

Skilled Migration from Mexico: Trends, Concerns, and Outlook

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ABSTRACT

Migration from Mexico to the United States has traditionally been predominantly low-skill. But in recent years the skilled fraction of Mexican workers in the United States has grown substantially. Is this a temporary trend, produced by the recent crisis, or is it an indication of future trends as advanced economies work to attract skilled migrants? I argue here that the rate of skilled migration from Mexico is not high in comparison with skilled migration from other regions and countries, that the majority of recent increases are likely temporary, and that US immigration policy has not been a key factor underlying this phenomenon.

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1. Introduction

Many Americans have an image of migration from Mexico to the United States. It is the agricultural worker harvesting grapes or the nanny taking care of children, both with hardly any formal education. But in the last few years an important trend has emerged that contradicts this image. A growing percentage of Mexican workers in the United States have studied at the university level. This trend has been accelerated by the economic crisis—from which the region is gradually recovering.

The goal of this article is to establish the basic facts about trends in skilled migration from Mexico to the United States from an economist's point of view, and to offer a conceptual framework to suggest fruitful questions for future research and policy.

2. Skilled Migration from Mexico to the United States

It is clear that Mexico-US migration has traditionally comprised mostly low-skill work. But it is also clear that this is not mainly due to any strong self-selection of low-skill migrants.

Self-selection among Mexico-US migrants has been greatly debated in academic economic journals. This literature begins with the Borjas (1987) hypothesis that the least-skilled self-select into migration because they benefit the most in a context of high income inequality in the origin country. The first and most influential empirical studies found the opposite: a moderate trend towards the self-selection of the most highly skilled, among other reasons because they are the most capable of overcoming credit constraints (Chiquiar and Hanson 2005, Cuecuecha 2005, Mishra 2007). The most recent evidence, using more representative datasets, suggests on the contrary that there is not a strong tendency toward self-selection, neither for the most skilled or the least skilled. Mexican migrants in general appear to come roughly from the middle of the skill distribution (Orrenius and Zavodny 2005, Ibararán and Lubotsky 2007, Fernández-Huertas Moraga 2011).

This opens up the possibility that future Mexico-US migration will be increasingly skilled. If the migrant comes from the middle of the skill distribution, the tendency of the most skilled to migrate can grow as the skill distribution shifts. Demographic changes in Mexico and immigration policy in the United States can equally favor skilled migration in the future (Zúñiga and Molina 2008, Borjas and Friedberg 2009, Chiquiar and Salcedo 2013). And this phenomenon can reinforce itself—since as more skilled workers migrate, international networks of skilled Mexicans become stronger, facilitating the migration of other high-skill Mexicans (McKenzie and Rapoport 2010).

A possible increase in the rate of skilled migration brings with it concerns among Mexican policymakers. President Peña Nieto has emphasized that “we need to curb the brain and talent drain in our country and this will be a priority in my government.” In 2009 the then Deputy Secretary of Higher Education, Rodolfo Tuirán, declared that the exodus of Mexican talent had cost the country more than 100 billion pesos. Francisco Marmolejo, the then Executive Director of the Consortium for North American Higher Education Collaboration (CONAHEC), wrote in 2010, “it is expected that in spite of the current economic crisis, pressures in the United States will continue facilitate the selection of individuals with advanced skills, which will contribute to exacerbating the flight of Mexican talent.”¹

Various Mexican researchers have also expressed concern over this phenomenon. Camelia Tigau of UNAM describes Mexico as “the fourth largest exporter of brains in the world, only behind Great Britain, the Philippines, and India ... the country loses its investment in the education of Mexicans abroad that do not return.” Alejandro Díaz Bautista of the College of the Northern Border (COLEF), and member of the National Council of Science and Technology, has said, “There is no doubt that this exodus of brains constitutes a phenomenal economic loss for Mexico.”²

On the other hand, there is also a school of thought at the national and international level that does not consider skilled migration a wholly and necessarily negative process. The same Rodolfo Tuirán has said, “Let us not see emigration as a loss, like a zero-sum game in which we lose and recipient countries win. We must look at it differently in a global context [...]”³ In the same sense, recent economic research provides a broader vision of the phenomenon. The growth of skilled migrant networks, as much nationally as internationally, can increase the yield of human capital investments. And the resulting remittances can alleviate credit constraints that impede education. In other words, skilled labor mobility interacts with the incentives to invest in education in a way that can convert the Mexican ‘brain drain’ into a ‘brain gain’ (Boucher, Stark and Taylor 2009; Clemens 2009; McKenzie and Rapoport 2011).

The truth is that we social science researchers do not understand migrants, their decisions, and the effects of these decisions very well. These are extremely complex phenomena, with extremely complex causes and effects—and unpredictable consequences.

