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**The Returns to Temporary Migration
to the United States: Evidence from the
Mexican Urban Employment Survey**

Benjamin Aleman-Castilla

Abstract

Mexican migration to the United States has been a very important issue throughout the twentieth century, and its relevance has reached unprecedented levels during the last two decades. Even though there is a huge body of literature that analyses many different aspects of this phenomenon, the economic performance of migrants with respect to the Mexican labour markets has received very little attention. This paper aims at filling this gap by presenting new evidence on the effect that migration to the United States has on labour market outcomes of Mexican workers. It uses data from the Mexican National Survey of Urban Labour (ENEU) for the period 1994-2002. Among other advantages, the panel structure of the survey is ideal for minimizing the problems of self-selection bias that are common in most of the alternative data sources. Fixed-effects estimation indicates that Mexican workers that migrate temporarily to the United States obtain significantly higher earnings in the U.S. labour market than in the Mexican one during the period of migration. They also tend to work longer hours and face a generally higher likelihood of non employment during the period of return migration. Finally, the gains from temporary migration are lower for more skilled workers and for those migrating from the most distant regions in Mexico, relative to the United States.

Keywords: temporary migration, real wages, labour supply

JEL Classifications: J61, J22, J15

Data: Mexican National Survey of Urban Labour (ENEU) 1989-2002; Law of General Import and Export Tariffs (TIGIE) 1989-2002 (Publicly available at Diario Oficial de la Federacion, Mexico), NBER U.S. Tariff Database

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Benjamin Aleman-Castilla is an Occasional Research Assistant at the Centre for Economic Performance, London School of Economics. He is also Email: b.aleman-castilla@lse.ac.uk

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1. Introduction

Mexican migration to the United States has become a very important issue during the twentieth century. Many authors trace the beginning of this socio-economic phenomenon back to the late 1880s, linking it to the construction of the railroad between the two countries, just a few decades after the U.S. took Texas, New Mexico and California from Mexico. According to Martin, P. (1998), there have been three major phases of recruitment of Mexican workers authorized by the U.S. government, each one associated with a war-time emergency. The first one occurred in 1917, as a response to the labour force shortage due to World War I, and it is estimated that between 1917 and 1920 some 50,000 Mexican workers were admitted legally, most of them as farm workers. The second stage initiated in 1942 with the *Bracero Program*, when the U.S. and the Mexican governments concluded an agreement that permitted Mexican workers to enter the U.S. as emergency farm workers whenever the U.S. workers were not available. According to Craig, R. B. (1971), this program can then be divided in two phases: from 1942 to 1951, when the labour shortages in the U.S. were mainly due to the participation in the World War II and the U.S. government was the direct supervisor of the program; and then from 1951 to 1964, when U.S. growers were allowed to participate directly in the recruitment of Mexican workers to cover for the shortages generated by the Korean war. Nevertheless, it is believed that the main reasons for extending the program to 1964 were both the pressure coming from the Mexican government and the belief that the *Bracero Program* was the only way to control the increasing illegal immigration. Overall, between 1942 and 1964 approximately 4.6 million Mexicans were admitted in the United States as temporary farm workers, and for some authors (see for example, Hanson, G. H. (2006) or Epstein, G. S., A. L. Hillman and A. Weiss (1999)), the end of this program marked the beginning of large-scale illegal immigration.

The relevance of Mexican migration to the United States has reached unprecedented levels during the last two decades. Apart from being the hottest topic in the bilateral agenda, it has also become a very important component of the economic relation between the two countries. To the south of the border, and according to data published by the Mexican Central Bank and the Mexican Institute of Statistics, Geography and

Computing (INEGI)¹, remittances of Mexican workers accounted for approximately 2.3% of the GDP between 2003 and 2006, which makes it one of the most important sources of income for the economy. Woodruff, C. and R. Zenteno (2001) estimate that remittances are responsible for 20% of the capital invested in micro enterprises throughout urban Mexico. On the other hand, to the north of the border, the Bureau of Labor Statistics of the U.S. Department of Labor estimates that 8.3% of the employed people in the United States during 2004 and 2005 were from Mexican origin², and the increasing presence of Mexican illegal immigrants in the United States has been constantly generating debates among different groups of the population and the government, up to the point that in September 2006 the U.S. Congress approved a budget of 1,200 million dollars in order to build a 1,120 kilometers fence along the U.S.-Mexico border.

So, even though Mexican migration to the U.S. is almost as old as the countries themselves (as we know them today), its increasing complexity contributes to make it an even more attractive topic for research with the passing of time. To date, there is a huge body of literature that analyses many different aspects of this phenomenon, such as the characteristics of the migrants (Bustamante, J. A. et. al. (1998a); Durand, J. and D. S. Massey (1992)), the factors that influence migration (Massey, D. S. and K. E. Espinosa (1997); Latapi, A. E. et. al. (1998); Markusen, J. R. and S. Zahniser (1997); Papail, J. (1998)), the quantification of legal and illegal migrants (Woodrow-Lafield, K. A. (1998); Hanson, G. H. (2006); Bean, F. D. et. al. (1998); Bean, F. D., R. Corona, R. Tuiran, K. A. Woodrow-Lafield and J. V. Hook (2001)), the interconnectedness between international and regional migration in Mexico (Lozano-Ascencio, F., B. R. Roberts, and F. D. Bean (1996)), or the economic performance of Mexican migrants with respect to the U.S. labour market (Borjas, G. J. (1982), (1987) and (1989); Borjas, G. J., and L. F. Katz (2006); Chiquiar, D. and G. H. Hanson (2005)). Interestingly though, it seems that the economic performance of migrants with respect to the Mexican labour markets has received far less attention, and this is precisely the area in which the present work attempts to contribute on.

¹ See <http://www.banxico.org.mx/polmoneinflacion/estadisticas/balanzaPagos/balanzaPagos.html>, and <http://dgenesyp.inegi.gob.mx/cgi-win/bdieintsi.exe/Consultar>, for some data on family remittances and quarterly GDP.

² Estimated using data from the Current Population Survey. See <http://www.bls.gov/cps/cpsaat13.pdf> and <http://www.bls.gov/cps/cpsaat9.pdf> for more detail.

The main objective of this paper is to present new evidence on the effect that migration to the United States has on the earnings of Mexican workers. It adds to the existing literature by comparing the economic performance of these workers during their stay in the U.S. to their situation when they are back in Mexico. In order to do this, the present study focuses on temporary migration, and it uses data from the Mexican National Survey of Urban Labour (ENEU), for the period between 1994 and 2002. To my knowledge, the information on temporary migration collected by the ENEU has not been used in this type of studies before, even though it offers some noticeable advantages, like its quarterly coverage or its panel structure (which allows minimizing the problems of self-selection biases). Additionally, unlike other sources, the ENEU survey frequently contains information about the migrants even when they are not present, given that the informant is allowed to be different from the subject in these cases. Finally, the survey collects measures of different variables that may affect the migration decision at different levels, such as individual, household, geographic, or workplace characteristics.

To preview the most important results, fixed-effects estimates of the effect of temporary migration on real hourly earnings indicate that a Mexican worker earns on average 112% more in the U.S. labour market than in Mexico during the period of migration. Temporary migrants also work on average 6.5% more hours per week during their stay abroad, a result that is consistent with the standard theory of the response of the labour supply to temporary positive shocks to real wages. Additionally, it is found that temporary migrant workers have a generally higher likelihood of non employment during the period of return migration. Lastly, the estimates of the interactions between migration and individual characteristics indicate that the effect of temporary migration on earnings is lower for more skilled workers and for those migrating from the most distant regions in Mexico, relative to the United States.

The rest of the paper is organized as follows: Section 2 describes the data used in the analysis and provides a discussion about their representativeness and validity. Section 3 presents a preliminary analysis of the characteristics and the determinants of temporary migration from the ENEU data, in order to compare them with the results obtained by other researchers. Section 4 develops the econometric estimation of the

effect of temporary migration on hourly earnings, weekly hours worked, and the likelihood of employment. Section 5 concludes.

2. Description and Representativeness of the Data

The present study uses data from the Mexican National Survey of Urban Labour (ENEU) to study temporary migration from Mexico to the United States. The period covered here goes from 1994 to 2002. The ENEU survey is carried out by the National Institute of Statistics, Geography and Computing (INEGI) since 1983. It provides information about the state of the Mexican labour market, the main socio-demographic characteristics of the household members aged 12 and above, and housing in the principal urban areas of the country. The survey is carried out on a quarterly basis, and the sample is divided in five independent panels, each one staying in it for five consecutive quarters (i.e. it is a rotative panel that allows following individuals for 1.25 years). From 1983 to 1984 the ENEU survey covered only the three main cities in Mexico (Mexico City, Guadalajara and Monterrey). Between 1985 and 1991 its geographical coverage was expanded to 16 cities, within which the main cities at the Mexico-U.S. border were included (Ciudad Juarez, Matamoros, Nuevo Laredo and Tijuana). Between 1992 and 2000 another 32 cities were gradually incorporated to the sample.

Regarding migration, the ENEU survey asks for the residential status of each person in the household. A person is then classified as *temporarily absent emigrant* if he or she was reported as absent from the household at the time of the interview, temporarily residing in a place outside the city where the household is, but still reported by the other members of the household as being part of it. The survey also asks for the temporary place of residence of the absent member, allowing the classification of the migratory movements as internal (i.e. between two Mexican states) and international migration. If the migration movement is internal, the informant is asked for the state to which the referred individual moved. If the migration movement is international, the informant is asked to report the country (if Guatemala, Belize, or the United States) or the region of the world (if some other country in the American continent or any other country of the world) in which the

migrant is currently residing. If the person moved to the United States, the informant is further asked whether he or she moved to a state in the U.S.-Mexico border or to some other place. Finally, the ENEU survey also has some information regarding the reason for migrating, which allows for the classification of migrants as those migrating for *work reasons*, those migrating for *study reasons*, and those migrating for *other reasons*. In order to reduce the problem of selectivity bias, the present study excludes migration for study reasons from the analysis.

There are several advantages in using the ENEU data to study Mexico-U.S. migration. The first one is that, unlike the population censuses and some other data sources, it is a survey carried out quarterly every year and not only every 5 or 10 years. This allows for example to make a more detailed analysis of the response of migration to different macroeconomic events, such as the Mexican crisis, NAFTA, or the different changes in the U.S. migratory policy. Second, because of its panel structure, it is possible to follow individuals through time, making it easier to control for self-selection biases when studying certain aspects of the phenomenon, such as the economic returns to migration and to circular migration. Third, when possible, the ENEU dataset contains information about the migrants even when they are not in the household for the interview (i.e. when they are in the U.S.). This is so because when an individual is absent for an interview, the information is frequently collected from another member of the family. Therefore, in some cases the ENEU contains valuable information of the migrants while in the U.S. Finally, given that it is a labour markets survey, the survey collects measures of different variables that may affect the migration decision at different levels, such as individual characteristics (age, schooling, gender, marital status), household characteristics (number of children, head of household, number of family members, number of providers of income), geographic characteristics (metropolitan area, proximity to the U.S.-Mexico border, whether the individual lives in a state or region with traditionally high rates of migration), and workplace characteristics (industry affiliation in Mexico and in the U.S., employment status in Mexico and in the U.S., informality status in Mexico and in the U.S., etc.).

On the other hand, there may also be some concerns about using the ENEU survey to analyse migration, and perhaps the most important one could be regarding its

Table 1. Distribution of Migrants to the U.S. by Size of the Locality of Origin

| | 1990-1995 | 1995-2000 |
|---|------------------|------------------|
| Total population | 91,158,290 | 97,483,412 |
| Total migrants | 1,737,520 | 1,500,321 |
| From places with less than 2,500 ha <i>% of total migrants</i> | 712,383 41% | 600,128 40% |
| From places with 2,500+ ha <i>% of total migrants</i> | 1,025,137 59% | 900,193 60% |

Source: Censos de Población y Vivienda, 1950 a 2000, and Conteos de Población y Vivienda, 1995 y 2005 (INEGI). Base de datos de la muestra censal.

representativeness. First, as the survey covers only the 48 main cities in the country, any estimation based on these data may be irrelevant if an insignificant fraction of the migrants comes from urban places. However, previous evidence indicates that this is not the case. Table 1 reports data on migration to the U.S. estimated by INEGI from the Mexican population census. According to these numbers, between 1990 and 1995 a total of 1,737,520 Mexicans moved (both temporarily and permanently) to the United States³. Of these, 59% came from places with more than 2,500 inhabitants. Similar results are obtained for the 1995-2000 period. The relevance of urban places as places of origin for international migration seems to be confirmed by other studies and data sources. Bustamante, J. A., G. Jasso, J. E. Taylor and P. T. Legarreta (1998a) report that 58.49% of the interviewed migrants in the Mexican Survey of Migration of the North Border (EMIF) came from places with 15,000 or more inhabitants, and Bustamante, J. A., G. Jasso, J. E. Taylor and P. T. Legarreta (1998b) indicate that 47.4% of the migrants interviewed in the Mexican National Survey of Demographic Indicators (ENADID) came from urban places. Also, in analyzing the evidence on the characteristics of Mexican migrants to the U.S., Cornelius, W. A. (1992) concludes that during the 1970's and 1980's the flow of migrants became more geographically diverse, originating more in non-traditional sending states and large cities.

³ This estimate is corroborated by the U.S. Immigration and Naturalization Service, which reports that 1,490,040 Mexicans arrived to the United States between 1991 and 1995. See Table 4 in BEAN, F. D., R. CORONA, R. TUIRAN, and K. A. WOODROW-LAFIELD (1998): "The Quantification of Migration between Mexico and the United States," *Migration Between Mexico and the United States: Binational Study*, Volume 1: Thematic Chapters, pp. 1-89. for more detail.

