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Economic and Social Determinants of Mexican Circular and Permanent Migration

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Abstract

This study seeks to determine the factors that have impacted the duration of the Mexican temporary and permanent migrant trips to the United States. The explanatory variables consist of socioeconomic factors, human capital, migration experience, social capital and labor variables. The data collected between 1987 and 2007 showed that more than half of the Mexican migrants that enter the USA did not have documents and that social networks are an important factor determining migrant trip duration. Also, the restrictive USA migration policies since 2001 have negatively affected migrant trip duration. A logit model of migrant trip duration determinants is estimated. The results showed that gender becomes more important for trips of more than five years; also married migrants are likely to stay on a permanent basis. Labor skills and education coefficients and the use of *coyotes* have become increasingly important and their coefficients imply a higher probability for longer trips. The dummy variable for anti-immigration policy showed a higher probability for permanent migration, reflecting difficulties in crossing the border.

Key words: Mexican migration, Migration Policies, Migrant trip duration.
JEL Classification: F22, J61, J15.

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Introduction

One of the characteristics of contemporary migration is the circular and repeated flow of migrants between home and host countries. However, during the current globalization period, there has been a decrease in the flow of circular or repeated migration. For this reason it is important to estimate the economic determinants of Mexican migrants' earnings in the USA and also the determinants of length of their stay (Ranney and Kossoudji, 1983).

A large part of the empirical research and theory has been focused on the permanent migration paradigm. However, migrant workers do not always want to settle in destination countries, even though the existence of highly restrictive policies and barriers to migration tend to push them into a more permanent migration trip situation.

As a result of increasing flows of migrants both in North America and Europe, governments have been seeking mechanisms to regulate migration and to balance demand for a decreasing supply of both skilled and unskilled labor. Consequently, migration reform has been increasingly debated in industrialized countries (USA, France, Spain, etc.). The specifics of implementation in which migration reform programs should be taking place have been discussed in several multilateral institutions such as the World Trade Organization (WTO), with various forms of temporary migration programs under consideration, such as the guest-worker program negotiations and the temporary cross-border movement discussions in the Doha Development Round (Schiff Maurice, 2007).

Therefore, temporary labor migration is becoming more relevant, since the developed economies, with their finished demographic transition, have been experiencing a shortage of labor supply, both skilled and unskilled. Additionally, the temporary migration programs in countries such as Germany and Canada reflect the lack of enthusiasm for admitting foreign unskilled workers on a permanent basis.

In the case of Mexican migration, an important number of migrants do not settle permanently in the United States (Massey *et al.*, 1987; Reyes, 2001). In fact, migration flows can be divided into two groups: those workers with the aim of staying permanently in the receiving country as a result of economic conditions, family and social ties, or actions taken by governments (Cornelius, 1976 and 1978; Massey *et al.*, 1987), and migrant flows that have the intention of returning to the origin country, creating a circular migration (repeated return). The main reason for circular migration is a combination of migrants' preference for their home country's cultural and familiar background, a lack of employment opportunities in their home

country and the objective of sending remittances to their households who remain in the home countries. In that sense, the trip duration of migrants depends on economic factors, the opportunity costs of migration and household ties and requirements in their home countries (Lindstrom, 1996).

However, US immigration policy has to be incorporated as an additional factor in the set of determinants of migration trip duration changes because it has imposed higher restrictions on migrants' border crossings. As a result, the effect of home country factors encouraging migration and the possibilities of potential benefits in the USA have been affected by the recent actions taken by the USA government to control migration flows into that country.

This paper seeks to determine the factors affecting the duration of the Mexican permanent and circular migration trips to the USA. To accomplish that objective, the study estimates the impact of a set of economic, social, labor and migration experience variables on the duration of migrant's trips. The methodology is based on a multinomial logistic model, which was set up to capture the probability of the above mentioned variables in the migrants' decisions to choose the time length of the migration trip.