In the following section I approach the issue with three questions to establish the basic facts about skilled migration.

¹ “Peña Nieto busca dar más recursos a ciencia para evitar ‘fuga de cerebros’”, *CNN México*, December 13, 2012; “Pierde México más de \$100 mil millones por la fuga de cerebros”, *La Jornada*, March 3, 2009. Francisco Marmolejo, 2010, “Redes, movilidad académica y fuga de cerebros en América del Norte: El caso de los académicos mexicanos,” *Boletín IESALC Informa de Educación Superior*, March 2010 No. 204.

² “México, cuarto lugar en exportación de cerebros” *Boletín UNAM-DGCS-371 Ciudad Universitaria*, June 11, 2012. “Cuesta a México 100 mil mdp fuga de cerebros: SEP”, *El Sol de Tijuana*, March 5, 2009.

³ “Fuga de cerebros aumenta cada año”, *Milenio*, March 3, 2009.

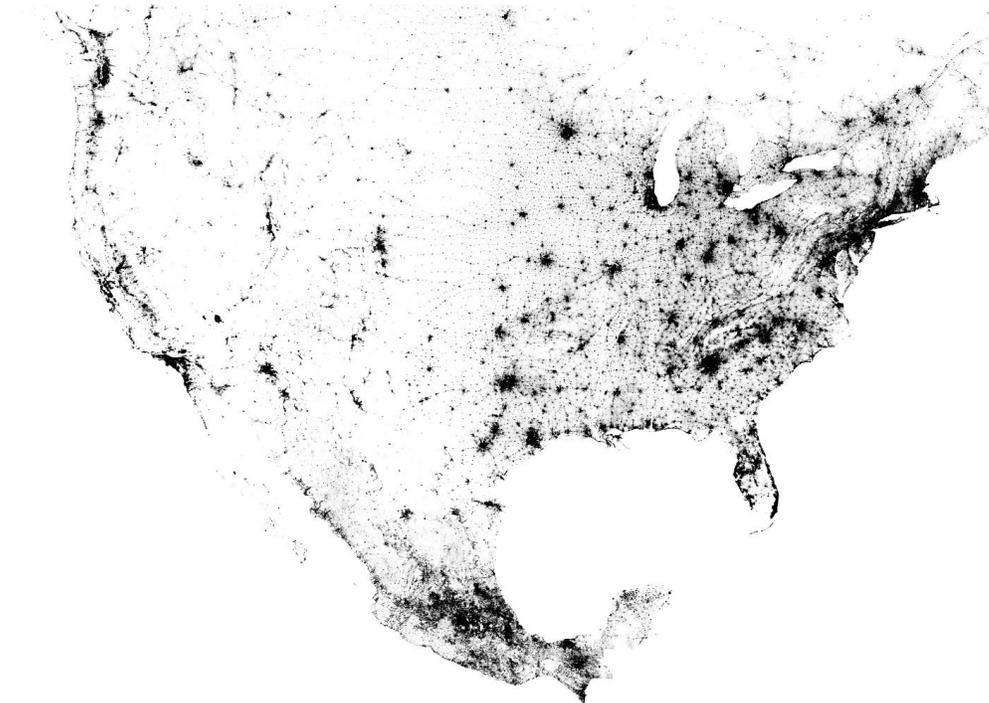
3. Three questions about skilled migration from Mexico

My starting point is to pose three provocative questions that put skilled Mexican migration into perspective, in the interest of questioning what I consider the common point of view about the phenomenon.

3.1. Why is the rate of skilled migration high?

Migration is nothing more than the decision to live in one place instead of another. And the basis of this decision can clarify why so many people make the decision to move. Figure 1 offers an almost unprecedented view of the population of North America. It shows 454 million dots, in which each point represents a single person whose place of residence is identified in the population censuses of Mexico, the United States, and Canada. Among the most obvious aspects of the map is the fact that the spatial configuration of human settlement *within each of the countries* is not random. Rather, it follows certain definite natural patterns and is extremely heterogeneous. It is shaped by geography, prior agglomeration, distance from one's birthplace, economic opportunity, family ties, and many other factors besides migration policy—which does not exist within countries.