Table 2. Number of Migrants and Frequency of Migration to the U.S. 1994 Q2 to 2002 Q4

| | All Migrants (AM) | Migrant Workers (MW) | MW as % of AM |
|--|----------------------|-------------------------|---------------|
| No. Individuals in sample | 1,274,225 | 1,274,225 | 100% |
| No. Migrants ¹ <i>rate of migration</i> | 2,052 0.16% | 953 0.07% | 46% |
| No. Migrants absent for all interviews <i>share of No. Migrants</i> | 12 0.58% | 12 1.26% | 100% |
| No. Migrants absent for 4 interviews <i>share of No. Migrants</i> | 34 1.66% | 32 3.36% | 94% |
| No. Migrants absent for 3 interviews <i>share of No. Migrants</i> | 105 5.1% | 82 8.6% | 78% |
| No. Migrants absent for 2 interviews <i>share of No. Migrants</i> | 292 14.2% | 195 20.5% | 67% |
| No. Migrants absent for 1 interview <i>share of No. Migrants</i> | 1,609 78.4% | 632 66.3% | 39% |
| No. Migrants that migrated 1 time <i>share of No. Migrants</i> | 1,937 94.4% | 874 91.7% | 45% |
| No. Migrants that migrated 2 times <i>share of No. Migrants</i> | 112 5.5% | 76 8.0% | 68% |
| No. Migrants that migrated 3 times <i>share of No. Migrants</i> | 3 0.1% | 3 0.3% | 100% |

Source: author's calculations based on the Nation Survey of Urban Employment (ENEU). Excludes people that moved to the U.S. for study reasons. ¹For the "All Migrants (AM)" column: number of people that was reported as temporarily absent from the household because they migrated to the U.S. for reasons other than studying at the time of one or more of the five quarterly interviews. For the "Migrant Workers (MW)" column: Number of people that was reported as temporarily absent from the household because they migrated to the U.S. for work reasons only, at the time of one or more of the five quarterly interviews.

The second reason why the representativeness of the ENEU data on migration might be questionable is that it captures mainly temporary migration. To see this, table 2 presents some data on the frequency of migration to the United States, calculated from the sample of individuals interviewed between 1994 and 2002. All the individuals in this database have five consecutive, quarterly interviews. The first column of data presents the results for all the individuals that migrated both for *work reasons* and for *other reasons*. The first panel indicates that 2,052 out of 1,274,225 individuals migrated to the United States at some point in time during the period in question, which yields an estimated migration rate of 0.16%. The second panel shows that of

all these migrants 78.4% were reported as *temporarily absent emigrants* in one of their five interviews, while only 0.58% of them stayed in the United States during all the interviews. This implies that the majority of the migration episodes captured by the ENEU lasted at most 6 months. The third panel in the table summarizes the distribution of migrants according to the number of times that they migrated to the United States. It indicates that 94.4% of them migrated only once. The results are very similar when only the people that migrated for *work reasons* are considered.

The problem in this case would be that if temporary migration is not an important component of the overall migratory movements to the United States, then the estimates based on the ENEU survey would be irrelevant. Nonetheless, as with the previous argument, there exists historical evidence indicating the contrary. According to the Mexican Embassy in the United States, “until the second half of the eighties the traditional pattern of migration from Mexico to the United States was circular”⁴. Griswold, D. T. (2002) mentions that between 1942 and 1964, 4.6 million Mexicans entered the United States on a temporary basis to fill the gaps in the labour market caused by the World War II. Between 1965 and 1986, even though per-country legal immigration quotas were in place, the “Texas Proviso” prohibited the U.S. authorities from prosecuting employers that hired undocumented workers. Massey, D. S., J. Durand and N. J. Malone (2002) argue that this situation derived in a *de facto* guest-worker program. To get an idea of the numbers, in the opening line of their analysis of the profiles of temporary Mexican labour migrants to the United States in 1978, Ranney, S. and S. Kossoudji (1983) state that “the flow of temporary Mexican labour migration to the United States is known to be substantial (estimates range from 500,000 to 2 million persons per year)”⁵.

In 1986 the United States Congress passed the Immigration Reform and Control Act (IRCA), which required U.S. companies to check documentation of all prospective employees, authorized fines against firms that knowingly hired illegal immigrants, increased the spending in the Border Patrol, but at the same time granted permanent

⁴ MEXICAN_EMBASSY_IN_THE_UNITED_STATES (2006): "Mexico's Public Policies to Foster Circular Migration," Mexico-U.S.: Migration and Border Security www.embassyofmexico.org, pp. 1-24. p. 4.

⁵ Ranney, S. and S. Kossoudji (1983), p. 475.

Table 3. Mexican Nonimmigrants Admitted as Temporary Workers, Exchange Visitors, and Intra-company Trainees

| | Total Nonmigrants | Workers with Specialty Occupations | Seasonal Workers | Intra-company Transferees | Workers with Extraordinary Ability or Achievement | Athletes, Artists and Entertainers | Other | Admitted Mexican Immigrants | Nonmigrants as % of Immigrants |
|--------------|-------------------|------------------------------------|------------------|---------------------------|---|------------------------------------|----------------|-----------------------------|--------------------------------|
| 1998 | 66,197 | 10,079 | 32,321 | 8,987 | 348 | 7,268 | 7,194 | 131,575 | 50% |
| 1999 | 86,424 | 12,257 | 44,996 | 11,387 | 561 | 8,731 | 8,492 | 147,573 | 59% |
| 2000 | 104,155 | 13,507 | 54,927 | 14,516 | 750 | 10,385 | 10,070 | 173,919 | 60% |
| 2001 | 116,157 | 14,423 | 63,421 | 15,723 | 881 | 10,508 | 11,201 | 206,426 | 56% |
| 2002 | 118,835 | 15,867 | 65,818 | 15,283 | 851 | 10,237 | 10,779 | 219,380 | 54% |
| 2003 | 130,327 | 16,290 | 75,802 | 15,794 | 1,472 | 10,375 | 10,594 | 115,864 | 112% |
| 2004 | 136,518 | 17,917 | 73,498 | 16,336 | 1,709 | 8,575 | 18,483 | 173,664 | 79% |
| 2005 | 169,786 | 17,063 | 90,466 | 16,279 | 2,216 | 9,478 | 34,284 | 161,445 | 105% |
| Total | 928,399 | 117,403 | 501,249 | 114,305 | 8,788 | 75,557 | 111,097 | 1,329,846 | 70% |

Source: Yearbook of Immigration Statistics 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005. U.S. Department of Homeland Security. Immigrants, as defined by U.S. immigration law, are persons lawfully admitted for permanent residence in the United States. A Nonimmigrant is defined as a foreign national seeking to enter the United States temporarily for a specific purpose.

legal status to almost 3 million illegal immigrants⁶. Even though some authors argue that Mexican temporary migration has decreased during the post-IRCA period (see for example Cornelius, W. A. (1992) and Marcelli, E. A. and W. A. Cornelius (2001)⁷), there is also empirical evidence that supports the continuity of its importance. To mention one example, Durand, J., D. S. Massey and R. M. Zenteno (2001) use data from the ENADID survey, the U.S. census, and the Mexican Migration Project (MMP) to analyse the profile of Mexican immigrants to the United States. They conclude that there is basically no evidence of a trend away from the dominance of working-age males or of a greater family migration, but that instead there has been an increase in the propensity towards return migration in the early 1990's.

On the other hand, according to the U.S. Department of Homeland Security, between 1998 and 2005 928,399 Mexicans entered the United States as temporary workers, exchange visitors, or intra-company trainees (see table 3). Of these, almost 54% entered as seasonal workers, both agricultural and non-agricultural. Total nonmigrants between 1998 and 2005 represented a 70% of lawfully admitted permanent residents (immigrants). These estimates –which should be taken as a lower bound, given that

⁶ For more detail, see for example DUNN, T. J. (1996): *The Militarization of the U.S.-Mexico Border, 1978-1992: Low-Intensity Conflict Doctrine Comes Home*. University of Texas at Austin..

⁷ Cornelius, W. A. (1992) and Marcelli, E. A. and W. A. Cornelius (2001) find that the increase in permanent migration is not only related to the legalization programs introduced by IRCA in 1986, but also to the changing composition of U.S. demand for migrant labour, the economic crisis in Mexico during the 1980's, and the maturing of transnational migrant networks that altered the demographic composition of migration flows and strengthened incentives for permanent settlement in the United States.

Figure 1. Share of Mexicans on U.S. Population
 (Basic Monthly Data from the U.S. Current Population Survey)

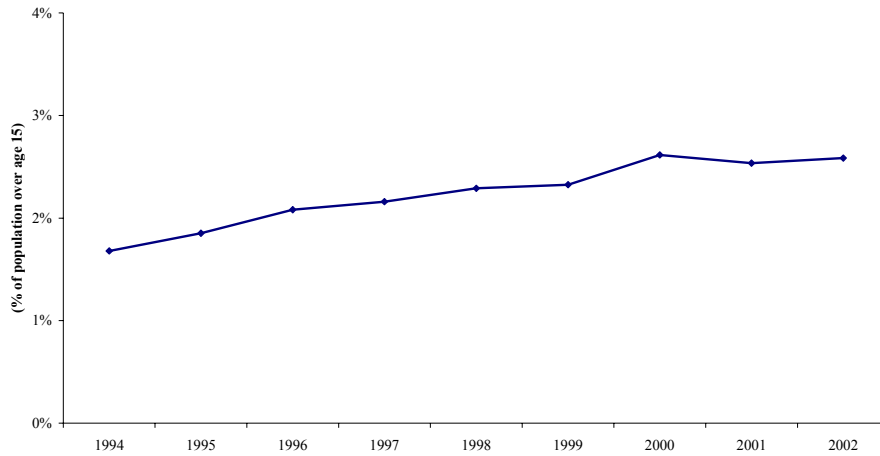
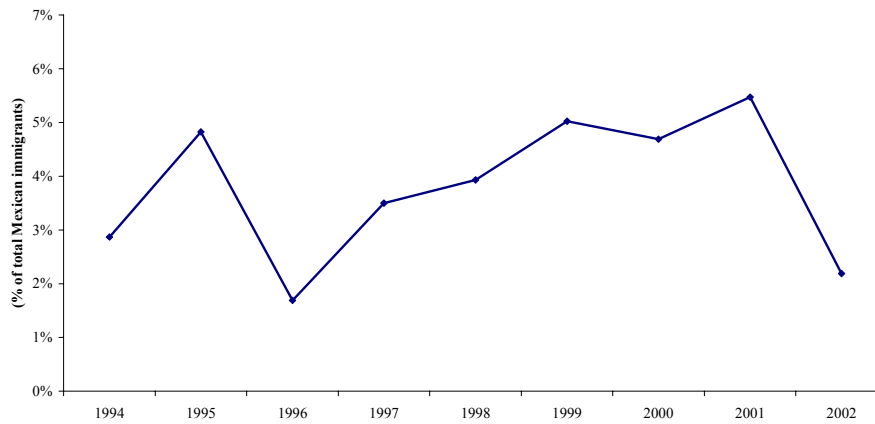


Figure 2. Share of Recent Mexican Immigrants in Total Mexican Immigration to the U.S.
 (Basic Monthly Data from the U.S. Current Population Survey)¹



¹ Recent immigrants are those that entered the United States during the year.

the official statistics do not account for illegal migration, indicate that Mexican temporary migrant workers are an important proportion of the total flow of Mexican migrants every year.

Finally, it is also possible to get an idea of the relative importance of these workers with respect to the stock of Mexican immigrants in the U.S. by looking at the basic

Figure 3. Share of Mexican Immigrants without U.S. Citizenship
(Basic Monthly Data from the U.S. Current Population Survey)

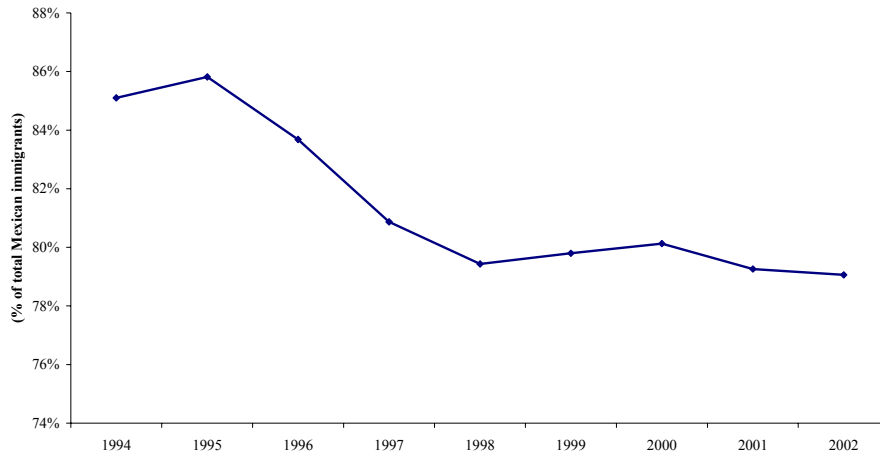
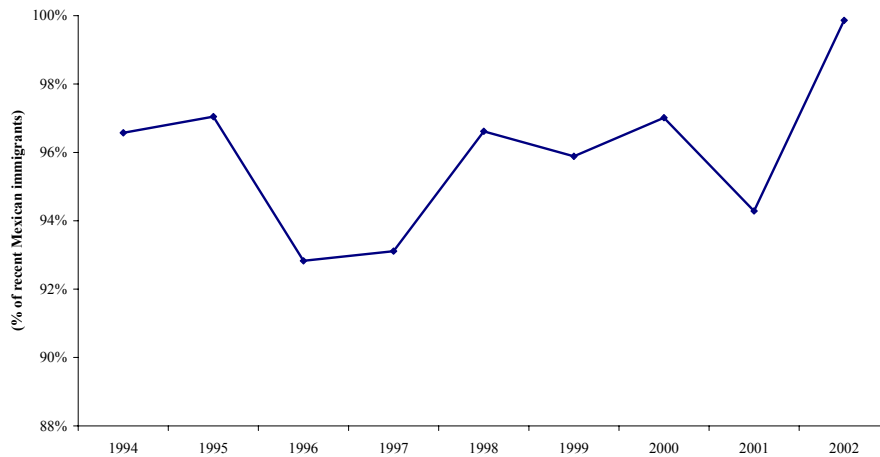


Figure 4. Share of Recent Mexican Immigrants without U.S. Citizenship
(Basic Monthly Data from the U.S. Current Population Survey)



monthly data of the U.S. Current Population Survey⁸. Although the survey does not allow for the exact identification of temporary migrants, it is possible to approximate their weight in the stock of Mexican immigrants through recent immigration (i.e. those that entered the country within the referred year, for example) and citizenship status. Figure 1 plots the share in the U.S. population over age 15 of people born in Mexico. On average, Mexicans represented a 2.2% of the U.S. population between 1994 and 2002. Figure 2 shows the estimated share of Mexican immigrants that entered the country during the year. It indicates for example that 2.9% of all the

⁸ The data comes from the National Bureau of Economic Research (NBER) Data Collection, in http://www.nber.org/data/cps_index.html.

