. It seems necessary to go beyond the traditional assumptions on the importance these students have and conducting research on specific contexts.
- ❖ Conducting research on the different ways Mexico has been affected by the phenomenon of brain drain and the several possibilities both countries could explore to reduce its negative effects in the country.

- ❖ Developing new interpretations on the empirical case of Mexico and the US highly skilled migration as an example of relationships between two neighbor (and very contrasting) countries.

Conclusions

It is clear the U.S. and Mexico has a very asymmetric relationship in terms of degree-seeking students. The data presented in this report shows that the student mobility is no different from other areas of relationships between these two countries.

The most important conclusion of this report is proving the importance on developing research projects to continue analyzing this topic. Many more research and information are needed to have a basic understanding on student mobility between Mexico and the U.S. There are many pending questions that the revision of 33 related websites and a large number of data bases cannot answer. Not only the basics of the numbers reported by different institutions, but the estimations in flows and stocks, the proportions on degree and non-degree seeking, the sources of financing (sponsored versus non sponsored students), the fields of study, the type and characteristics of recipient institutions, among others.

Higher education institutions and organizations from the two countries must make a major effort to promote research on this topic. It seems ideal to be able to establish mutual collaboration on conducting joint research on this topic. Bi-national cooperation seems to be the main answer to solve the lack of information and data between the two countries. This may require the participation of specialized organizations, governmental and non-governmental, as well as higher education institutions and affiliate organizations. The initiative taken by COMEXUS in sponsoring this study should be taken as part of these efforts.

In terms of both governments, it seems the main challenge is to build an international fair migration regime. Some experts even suggest that "allocating temporary work permits to workers from poorer countries might yield U.S.\$200 billion for the developing world, much greater than the estimate of gains expected from the current trade reform agenda" (International organization for Immigration, 2002, p. 11). It would be in the benefit of both countries to find some consensus in ways to cooperate and coordinate the migration situation of low and highly skilled Mexicans in the US. Although this report deals exclusively with the situation of the latter was proved that the situation of these workers is related to the general Mexican migration in the U.S. The authors in this report wish this work would contribute with an effort in this sense.

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Appendix 1

The two research reports that analyze the available information on academic mobility between Mexico-U.S.A. can be accessed at www.comexus.org.mx. They include the full description of the following electronic sources, their characteristics, contradictions and limitations. The 33 website reviewed are:

1. Internacional databases

- 1.1 International Association of Universities (IAU)
 - 1.1.1 IAU Global Survey Report
- 1.2 World Bank
 - 1.2.1 Panel Data on International Migration, 1975-2000
 - 1.2.2 Measuring international skilled migration: New Estimates Controlling for age of entry, 2006
 - 1.2.3 Measuring Brain Drain by Gender
 - 1.2.4 Medical Brain Drain: Physicians' Emigration Rates 1991-2004
- 1.3 Organization for Economic Co-operation and Development (OECD)
 - 1.3.1 Programme on institutional management in higher education (IMHE)
 - 1.3.2 The centre for educational research and innovation (CERI)
 - 1.3.3 OECD.stat
 - 1.3.4 The database on immigrants in OECD countries (DIOC)
 - 1.3.5 International migration data 2008:
- 1.4 International Labour Organization (ILO)
- 1.5 UNESCO
 - 1.5.1 Institute for Statistics
 - 1.5.2 Unesco portal on higher education institutions

2. Regional or bilateral databases

- 2.1 Comisión Económica para América Latina y el Caribe (CEPAL)—Investigación de la migración internacional en Latinoamérica (IMILA)
 - 2.1.1 Población censal nacida en América Latina y el Caribe por país de residencia, según país de nacimiento
 - 2.1.2 Población nacida en el extranjero de 12 años y más no económicamente activa, 1990 y 2000.
- 2.2 Comisión México-Estados Unidos para el Intercambio Educativo y Cultural (COMEXUS)
 - 2.2.1 COMEXUS Reporte Académico Anual 2007
- 2.3 Consorcio para la Colaboración en la Educación Superior en América del Norte (CONAHEC, en inglés)
 - 2.3.1 Programa de intercambio estudiantil
- 2.4 Eurostat
 - 2.4.1. Education data
 - 2.4.2 Training data
- 2.5 Instituto Internacional de la UNESCO para la Educación Superior en América Latina y el Caribe (IESALC)
- 2.6 Programa TIES-ENLACES (Training, Internships, Exchanges, and Scholarships, en inglés)
 - 2.6.1 U.S.-Mexico Training, Internships, Exchanges, and Scholarships Initiative (TIES): A Model for Success
 - 2.6.2 Subprograma de becas administradas por la Cooperative Association of States for Scholarships (CASS)
- 2.7 Programa para la Movilidad en la Educación Superior en América del Norte (PROMESAN)
 - 2.7.1 Nuevas Becas para la Educación Superior, SEP, Subsecretaría de Educación Superior

2.7.2 Program for North American Mobility in Higher Education, Fund for the Improvement of Postsecondary Education (FIPSE).