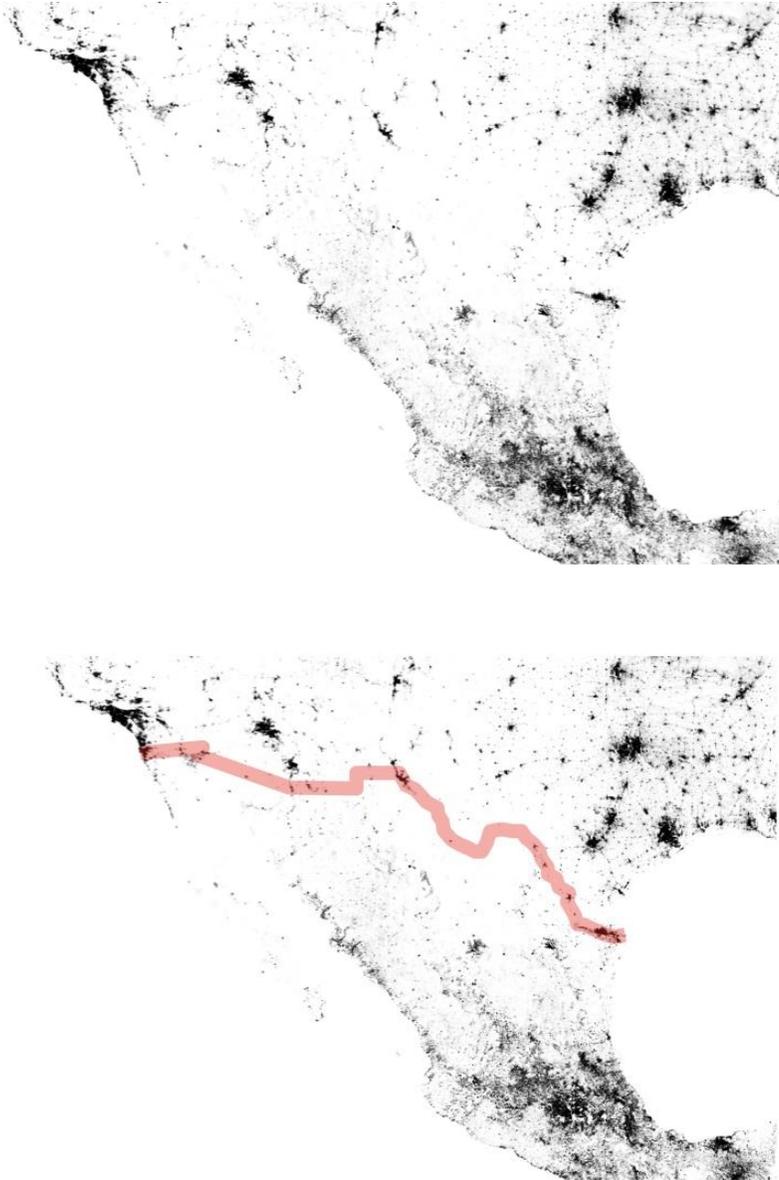
Figure 1: A map of North America, where each dot represents one person



Map developed from a fusion of geographically-classified data in the Mexican, US, and Canadian population censuses, in which each black point corresponds to one person. Source: Brandon Martin-Anderson of the MIT Media Lab. Public domain.

What remains clear is that the international border and the policies that accompany it are not in themselves among the principal determinants of the decision to live in one place or another. Figure 2 enlarges the map, showing the same area with and without the international border. Without the reference line, the border is nearly invisible. To a Martian arriving on Earth, it would be hard to locate the border based only on where the people lived. Their decisions about where to live evidently find their motives to great extent in other aspects of life.

Figure 2: The border is barely noticeable



Map developed from a fusion of geographically-classified data in the Mexican, US, and Canadian population censuses, in which each black point corresponds to one person. Source: Brandon Martin-Anderson of the MIT Media Lab. Public domain.