Mexicans living in the United States by 1994 entered the country during that year. The average for the 1994-2002 period is 3.8%. Figure 3 plots the fraction of Mexican immigrants without U.S. citizenship. Even though this figure has declined through time, about 79% of all Mexican immigrants in 2002 still did not have the U.S. citizenship. The average for the 1994 to 2002 period is 81.5%. Lastly, figure 4 shows that the share of recent Mexican immigrants without citizenship was always around 96% between 1994 and 2002, which could be indicating that most of them do not intend or are not allowed to stay in the United States for long periods.

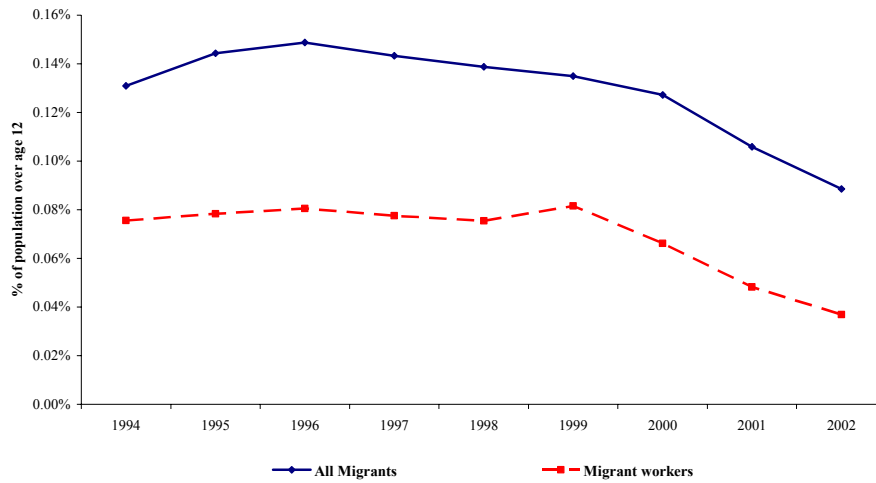
In conclusion, the discussion in this section suggests that temporary migration has been a historically important component of the Mexico-U.S. relationship, and that even though it represents a small fraction of the total stock of Mexicans in the U.S., it is still a very important component of the annual flows. Thus, even though the ENEU captures mainly temporary migration, and even though these data refer only to urban places, it seems that the survey is in principle able to measure a relevant part of the Mexico-U.S. migratory phenomenon. This, together with the above mentioned advantages regarding its structure, makes it a valuable data source worth using.

3. The Characteristics of Temporary Migration

This section presents new evidence on the determinants of temporary migration to the United States, stemming from the main urban places in Mexico. As in table 2 in the previous section, the results are shown for *all migrants* and *work migrants* separately. Also, as mentioned before, migration for *study reasons* is left outside the analysis in order to minimize any possible self-selection bias problems.

To begin, figure 5 depicts the estimated annual Mexican temporary migration rate to the U.S. among the population aged 12 and more. The average annual rate for *all migrants* is 0.13% while for *work migrants* is equal to 0.07%. For the case of *all migrants*, there is a negative trend in this rate starting in 1996, while for the *work migrants* it starts to decrease just after 1999. It is interesting to note that in the first case this change of trend coincides with the Illegal Immigration Reform and

Figure 5: Estimated Temporary Migration Rate to the U.S.



Immigrant Responsibility Act of 1996, “which addressed border enforcement and the use of social services by immigrants. It increased the number of border patrol agents, introduced new border control measures, reduced government benefits available to immigrants, and established a pilot program in which employers and social services agencies could check by telephone or electronically to verify the eligibility of immigrants applying for work or social services benefits”⁹. Also, the acceleration in the decline of the temporary migration rate between 2000 and 2002 for both groups in the figure may be partially reflecting the tighter immigration enforcement and border controls that came into place after the September 11 terrorist attacks¹⁰.

Apart from its variation over time, migration to the U.S. has also been historically diverse among sending regions in Mexico. Even though migrants originate from all over the country nowadays, traditionally it has been the west-central region the one with the highest levels of migration. According to Chiquiar, D. and G. H. Hanson

⁹ CALDERA, S., and P. PIPER/BACH (2006): "Immigration Policy in the United States," The Congress of the United States - Congressional Budget Office. p. 14.

¹⁰ On the 26th of October, 2001, President George W. Bush signed into law the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001, known as the USA Patriot Act of 2001. According to the Centre for Immigration Studies, the act contains provisions that improve the ability of U.S. authorities to identify and either exclude or prosecute aliens with terrorist ties. Among other things, it authorizes the exclusion of the spouses and children of aliens who have committed acts linking them to terrorist organizations within the past five years and makes inadmissible any alien determined by the Attorney General and the Secretary of State to have been associated with a terrorist organization. It also mandates the implementation of an integrated entry and exit data system at airports, seaports, and land border ports; as well as the creation of a student database with information on the date and port of entry. See JENKS, R. (2001): "The USA Patriot Act of 2001: A Summary of the Anti-Terrorism Law's Immigration-Related Provisions," *Background Paper*. Center for Immigration Studies, pp. 1-4. for more detail.

(2005), this is partially an historical accident: “In the early 1900s, Texas farmers began to recruit laborers in Mexico. Given the small populations on the Texas-Mexico border, recruiters followed the main rail line into Mexico, which ran southwest to Guadalajara, a major city in the center west of the country”¹¹. According to estimates based on the ENADID and the EMIF data, the border and northern states follow the west-central region in importance (Bustamante, J. A., et. al. (1998b)), and the relevance of the border states has been increasing in recent years, acting now as a link between internal migration from the southern states and international migration to the U.S. (Lozano-Ascencio, F., B. R. Roberts and F. D. Bean (1996)).

To see what the ENEU survey has to say about this, the panels in figure 6 depict the evolution of each region’s share of total temporary migration to the United States, and the map in figure 7 identifies the states that belong to each region. The graphs confirm the importance of the west-central, the border, and the northern regions. They also show a decline in the relative weight of the west-central states (from 46% to 29% of *all migrants* and from 55% to 17% of *work migrants* only, between 1994 and 2002), and a strong increase in the share of the border region (from 27% to 37% of *all migrants* and from 16% to 44% of *work migrants* only). Finally, the data seem to partially support the findings by Marcelli, E. A. and W. A. Cornelius (2001), in the sense that the Mexican migratory flow is becoming more geographically diversified, and that there has been an increase in the likelihood of migration originating in the southern states (in figure 2, the share of the southern states in *work migrants* increased from 4% to 9% between 1994 and 2002).

Another well-known result obtained in previous empirical studies is that migrants and nonmigrants have different individual characteristics. As an example, in their revision of the pre-IRCA Mexican studies, Bustamante, J. A., G. Jasso, J. E. Taylor and P. T. Legarreta (1998c) indicate that, on average, about 70% of the migrants were below age 30, approximately 85% were males, and roughly 50% were married. A very

¹¹ Chiquiar, D. and G. H. Hanson (2005), p.258. According to the authors, the following states belong to the west-central region: Aguascalientes, Colima, Guerrero, Hidalgo, Jalisco, Guanajuato, Michoacán, Morelos, Nayarit, Oaxaca, Querétaro, San Luis Potosí, and Zacatecas. They also mention that in the year 2000, 9% of the households in these states had sent migrants to the U.S. within the last five years, compared to 2.6% of households in the rest of the country.

Figure 6. Regional Shares in Migration to the U.S.

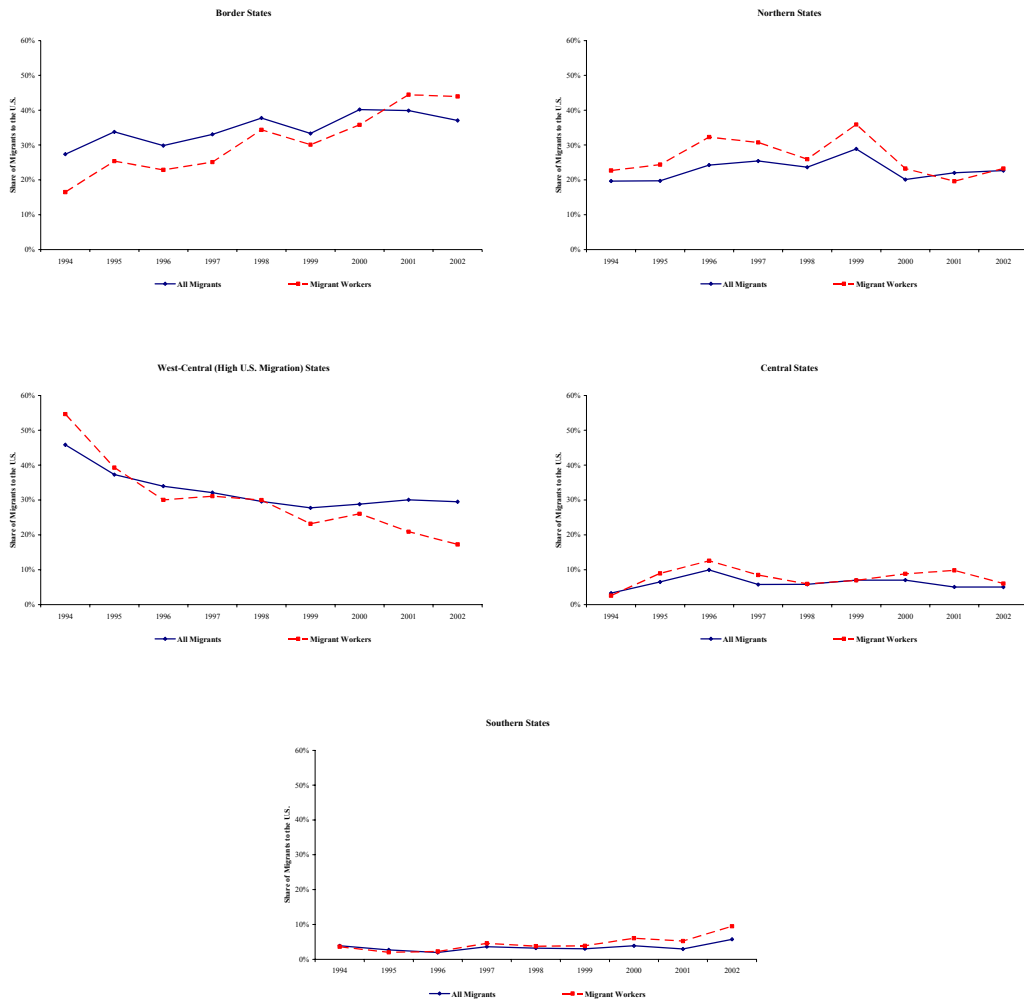
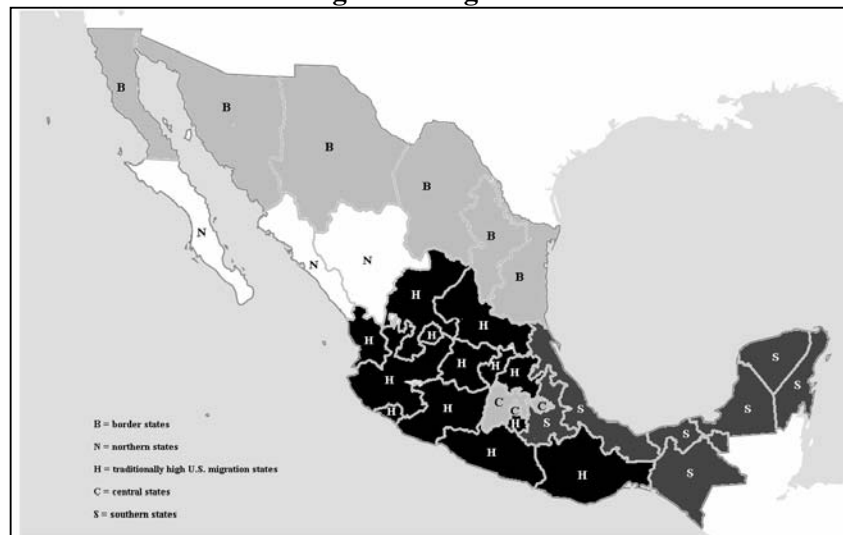


Figure 7. Regions



similar pattern is found in more recent studies and data sources (see Bustamante, J. A. et. al. (1998a), Durand, J. et. al. (2001), and Durand, J. and D. S. Massey (1992)). Also, regarding educational attainment, the profile of the migrants has changed through time. Gamio, M. (1969) found that years of schooling among Mexican migrants to the United States were very low in the early years: around 5. But more recent studies have documented a change towards a higher skilled sector of the population. Using the 1990 and 2000 Mexican and U.S. population censuses, Chiquiar, D. and G. H. Hanson (2005) find that Mexican immigrants in the United States are more educated than nonmigrants in Mexico. Cuecuecha, A. (2005) and Mishra, P. (2003) find that the likelihood of emigration to the United States is higher for more educated Mexicans. These findings contradict the hypothesis of negative selection originally proposed by Borjas, G. J. (1987), which stated that in countries with high returns to education and higher wage dispersion, such as Mexico, individuals in the lower part of the skills distribution are those with the greatest incentives to migrate to the United States. Finally, regarding wages, there is also some evidence suggesting that, compared to the Mexican distribution, migrants to the U.S. would be concentrated in the middle part of it if they were paid according to Mexican prices (Chiquiar, D. and G. H. Hanson (2005)); whereas when compared to the United States distribution, the economic performance of the Mexican migrants has historically lagged behind with respect to both the U.S. natives and other groups of immigrants (Borjas, G. J. and L. F. Katz (2006), Feliciano, Z. M. (2001), and Borjas, G. J. (1982)), with a very weak convergence rate throughout the twentieth century.