The paper is organized as follows: the first section is the introduction, the second section discusses the concepts of trip duration and circular migration and their impact on the characteristics of the labor supply of Mexican migrants in the USA. The third section deals with USA immigration policy and its impact on the Mexican trip duration. The fourth section describe the Mexican Migration Project survey (MMP), describes the logit multinomial model and presents estimates of the main variables used in the model. Section five presents and discusses the relevant findings of the regression. Finally the last section presents the fundamental conclusions of the paper and discusses the implications for migration policy for both the USA and Mexican governments.

1. Trip Duration and Circular Migration

For the case of Mexican migration there is scarce literature on circular migration, and the contributions have mainly been developed in the field of sociology, such as the paper by Massey and Espinosa (1997), which points out that Mexican migration to the USA is, to a large extent, made up of circular migrants. According to this paper, once they carried out their first trip, migrants have a higher probability of repeating the trip again. Each move creates increasing possibilities for establishing a 'self-sustaining" circular migration flow through the accumulation of "migration-specific capital."

Traditionally Mexican migration has been defined by an important flow of circular migration between Mexico and the USA. This type of migration has been occurring on an important scale, creating important challenges to both policymakers and researchers in both countries. This characteristics of the Mexican migration to the United States have been addressed by different authors such as Cornelius (1976), Mines and de Janvry (1982), Ranney and Kossoudji (1983), Massey et al. (1987), White, Bean, and Espenshade (1990), Lindstrom (1996) and Reyes (2001). Those papers have underlined the temporary pattern of circular migration, its determinants in the origin and destination regions, and in the bi-national migrant communities.

Moreover, return migration has been viewed as a one-time event and circular migration as a process of continuous movement, and it might be considered a mechanism for optimizing or re-optimizing migrants' economic, social, and personal situation at every period. Therefore, from an economic perspective the basic foundations of circular migration relate to the expected gain from traveling back and forth between the host and home countries. For example, it can be a mechanism for minimizing the psychological costs of separating from familiar and cultural ties and may reflect strong preferences for frequent locational changes in maximizing utility.

In that perspective, the ability to repeatedly go back and forth between the home and the host country should be discussed for the experience of Mexican migration to the USA. It is relevant to underline that an important part of traditional migration was made up by a male workforce going home regularly to support their family with money earned abroad. Nowadays, with massive strict control of border crossings, the migrant's decisions include permanent or temporary options, making Mexican migration much more oriented toward remaining permanently and bringing their families to the USA.

Among other factors, cross-border movement of Mexican migrants is related to the temporary nature of employment and the degree of difficulty in crossing the border. Cultural and social issues are also important and increase the preference for living in the community of origin, encouraging the temporality of migration trips. Additionally, USA migration policies have resulted in much greater difficulty in crossing the USA-Mexico border after September 11, 2001, creating a new political context, which also has to be included in the analysis of the migrant trip duration.

Apparently, the restrictive migration policies have proven to be rather counter-productive. Consequently, it becomes relevant to study the behavior of temporary migrants, given that these make up an important share of the Mexican

migrant flows to the USA.[1] Also, the evaluation of factors explaining trip duration is important for developing migration policies oriented toward regulating migrant flows and elaborating a description of the characteristics and temporary nature of the Mexican labor supply in the USA. From that perspective, the present study is based on the assumption that the amount of labor supplied by migrants is determined both by the number of workers and the time duration of migrant permanence in the USA (Lindstrom, 1996).

2. USA Migration Policy and Trip Duration

It is well known that Mexican migration has increased markedly since the mid-1960s when the Bracero program ended and the USA economic expansion attracted labor migration from Mexico. During the eighties and nineties USA immigration policy was partially effective in slowing down the increasing migration flow of Mexican workers. In 1990, there were an estimated 2,040,000 unauthorized migrants and by 2000 the number increased to 4,808,000 expanding the total number of unauthorized Mexican migrants to 9,177,000.[2] The quantity of migrant flows underlines, on one hand, the limited success of the USA Border Patrol's efforts to control illegal immigration by increasing surveillance of the Mexico-USA border, and, on the other hand, that the intensity of the migration flows reflects deep economic determinants both in Mexico and in the USA, which have resulted in an increasing migration between both economies.