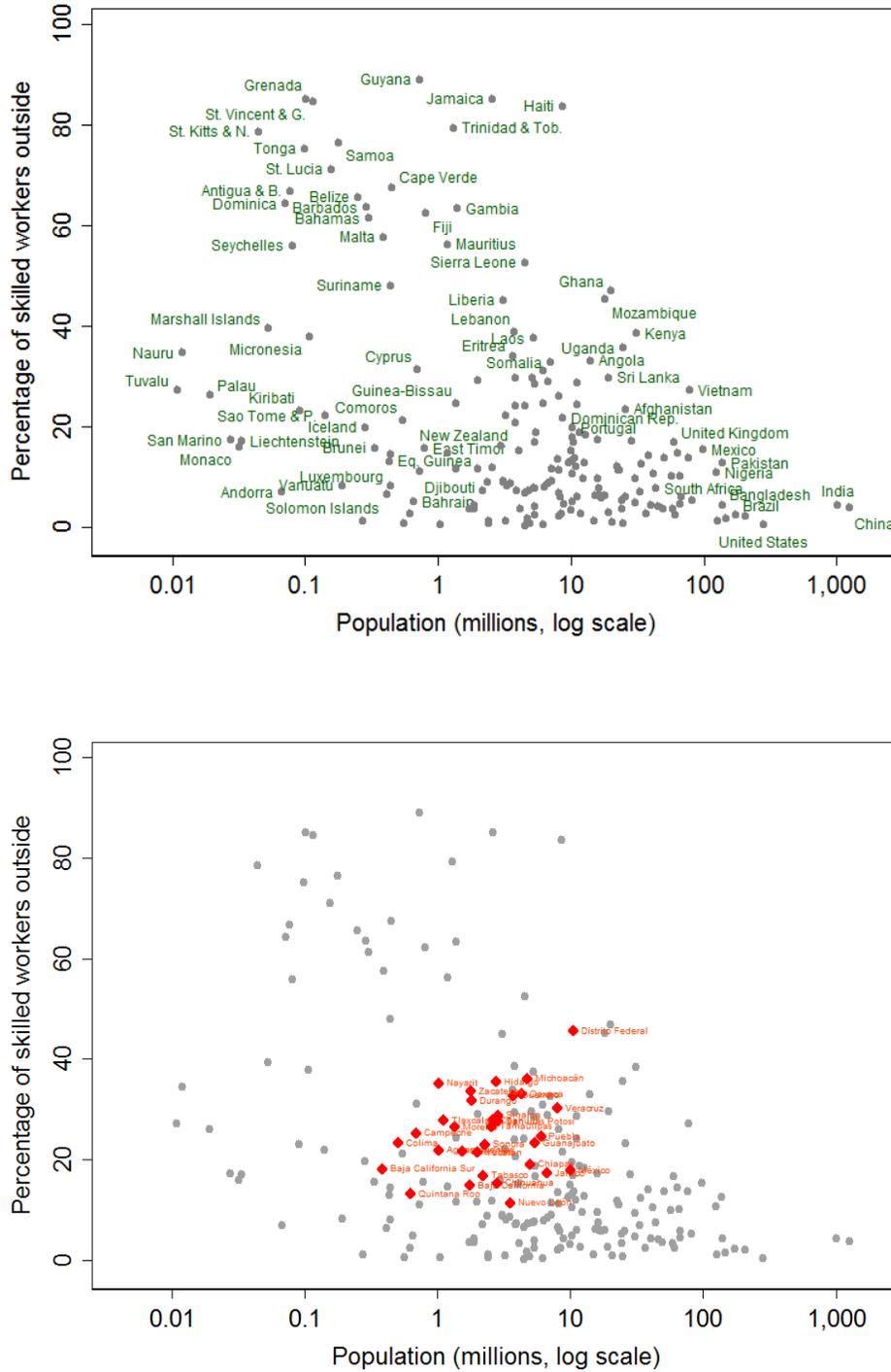
Additionally, think about all of the factors that determine the decision to invest in education and the decision of where to use one's education. The decisions are closely linked. The more education one acquires, generally the fewer positions there are in a particular geographic area that are suited for the practice of the acquired skill. In almost all towns of a certain size there are various positions suitable for someone with only a secondary-school education. For those with university training opportunities are much more limited, and the best positions are often found in cities or in distant regions. For people with postgraduate studies, the options in a particular place are even further reduced.

An extreme example that illustrates this point is the case of Arthur Lewis. Lewis was born in the small island nation of Saint Lucia, and won the Nobel memorial prize in economics for his work in England and the United States. A *local* professional career would not have made any sense for him. If he had known that he could not invest in education, he might not have left Saint Lucia, and likewise, if he had known that he could not leave Saint Lucia, he would have had fewer incentives to invest in a doctorate. This logic functions independently of international borders, which generally were fixed by historical accidents and not by a detailed consideration of the needs of skilled people.

Once we take these considerations into account, it should not surprise us that skilled migration rates between countries are very similar to the skilled migration rates *within* countries. The upper panel of Figure 3 shows on the vertical axis, for all countries in the world, the percentage of people with a university education born in each country that live outside, in another country (where "another" means a country in the OECD). On the horizontal axis is the total population of the country. Clearly the skilled migration rate is generally higher in the smallest, most isolated, and poorest countries, although with much variation. Mexico appears with about one-fifth of its university-educated population living abroad.

The lower panel of Figure 3 shows the same statistics for the 31 Mexican states and the Federal District. In this panel "outside" is redefined as being born in a particular state and having a university education, but living in another state of Mexico, different from one's state of birth. That is, the points represent the tendency of skilled people to move at the national level. These points are superimposed on the same points from the upper panel of the figure, which represent international movement. We do not observe a greater tendency for skilled workers to migrate between countries than between Mexican states. If anything, the tendency to migrate at the national level is *greater* than the average for countries that have the same size as Mexican states. The same pattern is observed around the world, including, for example, skilled migration between states and provinces of the United States, Brazil, the Philippines, and Kenya (Clemens 2009).