Table 4 presents estimates of the average individual characteristics for temporary migrants and nonmigrants obtained from the ENEU survey. The first panel shows that in general migrants tend to be older and more experienced than nonmigrants, but the differences become minimal when comparing only *work migrants* with nonmigrants, and they are reversed when comparing the former with employed nonmigrants. Also, the average years of schooling for migrants are very similar to those of the nonmigrants, while the fractions of married and male individuals are greater for the first group. The estimates also seem to indicate that the likelihood of becoming a migrant is greater for the heads of households and for individuals with more children, compared to nonmigrants. Finally, average hourly earnings for migrants are

Table 4. Mean Sample Characteristics of Migrants and Non-migrants 1994 Q2 to 2002 Q4

| | All Migrants | Migrant Workers | Non-Migrants | Employed Non-Migrants |
|----------------------------------|--------------|-----------------|--------------|-----------------------|
| Age | 40.61 | 34.28 | 34.74 | 35.65 |
| Experience | 26.87 | 19.84 | 20.41 | 20.61 |
| Schooling | 7.75 | 8.45 | 8.35 | 9.04 |
| Married | 0.57 | 0.62 | 0.48 | 0.54 |
| Male | 0.57 | 0.88 | 0.47 | 0.63 |
| Head of household | 0.48 | 0.63 | 0.32 | 0.48 |
| No. children in household | 4.08 | 2.34 | 2.34 | 2.00 |
| Hourly earnings ¹ | 22.55 | 24.83 | 15.50 | 15.50 |
| When in Mexico, lives in: | | | | |
| a border state | 0.38 | 0.35 | 0.26 | 0.26 |
| a northern state | 0.23 | 0.27 | 0.07 | 0.07 |
| a west-central state | 0.31 | 0.27 | 0.37 | 0.38 |
| a central state | 0.05 | 0.08 | 0.10 | 0.10 |
| a southern state | 0.02 | 0.03 | 0.20 | 0.19 |
| Employment status ² : | | | | |
| employed | 0.55 | 0.80 | 0.53 | 1.00 |
| unemployed | 0.05 | 0.07 | 0.02 | 0.00 |
| out of the labour force | 0.41 | 0.12 | 0.45 | 0.00 |
| If employed ³ : | | | | |
| works in the formal sector | 0.66 | 0.49 | 0.73 | 0.49 |
| works in the informal sector | 0.34 | 0.51 | 0.27 | 0.51 |

Source: author's calculations based on the National Survey of Urban Employment (ENEU). Excludes people that moved to the U.S. for study reasons. "All Migrants" refers to people that was reported as temporarily absent from the household because they migrated to the U.S. for reasons other than studying at the time of one or more of the five quarterly interviews "Migrant Workers" refers to people that was reported as temporarily absent from the household because they migrated to the U.S. for work reasons only, at the time of one or more of the five quarterly interviews.

¹Nominal hourly earnings in current pesos, obtained during the week before the interview.

² For each column, this panel shows the fractions of individual-quarter cells that where employed, unemployed, and out of the labour force throughout the 1994Q2-2002Q4 sample.

³ For each column, this panel shows the fraction of employed individual-quarter cells that where working in the informal and the formal sector throughout the 1994Q2-2002Q4 sample

significantly higher than for nonmigrants, as suggested by the literature discussed above.

The second panel of table 4 summarizes the sample share of each one of the Mexican regions described above. It indicates that around 90% of the temporary migrants live in a border, a northern, or a west-central state whenever they are residing in Mexico;

compared to a 70% of the nonmigrants. The third panel of the table contains information about the employment status of both migrants and nonmigrants. While the figures for *all migrants* and nonmigrants are very similar to each other, the employment and out-of-the-labour-force rates for *work migrants* are notoriously higher and lower, respectively. Finally, the last panel summarizes the formality/informality status for each one of the groups¹². The shares of formality and informality for *work migrants* are the same as for employed nonmigrants, but they are markedly different from those of *all migrants* and nonmigrants: while formality and informality basically have an equal share in the first group, formality is more common than informality in the other two groups.

In sum, the statistics presented in table 4 seem to confirm the findings of previous studies regarding the individual characteristics of the migrants, particularly for the *work migrants*. This is also an indicator of the good quality of the data collected by the ENEU survey. The table also displays one of the advantages of this survey by presenting evidence on the employment and the formality/informality status of the migrants, two characteristics that were rarely reported in previous studies and that could certainly be very important determinants of the migration decision. Table 5 contains some of the average individual characteristics for Mexican immigrants obtained from the basic monthly data of the U.S. Current Population Survey, and compares them to those of Mexican migrants in the ENEU survey. The characteristics of the ENEU work migrants are in general closer to those of the *all Mexicans CPS* category.

Finally, another interesting characteristic of the Mexican migrants is the economic sector to which they belong, both when they are still in Mexico and when they are already in the United States. For the pre-IRCA period, Bustamante, J. A. et. al. (1998c) identified the agricultural, transport, services, and commerce as some of the most common economic sectors to which migrants were affiliated before leaving

¹² Following the definition used in ALEMAN-CASTILLA, B. (2006): "The Effect of Trade Liberalization on Informality and Wages: Evidence from Mexico," *CEP Discussion Papers*, pp. 1-71., a person is classified as working in the informal sector if he or she runs a firm of 6 or less employees and does not have any kind of social or health insurance (*informal self-employed*), if he or she works for a firm of any size and does not have any kind of social or health insurance (*informal salaried*), and if he or she works without receiving any kind of payment (*unpaid workers*).

Table 5. Some Sample Characteristics of Mexican Immigrants from the U.S. Current Population Survey Compared to Temporary Migrants from ENEU

| | All Mexicans CPS | Recent Mexican Immigrants CPS ¹ | All Migrants ENEU | Work Migrants ENEU |
|------------------------------|---------------------|---|----------------------|-----------------------|
| Age | 35.93 | 28.41 | 40.61 | 34.28 |
| Schooling | 8.75 | 8.61 | 7.75 | 8.45 |
| Married | 0.64 | 0.49 | 0.57 | 0.62 |
| Male | 0.53 | 0.57 | 0.57 | 0.88 |
| Hourly earnings ² | 9.02 | 7.86 | 5.42 | 5.46 |
| Employment status: | | | | |
| employed | 0.62 | 0.58 | 0.55 | 0.80 |
| unemployed | 0.06 | 0.07 | 0.05 | 0.07 |
| out of labour force | 0.32 | 0.35 | 0.41 | 0.12 |

Source: author's calculations based on the Basic Monthly Data of U.S. Current Population Survey (National Bureau of Economic Research) and the Mexican National Survey of Urban Labour (ENEU).

¹ Recent immigration by year, as available from the CPS: for 1994 those people entering the U.S. during 1992-1994; for 1995 those entering during 1992-1995; for 1996 those entering during 1994-1996; for 1997 those entering during 1994-1997; for 1998 those entering during 1996-1998; for 1999 those entering during 1996-1999; for 2000 those entering during 1998-2000; for 2001 those entering during 1998-2001; and for 2002 those entering during 2000-2002.

² Nominal hourly earnings in current U.S. dollars. For the ENEU migrants, average hourly earnings during the periods of migration only.

Mexico; whereas the agricultural, construction, and transport sectors were the preferred ones once they were already in the United States. Regarding their occupation, the authors mention that most of the migrants were working as labourers, self-employed, and peasants before migrating; and most of them worked as peasants, construction workers, industrial labourers, and services employees during their stay in the United States. Papail, J. (1998) presents data on the economic activity of Mexican migrants from medium-sized cities in the state of Jalisco, for the period between 1980 and 1995. Regarding the economic sector affiliation before migration, he finds evidence of a progressive diversification of activities in detriment of agriculture (which used to provide around 50% of the migratory flows before 1980) and favouring the industrial and the services sector, principally. Papail finds a similar pattern regarding economic sector affiliation of Mexican immigrants in the United States, with more migrants moving from the agricultural to the industrial, construction, restaurants & hotels, and services sectors. Finally, Latapi, A. E., P. Martin, P. S. Davies, G. L. Castro and K. Donato (1998) and Borjas, G. J. and L. F.

Table 6. Distribution of Migrants to the U.S. by Economic Sector

| Economic Sector | Non-Work Migrant | | Work Migrant | |
|--|------------------|------------|--------------|-------------|
| | in Mexico | in the U.S | in Mexico | in the U.S. |
| Farms, forestry & fishing | 0.68% | 0.59% | 6.92% | 13.36% |
| Mining, Petroleum & coal extraction | 0.00% | 0.00% | 0.47% | 0.12% |
| Petroleum & coal extraction | 0.00% | 0.00% | 0.12% | 0.12% |
| Manufacturing industries | 7.81% | 7.13% | 18.87% | 20.63% |
| Construction | 2.44% | 2.93% | 12.43% | 14.30% |
| Electricity, gas & water | 0.00% | 0.10% | 0.23% | 0.12% |
| Hotels, restaurants & trade | 13.77% | 12.89% | 16.88% | 3.99% |
| Transport & storage | 1.76% | 1.66% | 8.44% | 3.75% |
| Financial services & real estate | 0.20% | 0.10% | 0.82% | 0.00% |
| Personal, professional and social services | 15.82% | 13.77% | 24.38% | 39.62% |
| Not available/unemployed/out of the labour force | 57.62% | 60.94% | 10.55% | 4.10% |
| No. Observations (individual-quarter cells) | 1,024 | 1,024 | 853 | 853 |

Source: author's calculations based on the National Survey of Urban Labour (ENEU). Percentages are calculated as the fraction of individual-quarter cells that declared to be in a particular economic sector, divided by the total number of individual-quarter cells in each one of the four categories listed in the columns of the table.

Katz (2006) also report some data on the participation of Mexican immigrants in the U.S. labour markets. Both studies identify janitors and cleaners, food preparation workers, private household workers, farm workers, gardeners and nursery workers, sewing machine operators, garment, construction workers, and vehicle washers and cleaners as some of the major occupations in which Mexican-born workers were a majority of all workers during 1994 and 2000, respectively.

Table 6 summarizes the information on economic sector affiliation of temporary migrants contained in the ENEU sample. It presents data for people that migrated for other reasons (*non-work migrants*) and people that migrated for work reasons, separately. For each one of these groups, the table reports the economic sector shares of migrants both before and during migration to the United States. To understand where the numbers are coming from, recall that the sample used here is a balanced panel with 5 quarterly observations for each individual, covering the period between 1994 and 2002. The percentages in table 6 are therefore calculated from the individual-quarter cells that fall in each one of the four categories included in it. For

example, according to table 2 there are 953 *work migrants* in the sample, each one with 5 quarterly observations. Following the last row in table 6, only in 853 migration episodes of these people it is possible to see what they were doing before leaving (i.e. only in these 853 cases migration did not occur during the first interview). Thus, for the case of *non-work migrants*, apart from being unemployed or out of the labour force, the main economic sectors of origin are the *Personal, professional & social services* and the *Hotels, restaurants & trade* sectors, followed by the *Manufacturing industries; Construction;* and *Transport & storage* sectors. Not surprisingly, roughly the same economic sector affiliation preferences are observed for the periods when these migrants are in the United States, confirming that in most of these cases people are effectively travelling for reasons other than joining the U.S. labour force. In other words, it is very likely that in most of the *non-work migrant* cases the economic sector reported by the ENEU in the quarters when these individuals were temporarily away is simply referring to their economic activity back in Mexico.

Regarding *work migrants*, the main economic sectors of origin are the *Personal, professional & social services* and *Manufacturing industries*, followed by the *Hotels, restaurants & trade; Construction;* and *Transport & storage* sectors. The relatively low importance of agriculture as a sector of origin is obviated by the fact that, as described in the previous section, the ENEU survey is an urban employment survey. Compared to the case of *non-work migrants*, a much smaller fraction of *work migrants* come from unemployment or economic inactivity. On the other hand, the last column of the table indicates that there is a strong preference of this type of migrants to work in the *Personal, professional & social services; Manufacturing industries; Construction;* and *Farms, forestry & fishing* sectors. The fact that the unemployment and out-of-the-labour-force shares are substantially lower for these migrants when they are in the U.S. than when they are in Mexico confirms that the reason for leaving in the first place was to work abroad.