The USA government's response to the migration flows from Mexico was embodied in the United States Immigration Reform and Control Act of 1986 (IRCA), which was aimed at controlling undocumented migration and legalizing established illegal populations in the USA (Jones, 1995). IRCA included three major objectives for the control of illegal migration: 1) sanctions for employers hiring illegal migrants; 2) amnesty for undocumented migrants living in the United States for particular periods of time; and 3) tightened enforcement, by concentrating Border Patrol personnel and surveillance at the border between the USA and Mexico. These stipulations were put into effect between 1987 and 1988, with the goal of shifting migration policy towards an employment-based perspective for entry (Salt, 1992; Papademetriou, 1991).

As a result of the changes in the USA policy on illegal immigration based on IRCA, the United States granted permanent legal residence to 2.7 million

[1] According to data from Consejo Nacional de Poblacion (CONAPO), between 1993 and 2003, there were 3.26 million temporary migrants that traveled to the USA and 3.3 million returned from the USAJ to Mexico.

[2] Office of Policy and Planning U.S. Immigration and Naturalization Service.

individuals, from whom 74% were Mexican migrant workers (Hanson, 2004). However, since the establishment of IRCA, the amount of USA government resources destined to control migration flows have increased rapidly. Between 1985 and 2002, appropriations for border control activities, including the Border Patrol, inspections at legal ports of entry, and consular affairs, increased 306%, reaching $2.1 billion dollars; detention and removal/intelligence increased by $1.4 billion (751%); and interior investigations augmented to $349 million (320%). With respect to detention and removal, the expansion reached 806% between 1985 and 2003, increasing from $141 million in 1985 to $1.3 billion in 2003 (Migration Policy Institute, 2005).

It is worth mentioning that after September 11, appropriations for border control activities increased even more, reaching $2.8 billion in 2002. Appropriations for detention and removal/intelligence expanded 64% ($399 million) between 1996 and 1997. As a result, Border Patrol officials increased the number of apprehensions of migrants in violation of immigration laws when attempting illegal entry, or when found to have overstayed or violated conditions of their immigration status since 1995. The intensification of immigration control is an important factor that has generated an increase in the share of undocumented migrants in the total flows of Mexican migrants from an average of 52.7% in the period 1987-1994 to an average of 64.6% in the period 2002-2007.[3]

Moreover, circular migration is linked to undocumented migration, because the time length of migrant's trips has been extended in response to barriers erected to undocumented migration. This type of migration flow suffers a high human cost when migrants are intercepted and thus it has had an effect of increasing permanent residence for migrant entering the USA.

3. Trends and Structure of Mexican Migration Flows

The structure of Mexican migration flows to the USA since 1987 is characterized by two important trends. First, according to the MMP survey, there has been a decreasing trend of the number of average trips that migrants from Mexican communities are undertaking (Figure 1). In effect, since 1996 the average number of trips has declined from 4.4 per migrant to 1.6 trips in 2006. The estimates of the reduction in the number of trips carried out reflect serious obstacles to circular migration thus reducing it from the volume observed in previous years.

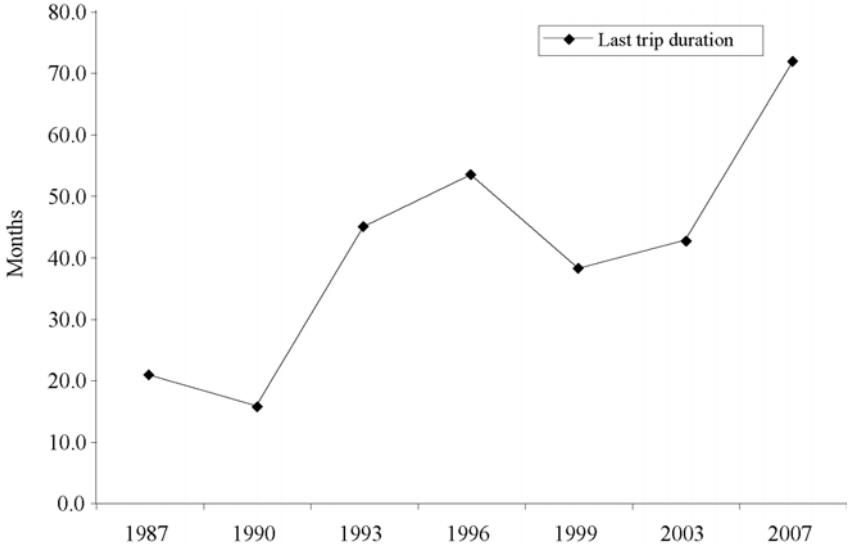
[3] According to own estimation with data from the MMP Survey 18, 2007. University of Princeton and Universidad de Guadalajara.