Figure 3: Percentage of skilled workers found “outside”—between countries, and between Mexican states



Sources: Here *skilled* means *with a university-level education*. Statistics at the global level come from Docquier and Marfouk (2006). In these statistics, “outside” means “living abroad in an OECD country”. Statistics from Mexico calculated from microdata from the 2010 Mexican population census, obtained through IPUMS-International.

The global uniformity of this process invites us to reflect on how high the skilled migration rate from Mexico to other countries truly is. The tendency for skilled people to look for opportunities outside of Mexico is not proportionally higher than the tendency of skilled people to look for opportunities outside of Durango, Chiapas, or Michoacán.

No one would be prepared to define the movement of a skilled person from Chiapas as purely and simply a *cost* or *harm*. Obviously, the possibility of working in places outside of Chiapas is part of the reason why young people acquire education in Chiapas, especially education at the tertiary level. Obviously, mobility involves basic matters of human rights. Obviously, the movement of people from Chiapas to other places brings ideas, business, money, and technology to Chiapas.

The same forces act at different scales and at different distances from the birthplace of a person. They are not necessarily weaker across international borders than across interstate borders. On the contrary, all of these forces can be even more important at the international level, where opportunities are even greater. If movement from Chiapas were defined as a problem, and consequently interrupted, the losses for people from Chiapas—and for Chiapas itself—would be clear. Thus, we must consider with a critical perspective any attempt to *define* the movement of people as a fundamental problem to solve, a sad implication of terms like “brain drain”.

There is at least one sense in which international mobility is quite different from national mobility: in the fiscal sphere. The financial relationships between the government of Chiapas and the Mexican national government are very different from the financial relationships between the governments of Mexico and the United States. The former were designed to accommodate mobility, the latter were not. There are no mechanisms to prevent the movement of people from Chiapas within Mexico, but there are mechanisms to insure that the cost of education of the people from Chiapas that move is shared, and that it does not fall back solely on the rest of Chiapas. We will return to this subject below.

3.2. Why is the skill fraction among Mexico-US migrants rising?

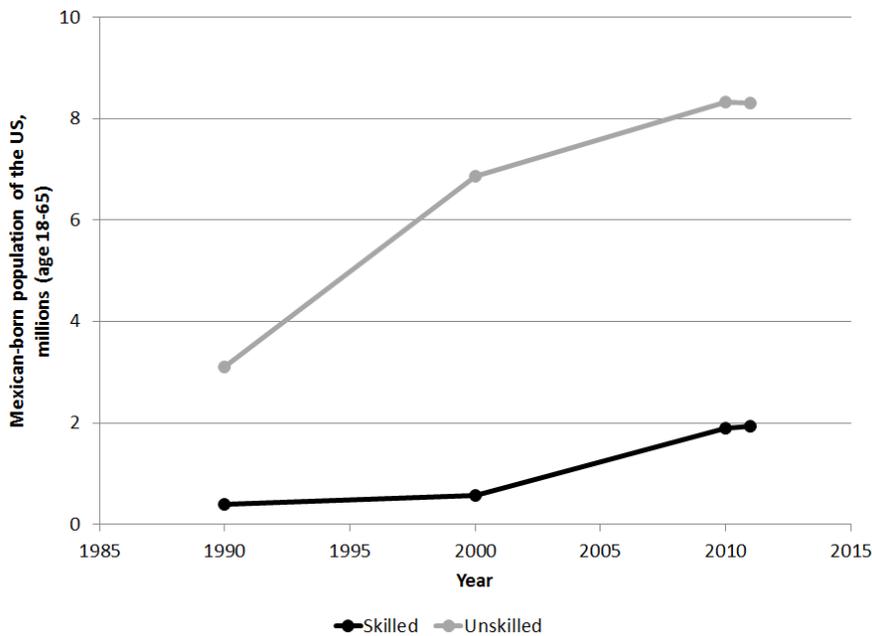
Skilled workers represent a growing portion of the people born in Mexico who work in the United States. Figure 4 confirms this trend, with statistics calculated from the microdata of the American Community Survey (ACS). Between 2000 and 2010, the skilled share grew from 8 percent to 19 percent. Such figures indicate that perhaps some important aspects of skilled migration from Mexico have changed.

Or perhaps not. Table 1 decomposes this change into explained and unexplained parts. The result is that two-thirds of this growth can be attributed to three natural and intuitive changes.