Finally, tables 7 and 8 tabulate the occupations of employed *non-work* and *work* migrants, both for the interview just before migrating and for the interview during migration to the United States. In table 7 the rows with bold numbers refer to those occupations for which the reported values changed in 5 or more units. 138 out of the

Table 7. Main Occupations of Non-Worker Migrants Before and During Migration

| | Before Migration | During Migration | Absoulte Change | % Change |
|--|------------------|------------------|-----------------|-------------|
| Agents, sales representatives, wholesalers, suppliers | 61 | 39 | -22 | -36% |
| Clerks and cashiers | 45 | 39 | -6 | -13% |
| Other services employees | 30 | 31 | 1 | 3% |
| Construction workers | 30 | 26 | -4 | -13% |
| Food, Beverages & Tobacco labourers | 29 | 23 | -6 | -21% |
| Other manufacturing labourers | 25 | 26 | 1 | 4% |
| Secretaries | 22 | 16 | -6 | -27% |
| Domestic servants | 21 | 18 | -3 | -14% |
| Street vendors and cash washers | 18 | 29 | 11 | 61% |
| M&E, Metallurgy, Mineral Products craftsmen and labourers | 18 | 21 | 3 | 17% |
| Supervisors & Inspectors | 18 | 13 | -5 | -28% |
| Technicians | 17 | 16 | -1 | -6% |
| Professionals | 16 | 19 | 3 | 19% |
| Teachers and instructors | 16 | 16 | 0 | 0% |
| Directors, managers & CEOs | 16 | 14 | -2 | -13% |
| Machinery operators | 15 | 19 | 4 | 27% |
| Drivers, pilots and sailors | 13 | 15 | 2 | 15% |
| Janitors | 8 | 11 | 3 | 38% |
| Nurses and nursemaids | 7 | 6 | -1 | -14% |
| Farms, forestry & fishing labourers and peasants | 7 | 5 | -2 | -29% |
| Gardeners | 3 | 1 | -2 | -67% |
| Unspecified employment status | 1 | 2 | 1 | 100% |
| Employed | 363 | 231 | -132 | -36% |
| Unemployed | 20 | 13 | -7 | -35% |
| Out of the labour force | 640 | 778 | 138 | 22% |
| TOTAL (individual-quarter cells) | 1024 | 1024 | | |

Source: author's calculations based on the National Survey of Urban Labour (NEU). "Before Migration" refers to the quarter immediately before being registered as temporarily absent from the household for reasons other than work or study. The rows with bold numbers refer to those occupations for which the reported values changed in 5 or more units.

1,024 (13.5% approximately) *non-work* migrants dropped out of the labour force during their migratory experience. The most common occupations both before and during migration are *Agents and sales representatives*; *Clerks and cashiers*; *Construction workers*; *Other services employees* and *Food, beverages & tobacco labourers*. The occupations in which the labour force increased the most both in absolute and relative terms were *Street vendors and cash washers*; *Machinery operators*; and *Janitors*. The occupations in which the labour force decreased the most were *Agents and sales representatives*; *Secretaries*; *Food, beverages & tobacco labourers*; *Clerks and cashiers*; and *Supervisors and Inspectors*. On the other hand, for the case of the *work migrants*, table 8 presents the data for the *work migrants* group. Given that there are more dramatic changes than in the previous group, the rows with bold numbers now refer to those occupations for which the reported values changed in 10 or more units. The most common occupations before migration are *Construction workers*; *Drivers, pilots and sailors*; *Other services employees*; *M&E, Metallurgy and Mineral Products craftsmen and labourers*; and *Farms, forestry & fishing labourers and peasants*. The most common ones during the stay in the United States are *Other services employees*; *Construction workers*; *Farms, forestry & fishing*

Table 8. Main Occupations of Migrant Workers Before and During Migration

| | Before Migration | During Migration | Absolute Change | % Change |
|---|------------------|------------------|-----------------|-------------|
| Construction workers | 129 | 124 | -5 | -4% |
| Drivers, pilots and sailors | 82 | 45 | -37 | -45% |
| Other services employees | 59 | 127 | 68 | 115% |
| M&E, Metallurgy, Mineral Products craftsmen and labourers | 57 | 41 | -16 | -28% |
| Farms, forestry & fishing labourers and peasants | 52 | 113 | 61 | 117% |
| Agents, sales representatives, wholesalers, suppliers | 49 | 12 | -37 | -76% |
| Machinery operators | 41 | 26 | -15 | -37% |
| Clerks and cashiers | 37 | 20 | -17 | -46% |
| Food, Beverages & Tobacco labourers | 36 | 57 | 21 | 58% |
| Supervisors & Inspectors | 28 | 14 | -14 | -50% |
| Professionals | 25 | 25 | 0 | 0% |
| Wood, Paper & Printing craftsmen and labourers | 23 | 50 | 27 | 117% |
| Electrical & Telecommunications equipment labourers | 22 | 11 | -11 | -50% |
| Other manufacturing labourers | 21 | 25 | 4 | 19% |
| Technicians | 19 | 12 | -7 | -37% |
| Directors, managers & CEOs | 18 | 11 | -7 | -39% |
| Janitors | 18 | 39 | 21 | 117% |
| Street vendors and cash washers | 15 | 9 | -6 | -40% |
| Gardeners | 9 | 22 | 13 | 144% |
| Secretaries | 8 | 5 | -3 | -38% |
| Domestic servants | 8 | 11 | 3 | 38% |
| Teachers and instructors | 6 | 7 | 1 | 17% |
| Nurses and nursemaids | 3 | 18 | 15 | 500% |
| Unspecified employment status | 1 | 5 | 4 | 400% |
| Employment | 647 | 696 | 49 | 8% |
| Unemployed | 67 | 109 | 42 | 63% |
| Out of the labour force | 138 | 43 | -95 | -69% |
| TOTAL (individual-quarter cells) | 853 | 853 | | |

Source: author's calculations based on the National Survey of Urban Labour (ENEU). "Before Migration" refers to the quarter immediately before being registered as temporarily absent from the household for work reasons. The rows with bold numbers refer to those occupations for which the reported values changed in 10 or more units.

labourers and peasants; Food, beverages & tobacco labourers; and Wood, Paper & Printing craftsmen and labourers. Among the occupations with the largest labour force increases, both in absolute and relative terms, were *Other Services employees; Farms, forestry & fishing labourers and peasants; Wood, Paper & Printing labourers; Food, beverages & tobacco labourers; Janitors; and nurses and nursemaids*. The occupations in which the labour force decreased the most were *Drivers, pilots and sailors; Agents and sales representatives; Clerks and cashiers; M&E, Metallurgy and Mineral Products craftsmen and labourers; and Machinery operators*. And lastly, for the sake of comparison, table 9 reports the 10 most common industries and occupations among employed recent Mexican immigrants, according to the CPS.

To conclude, the statistics for temporary *work migrants* presented in tables 7 and 8 seem to support the findings of previous studies regarding the economic sector affiliation and the occupation of Mexican migrants to the United States. The results presented in these tables also seem to indicate that in most of the cases there is no misreporting of the reasons for migration of the *non-work migrants*, and that for the

Table 9. Most Common Industries and Occupations Among Employed Recent Mexican Immigrants from the U.S. Current Population Survey

| Industries | Fraction of Employed Recent Mexican Immigrants | Occupations | Fraction of Employed Recent Mexican Immigrants |
|---|--|------------------------------------|--|
| Eating and drinking places | 19.8% | Cooks | 9.3% |
| All construction | 17.0% | Farm workers | 7.7% |
| Agricultural production, crops | 6.1% | Groundskeepers and Gardeners | 7.0% |
| Landscape and horticultural services | 5.9% | Construction labourers | 6.3% |
| Private household | 3.0% | Misc. food preparation occupations | 5.9% |
| Hotels and motels | 2.9% | Janitors and cleaners | 4.9% |
| Meat products | 2.8% | Labourers, except construction | 3.0% |
| Services to dwellings and other buildings | 2.5% | Maids and housemen | 2.3% |
| Apparel and accessories | 2.4% | Waiters/waitresses assistants | 2.3% |
| Grocery stores | 2.4% | Stock handlers and baggers | 2.3% |
| Other | 35.2% | Other | 49.1% |

Source: author's calculations based on the Basic Monthly Data of the U.S. Current Population Survey (NBER). Recent immigration by year, as available from the CPS: for 1994 those people entering the U.S. during 1992-1994; for 1995 those entering during 1992-1995; for 1996 those entering during 1994-1996; for 1997 those entering during 1994-1997; for 1998 those entering during 1996-1998; for 1999 those entering during 1996-1999; for 2000 those entering during 1998-2000; for 2001 those entering during 1998-2001; and for 2002 those entering during 2000-2002.

majority of these individuals, the data collected by the ENEU during their periods of absence from the household refers to their occupation back in Mexico. In other words, the majority of the people reported as *non-work migrant* may be travelling to the U.S. for holidays or perhaps for business reasons; but not with the purpose of getting a job there.

4. The Returns to Temporary Migration

Most of the literature on the economic performance of migrants available to date has dealt with how well they do in the host country, compared both to the native population and to other immigrants from different countries of origin. For example, apart from the studies by Chiquiar, D. and G. H. Hanson (2005), Borjas, G. J. and L. F. Katz (2006), Feliciano, Z. M. (2001), and Borjas, G. J. (1982) mentioned in the previous section, Borjas, G. J. (1989) analyzes the relationship between earnings and the extent of assimilation, cohort quality change, and return migration experienced by the foreign-born population in the United States. Using longitudinal data from the 1972-1978 Survey of Natural and Social Scientists and Engineers, he finds that the rate of convergence between the age/earnings profiles of immigrants and natives is relatively small, and that there had been a sizable drop in the skills of immigrant scientists and engineering cohorts in the 1960s and the 1970s. In addition, return

migration was more likely among immigrants who did not perform well in the U.S. labour market. Also, Dustmann, C. (1991) studies the optimal investment decision of European temporary migrants into country specific human capital, and its implications for the evolution of the earnings gap between migrants and natives. Using the first wave of the German Socioeconomic Panel of 1984 to analyze temporary migration to West Germany, he finds that foreign workers in the German labour market receive lower wages than their native counterparts throughout their working history, and that the earnings gap between these two groups is not closing over time.

On the other hand, there is considerably less evidence on the economic performance of migrants relative to when they are in their home country or after return migration. Dustmann, C. and O. Kirchkamp (2002) use a survey dataset of Turkish immigrants to Germany that returned to Turkey in 1984, and they find that about half of the returning population of immigrants becomes active as an entrepreneur after return, and that the capital for starting off a business stems from savings and capital acquired abroad. Another study is the one by Paulson, A. and A. Singer (2000). Using variation in the probability that Mexican immigrants to the U.S. will return and work in Mexico, they test the predictions of the permanent income model for savings (i.e. that the higher the probability of returning and working in Mexico, the more temporary is the increase in wages that the migrant experiences by crossing the border, and therefore his savings rate should be higher than for migrants with a lower probability of returning to Mexico). Using data from the Mexican Migration Project, they find that a higher probability of return is associated with a lower savings rate, but that the interaction between the probability of returning and migrant income increases the savings rate significantly.

Thus, the analysis in this section aims at presenting new evidence from the Mexican National Survey of Urban Labour on the effect of temporary migration to the United States on earnings, both during and after migration. As in the previous section, work and non-work migrants are considered separately and compared to the nonmigrants. Given that most of the migrants in the sample were reported as absent from the household once and just for one of the interviews (see table 2), the analysis is based

only on this group whenever it is necessary, in order to simplify the exposition of the results.

To begin, recall that the dynamic labour supply theory (see, for example MaCurdy, T. E. (1981)) suggests that the marginal disutility of work is proportional to the real wage rate. Therefore, given that real wages are higher in the United States than in Mexico, a migrant worker would be expected to earn more and work longer hours during his stay in the former country. Figures 8 and 9 show the average hourly earnings for work and non-work migrants grouped by quarter of migration and compared to the average hourly earnings for nonmigrants in the ENEU data. Two things are evident from figure 8: first, the increase in earnings during the period of migration; and second, the fact that average earnings for work migrants tend to be above that of nonmigrants. Less evident is whether earnings after migration are higher than earnings before migration, which may be partially due to the length of the observable period, and partially due to the length of the migration period. In other words, the observable period may be too short to capture any possible change in earnings obtained in Mexico that could be attributable to the effect of migration; or alternatively, the duration of migration may be too short as to have such an effect. For the case of non-work migrants, there is basically no generalized pattern through time. Figure 10 plots the average hourly earnings for work and non-work migrants that apparently move seasonally to the United States (i.e. those that migrate during the first and the fifth quarters), against those for nonmigrants. As before, earnings of work migrants are clearly higher during these two periods.

Figures 11 and 12 show the average weekly hours worked by work and non-work migrants, also grouped by quarter of migration and compared to the average weekly hours for nonmigrants. As with earnings, weekly hours for work migrants increase during the period of migration and tend to be always above those of nonmigrants. In contrast, average weekly hours for non-work migrants decrease during the period of migration and tend to be always below those of nonmigrants. Figure 13 shows that the average weekly hours worked by seasonal migrants have a very similar pattern.