3. U.S. databases

- 3.1 Center for International Migration and Integration (CIMI)
- 3.2 Department of Homeland Security (DHS).
 - 3.2.1 Nonimmigrant admissions (I-94 only) of Mexicans by class of admission
- 3.3. Higher Education Research Institute (HERI)
 - 3.3.1 Cooperative institutional research program data archives
- 3.4 Institute of International Education (IIE)
 - 3.4.1 IIE network
 - 3.4.2 Open doors
 - 3.4.3 Atlas of student mobility
- 3.5 Interagency Working Group (IAWG)
 - 3.5.1 Annual reports
 - 3.5.2 Inventories of programs
- 3.6 National Association of International Educators (NAFSA)
- 3.7 National Center for Education Statistics (NCES)
 - 3.7.1 Digest of education statistics
 - 3.7.2 Projections of education statistics
 - 3.7.3 The condition of education
 - 3.7.4 International indicators and assessment
 - 3.7.5I PEDS data center
- 3.8 National Science Foundation (NSF)
 - 3.8.1 NSF statistics : education: international
 - 3.8.2 Foreign recipients of U.S. S & E doctorates, by country/economy of origin: 1985-2005
 - 3.8.3 Foreign undergraduate student enrollment in U.S. Universities, by field and selected
 - 3.8.4 places of origin: April 2006 and 2007
 - 3.8.4 Plans of foreign recipients of U.S. S & E doctorates to stay in united states, by field and place of origin: 1994-2005
- 3.9 Pew Hispanic Center
 - 3.9.1 Statistical portrait of the foreign-born population in the united states
 - 3.9.2 Mexican immigrants in the United States
 - 3.9.3 U.s. Population projections: 2005-2050
- 3.10 U.S. Census Bureau
 - 3.10.1 Fedstats
 - 3.10.2 Fact finder
 - 3.10.3 U.S. Percentage of people foreigners born in Mexico
 - 3.10.4 Census 2000 datasets
 - 3.10.5 United states foreign-born population
- 3.11 U.S. Citizenship and Immigration Services
 - 3.11.1 Temporary Migration to the United States: Nonimmigrant Admissions under U.S. Immigration Law
- 3.12 U.S. Immigration and Customs Enforcement (ICE)
 - 3.12.1 Sevis by the numbers
 - 3.12.2 Department of state (dos). Office of private sector exchange
 - 3.12.3 Sevis II

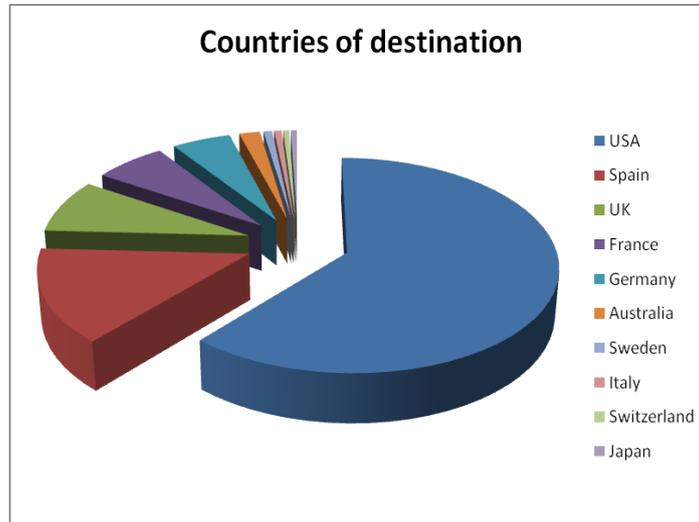
4. Mexican databases

- 4.1 Asociación Mexicana para la Educación Internacional (AMPEI)
 - 4.1.1 Catálogo electrónico de instituciones mexicanas que ofrecen programas para estudiantes internacionales

- 4.2 Asociación Nacional de Universidades e Instituciones de Educación Superior (ANUIES)
 - 4.2.1 Estadística 2006-2007
- 4.3 Consejo Nacional de Ciencia y Tecnología (CONACYT)—Sistema Integrado de Información sobre Investigación Científica y Tecnológica (SIICYT)
 - 4.3.1. Becarios vigentes
 - 4.3.2 Becas en números
 - 4.3.3 Series estadísticas
 - 4.3.4 Entidad federativa
- 4.4 Consejo Nacional de la Población (CONAPO)
 - 4.4.1 Extranjeros residentes en México por características seleccionadas y país de origen, 1990, 2000
- 4.5 Fundación Magdalena o. Vda. De Brockmann (MOB)
- 4.6 Instituto de los Mexicanos en el Exterior
 - 4.6.1 Red de talentos
- 4.7 Instituto Nacional de Estadística y Geografía (INEGI)
 - 4.7.1 Los Extranjeros en México (2007)
- 4.8 Instituto Nacional de Migración (INM)
 - 4.8.1 Aspectos generales de la inmigración actual en México: 2000
 - 4.8.2 Estadísticas migratorias 1989-2008
 - 4.8.3 Registro Nacional de Extranjeros
- 4.9 Programa de Mejoramiento del Profesorado (PROMEP)
 - 4.9.1 PROMEP en cifras
- 4.10 Secretaría de Educación Pública (SEP)
 - 4.10.1 Programas de Becas de la SEP
 - 4.10.2 Beca complementaria para mexicanos de posgrado
 - 4.10.3 Padrón Nacional de Becarios
 - 4.10.4 Mexicanos en el extranjero