First, 29.1 percent of the growth in the skilled share of these workers is due to the fact that many of them arrived in the United States as minors and attended school in the United States, not in Mexico. Second, 28.5 percent of the growth can be attributed to the fact that

the unemployment rate among unskilled Mexicans grew much more between 2000 and 2010 than the unemployment rate among skilled Mexicans. This was also the general experience of all workers in the United States during the economic crisis that began in 2007. This trend tends to favor skilled migration relative to unskilled migration, but it is reasonable to presume that at the end of the crisis, this tendency will reverse. Third, 10.4 percent of the growth can be attributed to the fact that the skill rate of the Mexican labor force generally grew during the same period, as suggested by Chiquiar and Salcedo (2013).

Figure 4: More and more of the Mexican workers in the US are skilled



Here *skilled* means *with any form of tertiary education, including associate degrees*. Source: American Community Survey (ACS) microdata.

In total, around two thirds of this phenomenon can be easily explained with factors that do nothing to alter the fundamental dynamic that drives skilled migration. As Mexicans that arrived in the United States establish themselves there, they will acquire more education. As the world comes out of the crisis, it can be supposed that the relative unemployment rate of unskilled Mexican workers will decrease, which would imply less skilled migration relative to unskilled migration. And as the Mexican labor force invests in more education, it is more probable that any given migrant will have a higher level of education. But none of this means that we are in a new world. It is the same world as always.

Figure 5 shows in graphic form the decomposition of Table 1. The black line shows the real change in the skilled share of people born in Mexico that work in the United States. The growth between 2000 and 2010 diminishes if we consider only the people that arrived after the age of 18. It decreases even further if we dismiss the effect of temporary changes in relative unemployment during the crisis. And it diminishes further still if we eliminate the

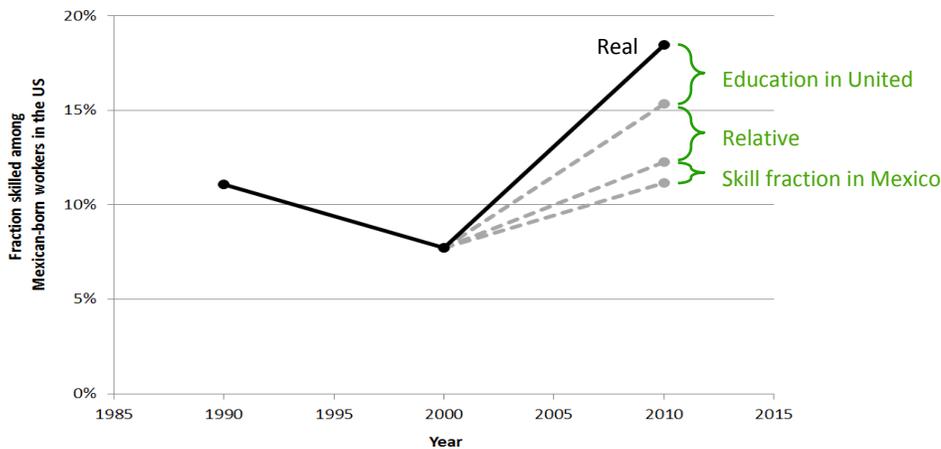
effect of the general growth in the skill rate among the entire Mexican labor force. In the end, without the effect of these three factors, the figure shows that the skilled share of Mexicans in the United States would be similar to the share in 1990. This suggests that the other factors that we can suggest as determinants of this growth—for example, the changes in US immigration policy during these decades—have not greatly altered the result.

Table 1: Explaining the recent growth in the skilled fraction among Mexicans in the United States

Year	% skilled, workers in the US born in Mexico		Ratio of unskilled unemployment rate to skilled unemployment rate	% skilled, workers in Mexico	<i>Total</i>
	Total	Arrived at age 18+			
2000	7.7%	7.6%	0.863	14.2%	
2010	18.5%	15.1%	1.206	16.3%	
Proportional change:	139.4%	98.8%	39.8%	14.4%	
	(A)	(B)	(C)	(D)	
Portion explained:		Education in US	Relative unemployment	Skill rate, Mex.	
		29.1%	28.5%	10.4%	<i>68.0%</i>
		(100-(B/A))	(C/A)	(D/A)	

Only people between ages 18 and 65 are included. Unemployment rates among workers in the United States born in Mexico: In 2000, 4.9% skilled, 4.2% unskilled. In 2010, 7.0% skilled, 8.4% unskilled.

Figure 5: Explaining the recent growth in the skilled percentage of Mexican immigrants in the United States



Source: Calculations in Table 1.