Figure 8. Average Hourly Earnings for Migrant Workers by Quarter of Migration

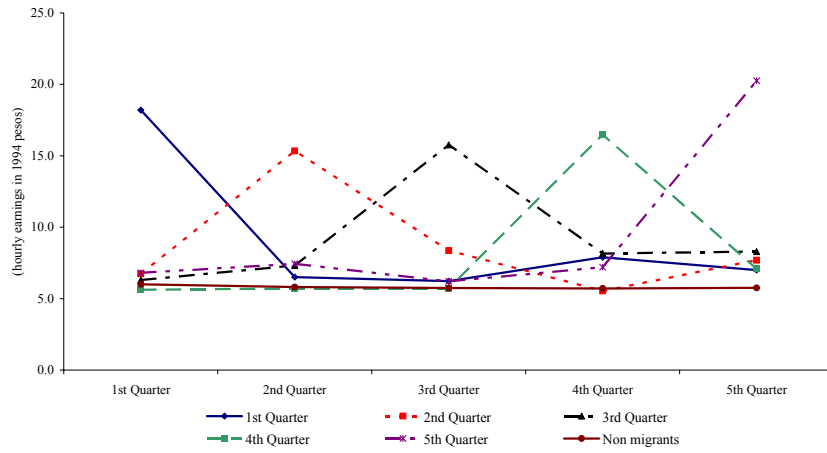


Figure 9. Average Hourly Earnings for Non-Work Migrants by Quarter of Migration

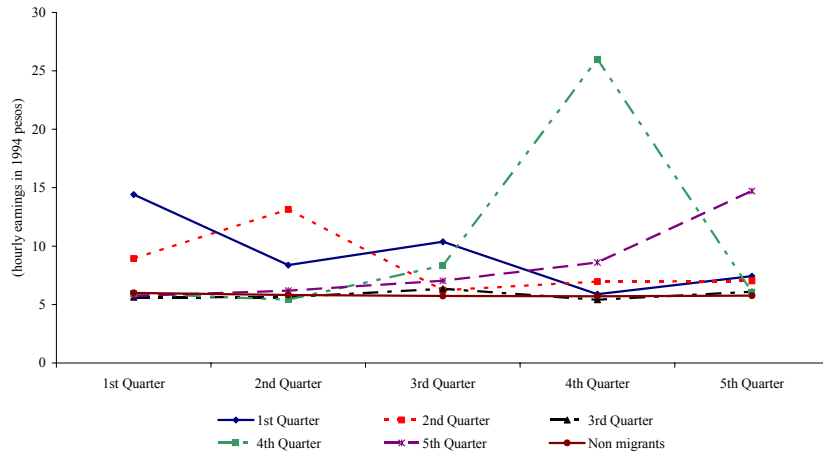


Figure 10. Average Hourly Earnings for People that Migrated in the 1st and the 5th Quarters

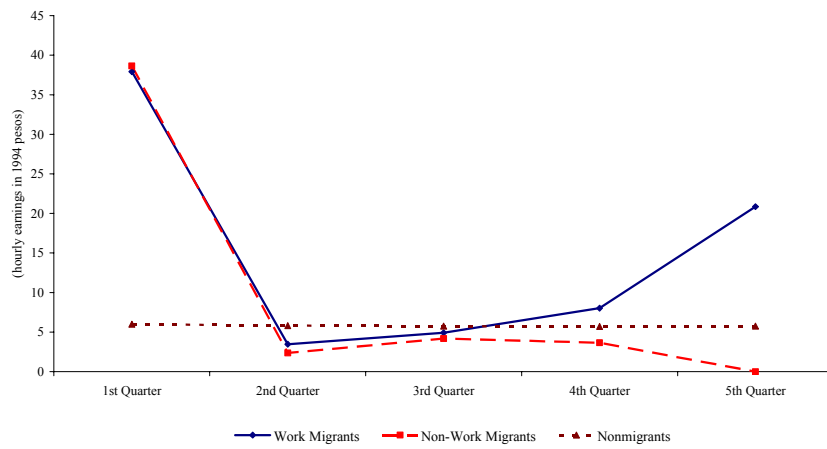


Figure 11. Average Weekly Hours Worked by Migrant Workers by Quarter of Migration

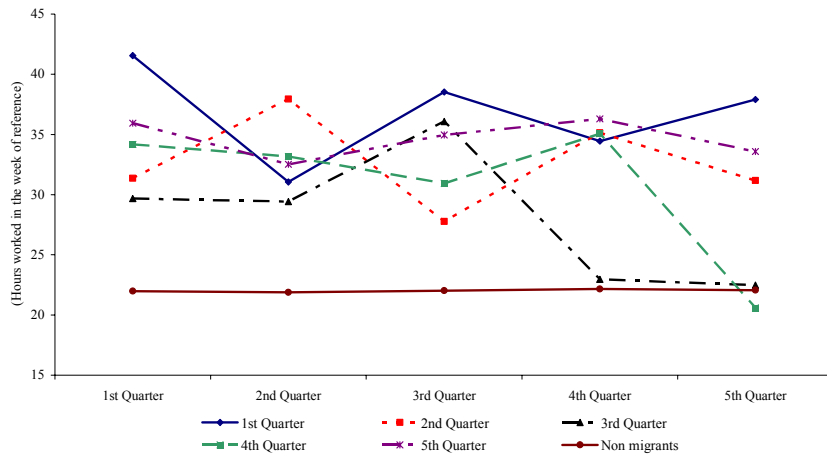


Figure 12. Average Weekly Hours Worked by Non-Work Migrants by Quarter of Migration

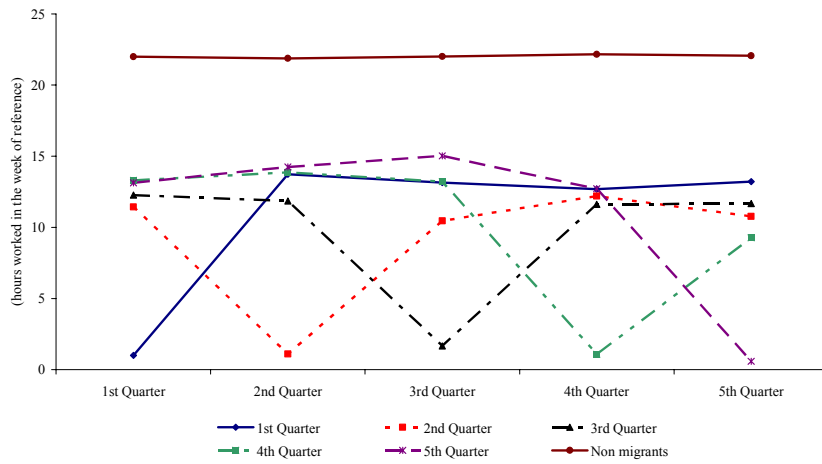
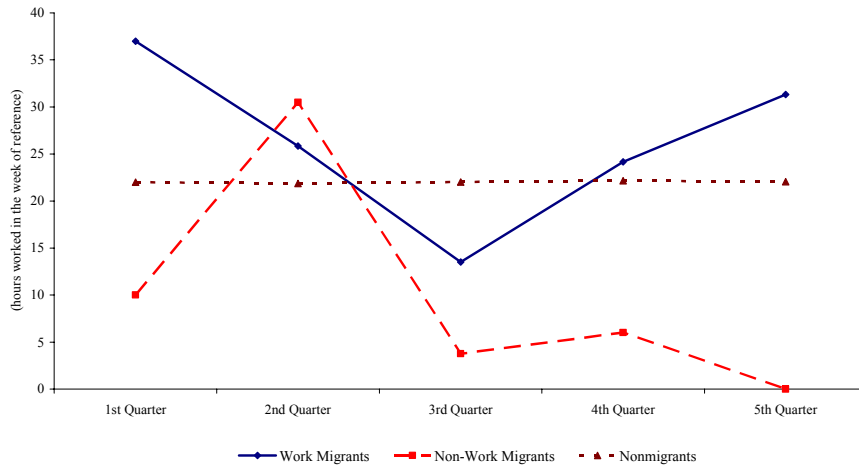


Figure 13. Average Weekly Hours Worked by People that Migrated in the 1st and the 5th Quarters



Finally, figures 14 to 16 plot the quarterly employment shares for work and non-work migrants against those for nonmigrants. In both cases these shares follow closely the behaviour of the average weekly hours worked, as may be expected. The fraction of employed work migrants tends to increase by about 5 to 10 percentage points during the quarter of migration, while the fraction of employed non-work migrants tends to decrease by about 10 to 15 percentage points during the referred quarter. For the case of nonmigrants, the share of employment remains constant throughout the five quarters, at approximately 53%.

Overall, the graphs suggest that temporary migration should affect both the earnings and the labour supply of work migrants. To estimate the effects on earnings, the following equation is fitted using fixed effects:

$$y_{it} = X_{it}\beta_X + M_{it}\delta_M + B_{it}\varphi_B + A_{it}\theta_A + \varepsilon_i + \varepsilon_t + \varepsilon_{it} \quad (1)$$

where y_{it} is the natural logarithm of hourly earnings for individual i at time t , X_{it} is a matrix of time variant individual characteristics (e.g. a quadratic term on potential experience, years of schooling, a dummy variable for marriage, and an indicator for informality), and M_{it} is an dummy variable equal to 1 if individual i migrated to the United States at time t and 0 otherwise. B_{it} and A_{it} are vectors of dummy variables included to see whether there is a relationship between migration at quarter t and earnings in a quarter other than the quarter of migration. B_{it} is a vector of dummy variables for the periods before the period of migration, and A_{it} is a vector of dummy variables for the periods after the period of migration. The time-specific effect ε_t is captured by a set of dummy variables for all the quarters included in the sample (from the third quarter of 1994 to the fourth quarter of 2002). Given that equation 1 is fitted using the fixed effects method, all the time invariant individual characteristics (e.g. gender or region of origin) and the individual effects ε_i are removed from the estimation. The estimated φ_B , δ_M , and θ_A 's and their standard errors (clustered at the individual level) for work and non-work migrants are reported in panel A of table 10. Column 1 shows that during the quarter of migration, a work migrant earns on

Figure 14. Employment Share for Migrant Workers by Quarter of Migration

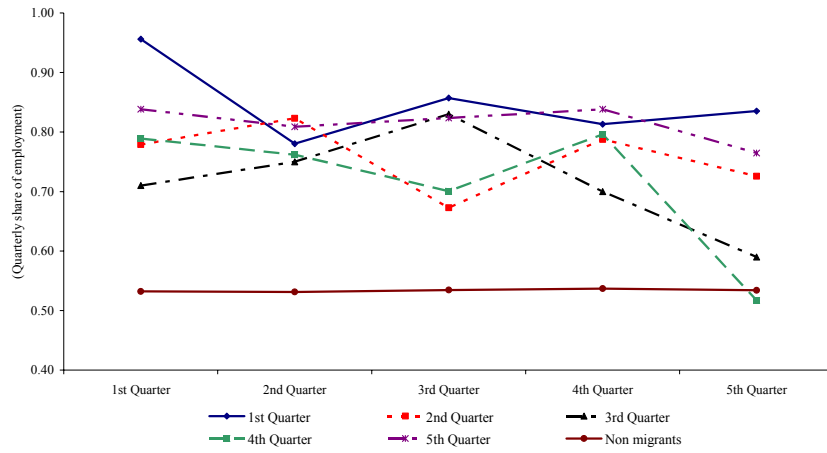


Figure 15. Employment Share for Non-Work Migrants by Quarter of Migration

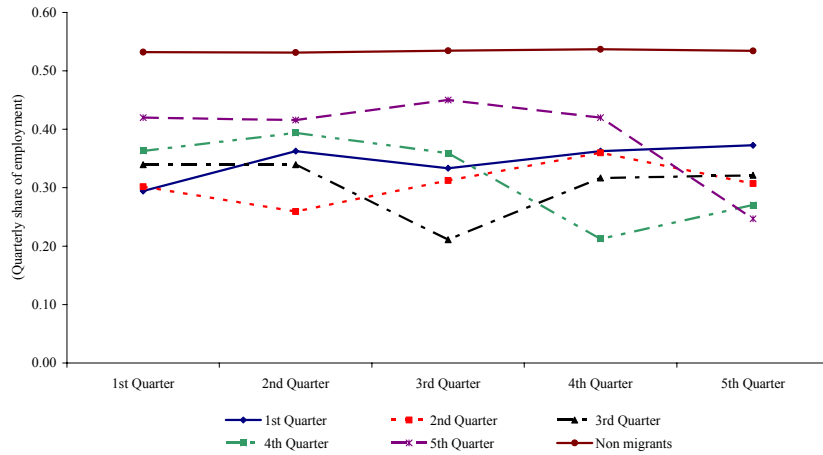


Figure 16. Employment Share for People that Migrated in the 1st and the 5th Quarters

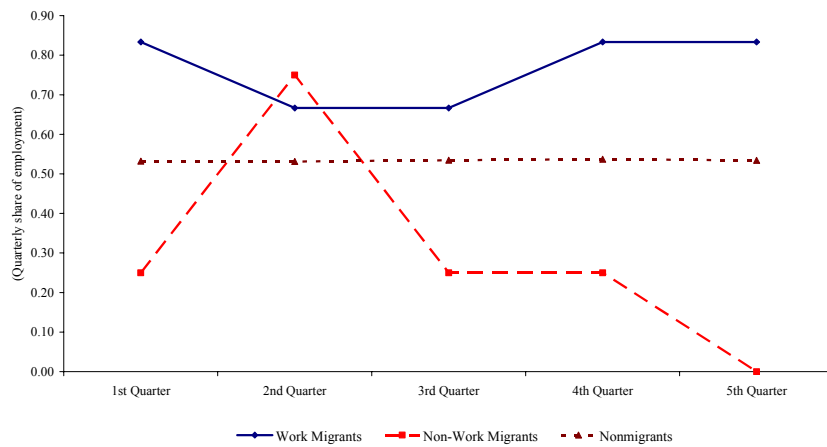


Table 10: Fixed Effects Estimates of the Effect of Temporary Migration on ln(hourly earnings), ln(weekly hours), and Employment