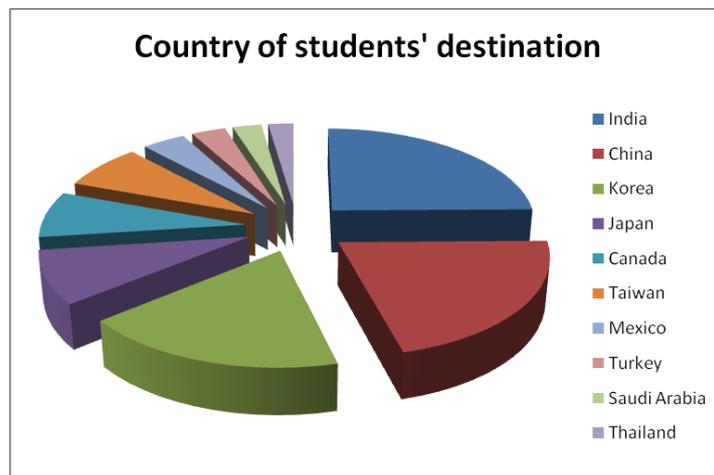
Appendix 2

FIGURE 14: COUNTRIES OF DESTINATION FOR MEXICAN STUDENTS



Source: IIE (2009). Atlas of Student Mobility, retrieved on line July 12, 2009, on: <http://atlas.iienetwork.org>

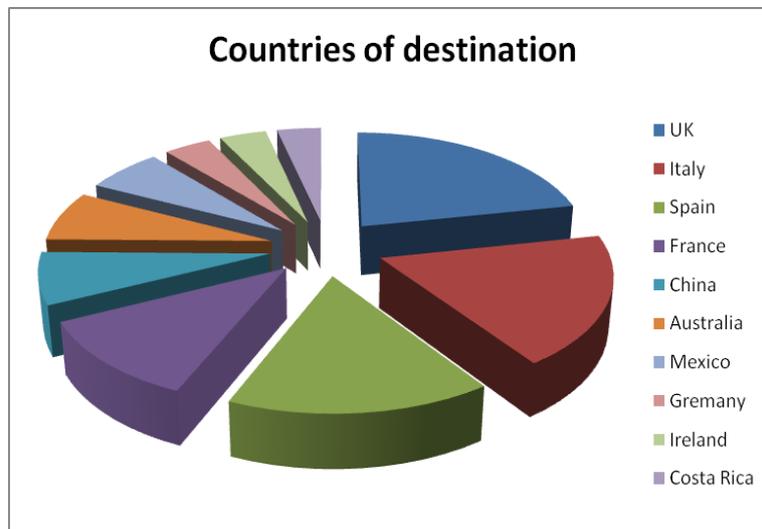
FIGURE 15: COUNTRIES OF ORIGIN OF INTERNATIONAL STUDENTS IN THE US



Source: IIE (2009). Atlas of Student Mobility, retrieved on line July 12, 2009, on: <http://atlas.iienetwork.org>

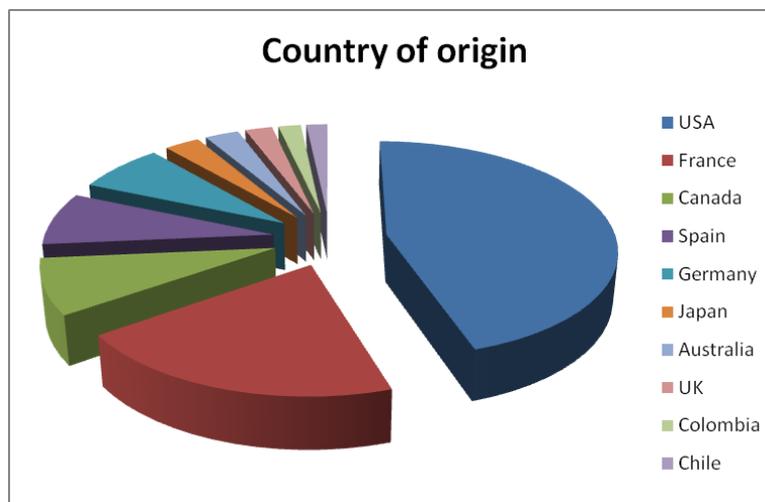
Appendix 3

FIGURE 16: COUNTRIES OF DESTINATION FOR USA STUDENTS



Source: IIE (2009). Atlas of Student Mobility, retrieved on line July 12, 2009, on: <http://atlas.iienetwork.org>

FIGURE 17: COUNTRIES OF ORIGIN OF INTERNATIONAL STUDENTS IN MEXICO



Source: IIE (2009). Atlas of Student Mobility, retrieved on line July 12, 2009, on: <http://atlas.iienetwork.org>