3.3. What is the role of US immigration policy?

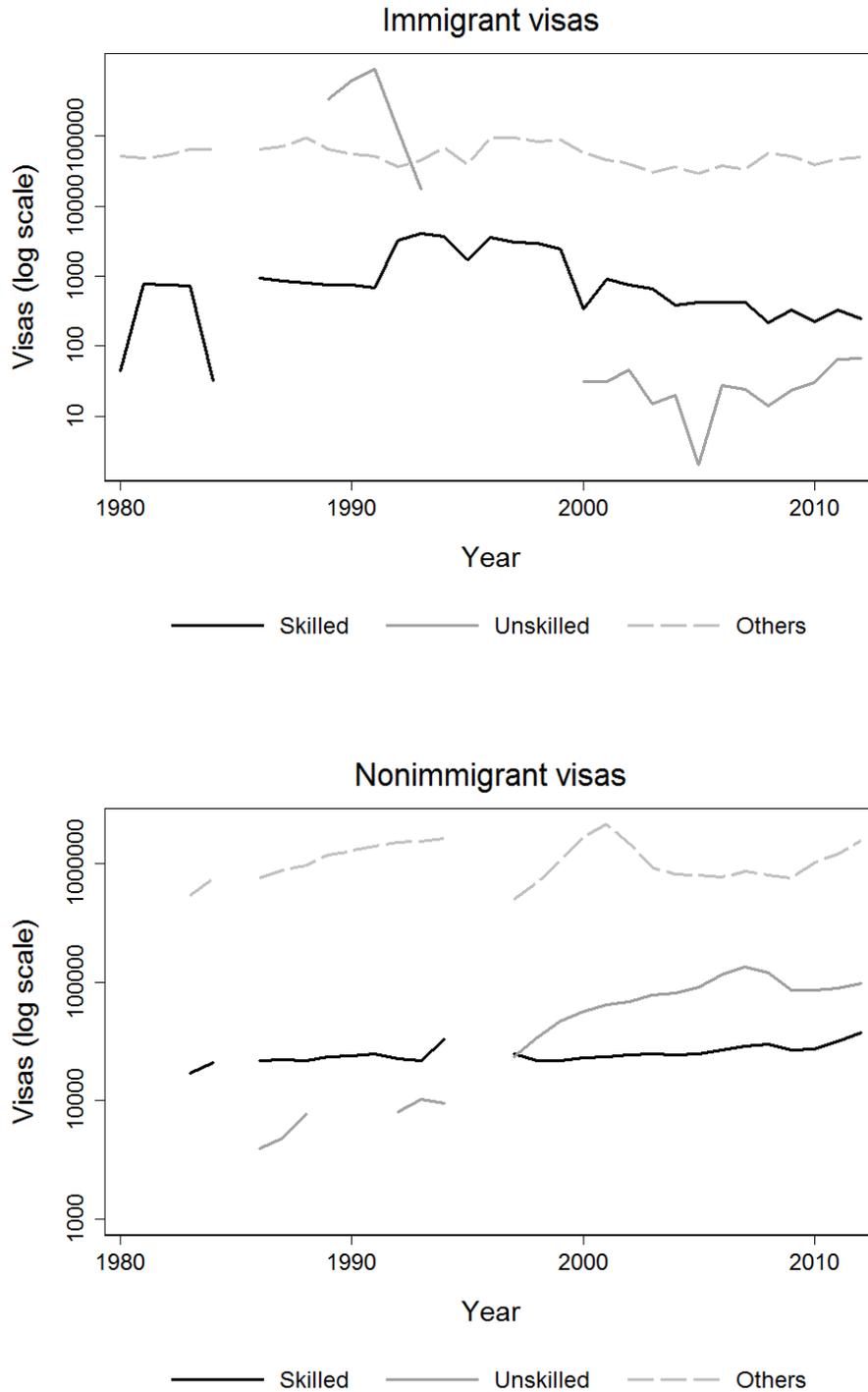
The efforts of the most advanced economies to attract skilled migrants from around the world have been much discussed. This is undeniably a global trend. But in the case of Mexico in particular, it is unclear that these efforts have been an important determinant of migration flows to date. This is suggested by the evidence in the previous subsection.

Here I present more direct data on this issue. Has there been a trend in US immigration policy towards Mexico to give greater preference to skilled workers?

Figure 6 shows statistics on all types of visas awarded to Mexicans to enter the United States since 1980. The upper panel shows immigrant (permanent) visas, and the lower panel shows nonimmigrant (temporary) visas. For immigrant visas, setting aside the mass regularization of unskilled workers after the Simpson-Mazzoli Act of 1986, no trend to admit more skilled workers stands out—neither in relative nor absolute terms. For nonimmigrant visas, the long-term trend has been to admit relatively more *unskilled* workers. The exception is in the last five years, during the economic crisis. But those are five extraordinary years, and it would be reasonable to expect that at the end of the crisis the relative flows of unskilled and skilled workers will tend toward recovering their prior equilibrium.