| | Work Migrants | | | Non-Work Migrants | | |
|---|----------------------------|-------------------------|-----------------------|----------------------------|-------------------------|-----------------------|
| | (1) ln(hourly earnings) | (2) ln(weekly hours) | (3) Employment | (4) ln(hourly earnings) | (5) ln(weekly hours) | (6) Employment |
| Panel A. Including Individual Observable Characteristics | | | | | | |
| 4 quarters before being in U.S. | -0.129 [0.175] | 0.104 [0.078] | 0.015 [0.048] | 0.044 [0.340] | -0.006 [0.096] | -0.004 [0.029] |
| 3 quarters before being in U.S. | -0.111 [0.172] | 0.120 [0.074] | -0.016 [0.046] | 0.079 [0.330] | -0.029 [0.087] | -0.004 [0.027] |
| 2 quarters before being in U.S. | -0.184 [0.171] | 0.108 [0.072] | -0.047 [0.044] | 0.140 [0.326] | -0.039 [0.083] | -0.003 [0.026] |
| 1 quarter before being in U.S. | -0.183 [0.165] | 0.095 [0.069] | -0.054 [0.042] | 0.164 [0.324] | -0.040 [0.082] | -0.020 [0.025] |
| During stay in U.S. | 0.753 *** [0.176] | 0.177 ** [0.072] | -0.073 [0.046] | 0.529 [0.393] | -0.119 [0.146] | -0.103 *** [0.026] |
| 1 quarter after being in U.S. | -0.061 [0.160] | 0.114 * [0.067] | -0.115 *** [0.042] | 0.146 [0.317] | -0.031 [0.076] | -0.051 ** [0.025] |
| 2 quarters after being in U.S. | -0.170 [0.166] | 0.123 * [0.070] | -0.074 [0.045] | 0.152 [0.324] | 0.010 [0.084] | -0.035 [0.025] |
| 3 quarters after being in U.S. | 0.003 [0.168] | 0.104 [0.071] | -0.070 [0.048] | 0.182 [0.327] | -0.058 [0.093] | -0.040 [0.027] |
| 4 quarters after being in U.S. | 0.008 [0.172] | 0.171 ** [0.074] | -0.089 * [0.052] | 0.100 [0.344] | 0.048 [0.117] | -0.035 [0.034] |
| No. of observations | 2,826,450 | 3,182,119 | 6,271,852 | 2,824,869 | 3,180,262 | 6,272,752 |
| No. of groups | 782,995 | 834,179 | 1,257,181 | 782,612 | 833,816 | 1,257,356 |
| Panel B. Excluding Individual Observable Characteristics | | | | | | |
| 4 quarters before being in U.S. | -0.114 [0.174] | 0.099 [0.078] | -0.012 [0.057] | 0.049 [0.343] | -0.012 [0.094] | 0.012 [0.058] |
| 3 quarters before being in U.S. | -0.111 [0.170] | 0.118 [0.074] | -0.029 [0.055] | 0.089 [0.333] | -0.040 [0.085] | 0.016 [0.054] |
| 2 quarters before being in U.S. | -0.182 [0.170] | 0.107 [0.073] | -0.061 [0.054] | 0.143 [0.328] | -0.046 [0.082] | 0.019 [0.053] |
| 1 quarter before being in U.S. | -0.183 [0.164] | 0.093 [0.069] | -0.072 [0.051] | 0.163 [0.326] | -0.042 [0.080] | -0.015 [0.052] |
| During stay in U.S. | 0.737 *** [0.175] | 0.162 ** [0.072] | -0.012 [0.056] | 0.530 [0.395] | -0.136 [0.144] | -0.139 *** [0.054] |
| 1 quarter after being in U.S. | -0.068 [0.159] | 0.107 [0.068] | -0.133 *** [0.050] | 0.144 [0.319] | -0.040 [0.075] | -0.051 [0.052] |
| 2 quarters after being in U.S. | -0.175 [0.165] | 0.119 * [0.071] | -0.093 * [0.055] | 0.149 [0.327] | -0.004 [0.083] | -0.030 [0.053] |
| 3 quarters after being in U.S. | -0.001 [0.167] | 0.101 [0.072] | -0.092 [0.057] | 0.183 [0.330] | -0.068 [0.092] | -0.045 [0.055] |
| 4 quarters after being in U.S. | 0.003 [0.171] | 0.166 ** [0.075] | -0.084 [0.063] | 0.099 [0.347] | 0.039 [0.115] | -0.031 [0.062] |
| No. of observations | 2,877,459 | 3,236,549 | 6,352,933 | 2,875,879 | 3,234,698 | 6,353,830 |
| No. of groups | 795,711 | 847,178 | 1,273,093 | 795,328 | 846,815 | 1,273,267 |
| Panel C. Including Individual Observable Characteristics and Excluding B_{it} and A_{it} Dummy Variables | | | | | | |
| During stay in U.S. | 0.886 *** [0.046] | 0.063 *** [0.015] | -0.007 [0.012] | 0.390 * [0.232] | -0.088 [0.106] | -0.077 *** [0.008] |
| No. of observations | 2,876,865 | 3,235,811 | 6,351,164 | 2,875,285 | 3,233,960 | 6,352,060 |
| No. of groups | 795,675 | 847,144 | 1,273,081 | 795,292 | 846,781 | 1,273,255 |

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All regressions include quarter dummies. Individual controls include a quadratic term on experience, years of schooling, marital status, and an informality indicator. Robust standard errors clustered at the individual level are shown in brackets.

average 112% more than when he is in Mexico, and this effect is significant at the 1% level. Column 4 indicates that the effect in the case of non-work migrants is much smaller and not significant.

The semi-logarithmic model in equation 1 can also be used to estimate the effect of temporary migration on weekly hours worked. The corresponding results are reported in columns 2 and 5 of table 10. Column 2 shows that during the quarter of migration, a work migrant works on average 19% more hours per week than when he is Mexico, and as with earnings, this effect is significant at a 1% level. In contrast, column 5 indicates that migrating to the United States does not affect the weekly hours worked by non-work migrants.

Finally, in order to estimate the effect of temporary migration on the likelihood of employment, equation 1 is also fitted for a binary variable which is equal to 1 if individual i is employed at time t , and equal to 0 otherwise. The corresponding estimates are shown in columns 3 and 6 of table 10. Column 3 shows that the likelihood of employment for a work migrant is lower than for non migrants during the period immediately after migration, indicating that these people face an adjustment process when they return from the U.S. and try to join the Mexican labour force again. Alternatively, it could also be indicating that migrant workers tend to substitute their labour supply in Mexico with their labour supply in the U.S. On the other hand, for non-work migrants column 6 indicates that their likelihood of employment is significantly lower only during the quarter of migration and the quarter immediately after it.

Panel B in table 10 repeats the estimations excluding the time variant individual characteristics. The results are very similar to those in panel A, indicating that observable characteristics do not play a very important role. Also, F-tests for the joint significance of the B_{it} and A_{it} variables in panel A were carried out. The null hypothesis of no significance could not be rejected for the regressions in columns 2, 4, and 5. For this reason, panel C shows the estimation results excluding these variables. The effect of temporary migration on earnings for work migrants is now larger, and the effect on hours is smaller, indicating that Mexican workers increase their weekly

hours worked by about 6.5% when they are in the United States. For the case of non-work migrants, there is now an increase of 48% in earnings, significant at the 10% level, and a smaller effect on the likelihood of employment.

The coefficients reported in table 10 are estimates of the effects of temporary migration within individuals. In order to measure these effects between individuals, equation 1 is also fitted using random effects. The results are reported in table 11, and they are all very similar to the ones obtained under fixed effects. However, across most of the specifications, Hausman, J. A. (1978) tests reject the null hypothesis that fixed and random effects coefficients are not systematically different, implying that random effects are inconsistent and that the individual effects should not be treated as independent of the other regressors in the model. Therefore, fixed effects estimation is effectively controlling for possible self-selection biases.

To conclude the econometric analysis, equation 1 is modified in order to allow for interactions between the dummy variable for migration M_{it} and some of the individual characteristics X_{it} that could have an effect on the returns to temporary migration to United States. For example, more experienced and more skilled people may perform better in the U.S. labour market, or perhaps people migrating from regions other than the traditional sending region (see section 3) perform worse due to the lack of well-established networks abroad. To see this, the equation becomes:

$$y_{it} = X_{it}\beta_X + M_{it}\delta_M + (X_{it} \times M_{it})\mu_{(X \times M)} + \varepsilon_i + \varepsilon_t + \varepsilon_{it} \quad (2)$$

Equation 2 is fitted using fixed effects, and the estimated coefficients δ_M and $\mu_{(X \times M)}$ are reported in table 12. The results for hourly earnings indicate that the returns to temporary migration decrease with years of potential experience and years of schooling, particularly for the case of work migrants. It seems to imply that more skilled workers can do better also in the Mexican labour market, and therefore the benefits from moving to the U.S. are lower for them. Regarding the regions of origin, people migrating from the northern states have higher returns, while people migrating from the southern states have lower returns. This could be due to either of three

Table 11: Random Effects Estimates of the Effect of Temporary Migration on ln(hourly earnings), ln(weekly hours), and Employment

| | Work Migrants | | | Non-Work Migrants | | |
|---|----------------------------|-------------------------|-----------------------|----------------------------|-------------------------|-----------------------|
| | (1) ln(hourly earnings) | (2) ln(weekly hours) | (3) Employment | (4) ln(hourly earnings) | (5) ln(weekly hours) | (6) Employment |
| Panel A. Including Individual Observable Characteristics | | | | | | |
| nonmigrant dummy | -0.089 [0.146] | 0.058 [0.065] | -0.014 [0.044] | -0.117 [0.225] | 0.083 [0.088] | 0.074 *** [0.027] |
| 4 quarters before being in U.S. | -0.020 [0.152] | 0.112 [0.072] | 0.010 [0.047] | -0.127 [0.238] | -0.003 [0.101] | -0.012 [0.030] |
| 3 quarters before being in U.S. | 0.004 [0.149] | 0.126 * [0.067] | -0.018 [0.045] | -0.126 [0.227] | 0.012 [0.090] | -0.013 [0.027] |
| 2 quarters before being in U.S. | -0.055 [0.148] | 0.116 * [0.066] | -0.047 [0.043] | -0.071 [0.224] | 0.003 [0.088] | -0.010 [0.026] |
| 1 quarter before being in U.S. | -0.046 [0.143] | 0.101 [0.063] | -0.053 [0.042] | -0.024 [0.223] | -0.003 [0.087] | -0.026 [0.026] |
| During stay in U.S. | 0.941 *** [0.151] | 0.201 *** [0.065] | -0.068 [0.045] | 0.379 [0.291] | -0.063 [0.134] | -0.108 *** [0.027] |
| 1 quarter after being in U.S. | 0.076 [0.140] | 0.119 * [0.061] | -0.110 *** [0.041] | -0.030 [0.217] | 0.006 [0.084] | -0.055 ** [0.026] |
| 2 quarters after being in U.S. | -0.046 [0.144] | 0.128 ** [0.065] | -0.068 [0.044] | -0.011 [0.226] | 0.025 [0.090] | -0.036 [0.026] |
| 3 quarters after being in U.S. | 0.119 [0.147] | 0.108 * [0.066] | -0.063 [0.048] | 0.017 [0.228] | -0.027 [0.098] | -0.040 [0.028] |
| 4 quarters after being in U.S. | 0.105 [0.152] | 0.178 *** [0.069] | -0.081 [0.051] | -0.028 [0.243] | 0.017 [0.124] | -0.027 [0.034] |
| No. of observations | 2,826,450 | 3,182,119 | 6,271,852 | 2,824,869 | 3,180,262 | 6,272,752 |
| No. of groups | 782,995 | 834,179 | 1,257,181 | 782,612 | 833,816 | 1,257,356 |
| Panel B. Excluding Individual Observable Characteristics | | | | | | |
| nonmigrant dummy | -0.196 [0.154] | -0.032 [0.067] | -0.329 *** [0.053] | -0.140 [0.300] | 0.137 * [0.079] | 0.164 *** [0.053] |
| 4 quarters before being in U.S. | -0.038 [0.159] | 0.110 [0.073] | -0.012 [0.057] | -0.165 [0.311] | -0.025 [0.091] | 0.009 [0.056] |
| 3 quarters before being in U.S. | -0.039 [0.156] | 0.126 * [0.069] | -0.030 [0.055] | -0.134 [0.302] | -0.022 [0.080] | 0.012 [0.053] |
| 2 quarters before being in U.S. | -0.103 [0.155] | 0.117 * [0.068] | -0.061 [0.053] | -0.087 [0.299] | -0.027 [0.079] | 0.015 [0.051] |
| 1 quarter before being in U.S. | -0.100 [0.150] | 0.101 [0.065] | -0.070 [0.050] | -0.035 [0.299] | -0.022 [0.077] | -0.019 [0.050] |
| During stay in U.S. | 0.856 *** [0.159] | 0.173 *** [0.067] | -0.006 [0.055] | 0.354 [0.354] | -0.111 [0.127] | -0.142 *** [0.052] |
| 1 quarter after being in U.S. | 0.024 [0.146] | 0.110 * [0.063] | -0.127 ** [0.050] | -0.039 [0.292] | -0.020 [0.072] | -0.054 [0.050] |
| 2 quarters after being in U.S. | -0.086 [0.151] | 0.126 * [0.066] | -0.085 [0.055] | -0.016 [0.301] | -0.007 [0.081] | -0.032 [0.051] |
| 3 quarters after being in U.S. | 0.093 [0.153] | 0.109 [0.067] | -0.082 [0.057] | 0.027 [0.302] | -0.056 [0.089] | -0.045 [0.054] |
| 4 quarters after being in U.S. | 0.084 [0.158] | 0.178 ** [0.070] | -0.069 [0.063] | -0.025 [0.315] | -0.003 [0.116] | -0.028 [0.060] |
| No. of observations | 2,877,459 | 3,236,549 | 6,352,933 | 2,875,879 | 3,234,698 | 6,353,830 |
| No. of groups | 795,711 | 847,178 | 1,273,093 | 795,328 | 846,815 | 1,273,267 |
| Panel C. Including Individual Observable Characteristics and Excluding B_{it} and A_{it} Dummy Variables | | | | | | |
| nonmigrant dummy | -0.083 *** [0.021] | -0.062 *** [0.011] | 0.046 *** [0.009] | -0.067 ** [0.030] | 0.078 *** [0.024] | 0.104 *** [0.008] |
| During stay in U.S. | 0.946 *** [0.041] | 0.079 *** [0.014] | -0.006 [0.012] | 0.425 ** [0.191] | -0.066 [0.094] | -0.078 *** [0.008] |
| No. of observations | 2,826,450 | 3,182,119 | 6,271,852 | 2,824,869 | 3,180,262 | 6,272,752 |
| No. of groups | 782,995 | 834,179 | 1,257,181 | 782,612 | 833,816 | 1,257,356 |

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All regressions include quarter dummies. Individual controls include a quadratic term on experience, years of schooling, marital status, gender, a head-of-household indicator, regional dummies, and an informality indicator. Robust standard errors clustered at the individual level are shown in brackets.