In sum, it is true that around 20 percent of Mexicans with a university education are found outside of Mexico. But this figure includes those who have been educated abroad, and is a normal rate given that the same labor market forces operate at the national level. The economic crisis has suppressed the demand for unskilled labor in the United States at the moment, and therefore it seems to have created a temporary situation of relative growth in the skill rate of Mexicans in the United States. But the above analysis suggests that the end of the crisis will bring with it a partial reversion of this trend. In any case, there is no strong evidence that any deliberate change in US immigration policy has been an important factor in the relative growth of skilled migration. Instead, this trend mainly results from broader forces outside the control of policy.

Figure 6: Visas granted to Mexicans for entry into the United States, 1980-2012



Sources: See appendix.

4. An alternative vision of skilled migration

The above data suggest two ideas. The first is that skilled migration is a normal part of how labor markets work, both nationally and internationally. The rate of skilled migration has been accelerated by the crisis, probably in most part temporarily, and not because of US immigration policy. In spite of this, skilled migration will undoubtedly be a gradually increasing part of the landscape of these two countries in the long-term. Trying to stop a phenomenon this basic risks impoverishing Mexico for the same reasons that trying to trap skilled people from Chiapas would end up impoverishing Chiapas.

This brings us to a second idea: the necessity of planning for a mobile world, not for a world in which people grow up, study, and work next to their birthplaces. As has been discussed above, certainly there are financial costs associated with skilled migration for origin regions. If our financial systems are appropriate for a world in which everyone is attached to the earth, and if mobility is problematic in such a system, then it is the time to change our financial system.

If there are losses of educational subsidies when skilled people move, one option we have is to try to stop migration one way or another—contrary to the UN Universal Declaration of Human Rights, which confers to any person the unlimited right to “leave any country, including his own”.

But there is another option: that of constructing systems compatible with a world on the move. If there are financial losses when people migrate, there should be financial systems so that people with the desire to migrate can cover the cost of their own education. It is just, and moreover; it is easy for many migrants, given the remarkable rise in income they receive by migrating. What is missing is a system to link the cost of education with the benefits of migration. In my institution, the Center for Global Development, I am working with various governments and with the World Bank to design precisely such systems.

In conclusion, let me to say one thing. In the end, if we consider mobility as the fundamental problem, and thus try to impede mobility, we end up defending the border from within—an odd strategy, since the Mexico-US border was not created for the benefit of Mexico. We all know how and why the current border of Mexico was drawn. It was not drawn where it is now for the benefit of Mexicans. What a historical coincidence it would be if a boundary drawn according to the interests of another proved advantageous for oneself!

Thus let us not defend such a border simply because it exists. Instead, let us use the border as an opportunity, and labor mobility as a motor for the creation of human capital. Perhaps the fundamental problem is not mobility *per se*, but rather the lack of policies apt for a mobile world. The great professor Lant Pritchett writes of a “cliff at the border”, the enormous gap between the incomes on one side and the other—for all types of workers, including skilled ones. This cliff has given rise to fears, fears that somehow everyone will leave. But we can reenvision the cliff. Waterwheels use cliffs to generate energy and

dynamism. Likewise, with policies suitable for this mobile world, skilled and unskilled mobility can be sources of energy, dynamism, and development.

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Appendix: Data sources

A. Statistics of visas granted to Mexicans by the United States:

Immigrant Visas

- *Statistical Yearbook of the Immigration and Naturalization Service*, 1980–1984, 1986–2003.
- *State Department Report of the Visa Office* 2004–2012.

Nonimmigrant Visas

- *Statistical Yearbook of the Immigration and Naturalization Service*, 1981, 1983, 1984, 1986–1994.
- *Nonimmigrant Visa Issuances by Visa Class and by Nationality*, FY1997-2012 NIV Detail Table. Available at http://travel.state.gov/visa/statistics/nivstats/nivstats_4582.html

B. Decomposition of the change in percentage skilled among Mexican immigrants in the United States

Microdata of the population censuses housed at IPUMS-USA and IPUMS-International:

- 1990 Mexican Census Data: XI General Population and Housing Census, 1990. Instituto Nacional de Estadística, Geografía e Informática (INEGI).
- 2000 Mexican Census Data: XII General Population and Housing Census, 2000. Instituto Nacional de Estadística, Geografía e Informática (INEGI).
- 2010 Mexican Census Data: 2010 Population and Housing Census. Instituto Nacional de Estadística, Geografía e Informática (INEGI).
- 1990 US Data: US Census Bureau. 1990 5% State Sample.
- US ACS Data: US Census Bureau. American Community Survey 2000 Sample, 2010 Sample, 2011 Sample.