Table 12: Fixed Effects Estimates of the Interactions Between the Temporary Migration Dummy and the Individual Characteristics

| | Work Migrants | | | Non-Work Migrants | | |
|--------------------------|----------------------------|-------------------------|-----------------------|----------------------------|-------------------------|-----------------------|
| | (1) ln(hourly earnings) | (2) ln(weekly hours) | (3) Employment | (4) ln(hourly earnings) | (5) ln(weekly hours) | (6) Employment |
| migration | 1.460 *** [0.271] | 0.029 [0.078] | -0.079 [0.066] | 1.691 * [0.983] | -0.728 * [0.414] | -0.197 *** [0.038] |
| experience*migration | -0.015 *** [0.005] | 0.002 [0.002] | 0.006 *** [0.001] | -0.018 [0.024] | 0.006 [0.007] | 0.002 *** [0.001] |
| school*migration | -0.042 *** [0.015] | 0.005 [0.004] | 0.010 *** [0.004] | -0.161 ** [0.075] | 0.073 ** [0.033] | 0.001 [0.003] |
| married*migration | -0.024 [0.118] | 0.017 [0.042] | -0.061 * [0.033] | 0.302 [0.735] | -0.330 [0.241] | 0.050 *** [0.016] |
| male*migration | 0.021 [0.175] | -0.048 [0.065] | -0.042 [0.048] | 0.492 [0.501] | 0.142 [0.168] | -0.034 [0.021] |
| head household*migration | 0.075 [0.135] | -0.019 [0.047] | -0.131 *** [0.036] | -0.170 [0.553] | -0.201 [0.189] | 0.018 [0.019] |
| border*migration | -0.116 [0.122] | 0.004 [0.038] | -0.018 [0.030] | 0.437 [0.504] | -0.136 [0.276] | 0.039 *** [0.017] |
| northern*migration | 0.282 ** [0.127] | -0.024 [0.040] | 0.062 * [0.032] | 1.011 ** [0.477] | -0.044 [0.165] | 0.011 [0.021] |
| centre*migration | 0.216 [0.235] | 0.048 [0.061] | 0.070 [0.047] | (dropped) | -1.046 *** [0.261] | -0.002 [0.038] |
| southern*migration | -0.440 ** [0.186] | 0.037 [0.068] | -0.028 [0.055] | (dropped) | 1.401 *** [0.340] | 0.117 *** [0.048] |
| No. of observations | 2,826,450 | 3,182,119 | 6,351,164 | 2,824,869 | 3,180,262 | 6,352,060 |
| No. of groups | 782,995 | 834,179 | 1,273,081 | 782,612 | 833,816 | 1,273,255 |

***, **, and * indicate significance at the 1%, 5%, and 10% level, respectively. All regressions include quarter dummies. The missing coefficients correspond to variables dropped due to multicollinearity. Robust standard errors clustered at the individual level are shown in brackets.

factors: first, people from the north have more developed networks in the United States than people from the south; second, people from the south face higher migration costs due to the distance from the border; or third, economic activities and availability of technology in the north may be closer to that in the U.S., translating into a comparative advantage of this region with respect to the south.

The estimates for weekly hours worked show that, while there are basically no differences among work migrants, non-work migrants tend to work more time the more educated they are. They also work significantly less hours during the quarter of migration if they come from the centre states, and significantly more hours if they come from the southern states.

Finally, the likelihood of employment for work migrants increases with years of potential experience and schooling, and it is lower for married workers and heads of households. It is also a bit higher for people migrating from the northern states. For non-work migrants, the likelihood of employment is higher for married people and for those coming from the border and the southern states.

In sum, the evidence in this section indicates that the Mexicans that migrate temporarily to the United States for work reasons get significantly higher earnings in the U.S. labour market than in the Mexican one during the period of migration. They also tend to work longer hours, as suggested by the standard theory on the response of the labour supply to temporary positive shocks to real wages. It is also found that this group of workers have a higher likelihood of non employment after return migration. Lastly, the effect of temporary migration on earnings seems to be lower for more skilled workers and for those migrating from the most distant regions in Mexico, relative to the United States.

5. Conclusions

Mexican migration to the United States has been a very important issue throughout the twentieth century, and its relevance has reached unprecedented levels during the last two decades. From the Mexican side, remittances of Mexican workers account for approximately 2.3% of the GDP. From the United States side, about 8.3% of the employed people in that country are from Mexican origin, and the increasing problem of illegal immigration has derived in the approval by the U.S. Congress of the construction of a 1,120 kilometers fence along the U.S.-Mexico border.

Even though there is a huge body of literature that analyzes many different aspects of this phenomenon, the economic performance of migrants with respect to the Mexican labour markets has received very little attention. Thus, the objective of this paper was to fill this gap in the literature by presenting new evidence on the effect that temporary migration to the United States has on the earnings of Mexican workers.

The present work used data from the Mexican National Survey of Urban Labour (ENEU) for the period between 1994 and 2002, a source that has not been used before to answer this question regardless of some noticeable advantages, such as its quarterly coverage, its panel structure, and the fact that it contains information about migrants during their periods abroad. On the other hand, there may also be some concerns about the representativeness of the ENEU survey in analyzing migration. First, as the survey covers only the 48 main cities in the country, any estimation based on these

data may be irrelevant if an insignificant fraction of the migrants comes from urban places; and second, the survey captures mainly temporary migration. However, the discussion in sections 2 and 3 provided evidence supporting the importance of both the share of migration originating in urban places and the share of temporary migration in total Mexican migration to the United States, leading to the conclusion that the ENEU is a valuable data source worth using.

Thus, the econometric analysis developed in section 4 indicates that Mexicans that migrate temporarily to the United States for work reasons get significantly higher earnings in the U.S. labour market than in the Mexican one during the period of migration. They also tend to work longer hours and face a higher likelihood of non employment during the period immediately after returning to Mexico. Finally, the gains from temporary migration are lower for more skilled workers and for those migrating from the most distant regions in Mexico, relative to the United States.

References

- ALEMAN-CASTILLA, B. (2006): "The Effect of Trade Liberalization on Informality and Wages: Evidence from Mexico," *CEP Discussion Papers*, pp. 1-71.
- BEAN, F. D., R. CORONA, R. TUIRAN, and K. A. WOODROW-LAFIELD (1998): "The Quantification of Migration between Mexico and the United States," *Migration Between Mexico and the United States: Binational Study*, Volume 1: Thematic Chapters, pp. 1-89.
- BEAN, F. D., R. CORONA, R. TUIRAN, K. A. WOODROW-LAFIELD, and J. V. HOOK (2001): "Circular, Invisible, and Ambiguous Migrants: Components of Difference in Estimates of the Number of Unauthorized Mexican Migrants in the United States," *Demography*, Vol. 38, pp. 411-422.
- BORJAS, G. J. (1982): "The Earnings of Male Hispanic Immigrants in the United States," *Industrial and Labour Relations Review*, Vol. 35, pp. 343-353.
- (1987): "Self-Selection and the Earnings of Immigrants," *The American Economic Review*, Vol. 77, pp. 531-553.
- (1989): "Immigrant and Immigrant Earnings: A Longitudinal Study," *Economic Inquiry*, Vol. XXVII, pp. 21-37.
- BORJAS, G. J., and L. F. KATZ (2006): "The Evolution of the Mexican-Born Workforce in the United States," *NBER Working Papers*, pp. 1-66.
- BUSTAMANTE, J. A., G. JASSO, J. E. TAYLOR and P. T. LEGARRETA (1998a): "Mexico-to-U.S. Migrant Characteristics from Surveys Involving Samples Drawn in Mexico," *Migration Between Mexico and the United States: Binational Study*, Volume 2: Research Reports and Background Materials, pp. 769-778.
- (1998b): "Characteristics of Migrants: Mexicans in the United States," *Migration Between Mexico and the United States: Binational Study*, Volume 1: Thematic Chapters, pp. 91-160.
- (1998c): "Mexico-to-U.S. Migrant Characteristics from Mexican Data Sources," *Migration Between Mexico and the United States: Binational Study*, Vol. 2: Research Reports and Background Materials, pp. 779-818.
- CALDERA, S. and P. PIPER/BACH (2006): "Immigration Policy in the United States," The Congress of the United States - Congressional Budget Office.
- CHIQUIAR, D. and G. H. HANSON (2005): "International Migration, Self-Selection, and the Distribution of Wages: Evidence from Mexico and the United States," *Journal of Political Economy*, Vol. 113, pp. 239-281.
- CORNELIUS, W. A. (1992): "From Sojourners to Settlers: The Changing Profile of Mexican Immigration to the United States," *U.S.-Mexico Relations: Labour Markets Interdependence*, pp. 155-195.

- CRAIG, R. B. (1971): *The Bracero Program: Interest Groups and Foreign Policy*. Austin: University of Texas Press.
- CUECUECHA, A. (2005): "Choice Based Sample Techniques, Undercounting and the Study of the Characteristics of Mexican Immigrants to the Us," Instituto Tecnológico Autónomo de México. Centro de Investigación y Estudios de Posgrado. Working paper, pp. 1-49.
- DUNN, T. J. (1996): *The Militarization of the U.S.-Mexico Border, 1978-1992: Low-Intensity Conflict Doctrine Comes Home*. University of Texas at Austin.
- DURAND, J. and D. S. MASSEY (1992): "Mexican Migration to the United States: A Critical Review," *Latin American Research Review*, Vol. 27, pp. 3-42.
- DURAND, J., D. S. MASSEY and R. M. ZENTENO (2001): "Mexican Immigration to the United States: Continuities and Changes," *Latin American Research Review*, Vol. 36, pp. 107-126.
- DUSTMANN, C. (1991): "Earnings Adjustment of Temporary Migrants," *Journal of Population Economics*, Vol. 6, pp. 153-168.
- DUSTMANN, C. and O. KIRCHKAMP (2002): "The Optimal Migration Duration and Activity Choice after Re-Migration," *Journal of Development Economics*, Vol. 67, pp. 351-372.
- EPSTEIN, G. S., A. L. HILLMAN and A. WEISS (1999): "Creating Illegal Immigrants," *Journal of Population Economics*, Vol. 12, pp. 3-21.
- FELICIANO, Z. M. (2001): "The Skill and Economic Performance of Mexican Immigrants from 1910 to 1990," *Explorations in Economic History*, Vol. 38, pp. 386-409.
- GAMIO, M. (1969): *El Emigrante Mexicano. La Historia De Su Vida*. Mexico. UNAM.
- GRISWOLD, D. T. (2002): "Willing Workers: Fixing the Problem of Illegal Mexican Migration to the United States," *Trade Policy Analysis*, pp. 1-28.
- HANSON, G. H. (2006): "Illegal Migration from Mexico to the United States," University of California, San Diego and National Bureau of Economic Research, pp. 1-71.
- HAUSMAN, J. A. (1978): "Specification Tests in Econometrics," *Econometrica*, Vol. 46, pp. 1251-1271.
- JENKS, R. (2001): "The USA Patriot Act of 2001: A Summary of the Anti-Terrorism Law's Immigration-Related Provisions," *Backgrounder. Center for Immigration Studies*, pp. 1-4.
- LATAPI, A. E., P. MARTIN, P. S. DAVIES, G. L. CASTRO and K. DONATO (1998): "Factors That Influence Migration," *Migration Between Mexico and the United States: Binational Study*, Volume 1: Thematic Chapters, pp. 163-250.

- LOZANO-ASCENCIO, F., B. R. ROBERTS and F. D. BEAN (1996): "The Interconnectedness of Internal and International Migration: The Case of the United States and Mexico," *Texas Population Research Center Papers*, pp. 1-30.
- MACURDY, T. E. (1981): "An Empirical Model of Labor Supply in a Life-Cycle Setting," *Journal of Political Economy*, Vol. 86, pp. 1059-1085.
- MARCELLI, E. A. and W. A. CORNELIUS (2001): "The Changing Profile of Mexican Migrants to the United States: New Evidence from California and Mexico," *Latin American Research Review*, Vol. 36, pp. 105-131.
- MARKUSEN, J. R. and S. ZAHNISER (1997): "Liberalization and Incentives for Labour Migration: Theory with Applications to Nafta," *NBER Working Paper Series*, Working Paper 6232, pp. 1-48.
- MARTIN, P. (1998): "Guest Workers: Past and Present," *Migration Between Mexico and the United States: Binational Study*, Volume 3: Research Reports and Background Materials, pp. 877-895.
- MASSEY, D. S., J. DURAND and N. J. MALONE (2002): "Beyond Smoke and Mirrors: Mexican Immigration in an Era of Economic Integration," *New York. Russell Sage Foundation*.
- MEXICAN_EMBASSY_IN_THE_UNITED_STATES (2006): "Mexico's Public Policies to Foster Circular Migration," Mexico-U.S.: Migration and Border Security www.embassyofmexico.org, pp. 1-24.
- MISHRA, P. (2003): "Effect of Emigration on Wages in Developing Countries: Evidence from Mexico," Department of Economics. Columbia University, pp. 1-45.
- PAPAIL, J. (1998): "Factores De La Migracion Y Redes Migratorias," *Migration Between Mexico and the United States: Binational Study*, Volume 3: Research Reports and Background Materials, pp. 975-1000.
- PAULSON, A. and A. SINGER (2000): "Savings and Settlement: Evidence from Mexican Migrants," *mimeo*, pp. 1-37.
- RANNEY, S. and S. KOSSOUDJI (1983): "Profiles of Temporary Mexican Labour Migrants to the United States," *Population and Development Review*, Vol. 9, pp. 475-493.
- WOODROW-LAFIELD, K. A. (1998): "Estimating Authorized Migration," *Migration Between Mexico and the United States: Binational Study*, Volume 2: Research Reports and Background Materials, pp. 619-682.
- WOODRUFF, C. and R. ZENTENO (2001): "Remittances and Micro Enterprises in Mexico," UCSD and ITESM-Guadalajara, pp. 1-40.

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