Figure 1
Number of Average Migration trips

Source: Own estimation with data from the MMP, University of Princeton and Universidad de Guadalajara.

Another import aspect of recent Mexican migration flows has to do with the time length of the last trip made by migrants. According to the information given by the MMP (Figure 2), the duration of trips increased to an average of 53.3 months of stay (4.4 years) and then declined somewhat to 38.1 months in 1999 (3.2 years), after which it rose very fast, reaching 71.87 months (6 years) in 2007. The data corroborates the increasing difficulty in crossing the border and its effect on the duration of Mexican migrant trips to the USA. This aspect becomes the other side of the coin and completes the picture describing a trend that suggests that migration temporality is changing and becoming more likely to be of a more permanent nature.

Figure 2
Mexican Migration Temporality



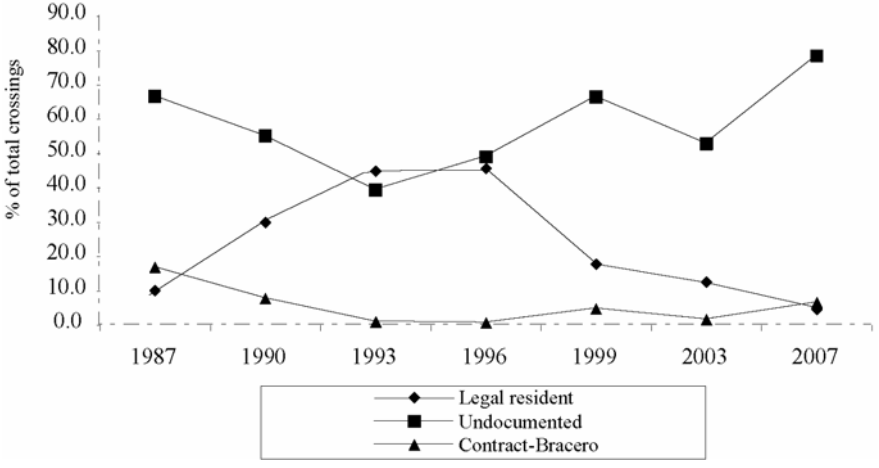
Source: Own estimation with data from the MMP, University of Princeton and Universidad de Guadalajara.

Therefore, there is evidence that recently the composition of Mexican migration flows to the USA has changed with respect to the shares of permanent and circular migration. The factors affecting the changes in the length and recurring migration trips by Mexican workers range from the possibility of return migration to the possibility of entering the USA labor market. According to Borjas (1990), migrants have greater incentive to adapt to the USA labor market when the possibility of return is limited. Therefore, it is very likely that the recent enforcement of border security mentioned earlier has impacted the flows of migrants from Mexico.

One of the effects of tighter migration policies has been the increase of the undocumented share in the total of migrants interviewed in the MMP. Figure 3 shows a declining trend of legal residents crossing the border and, on the other hand an expansion of undocumented migrant flows for the period 1987-2007.

Consequently, the riskier and more costly migration trips have impacted the temporality of migration trips by increasing their time length.

Figure 3
Migration Leal Status



However, there are other determinants of trip duration that are related to socioeconomic, market labor and community and familiar networks, which combined with tighter migration policies enforced in the USA have become more relevant in determining the possibility of successful migrant trips. The Mexican migrants' probability of crossing the border therefore becomes closely related to the increasing trend of seeking to stay longer periods of time, thus reinforcing permanent migration trips to the USA.

4. Theoretical and Methodological Aspects

4.1 The Conceptual Approach to migration

Establishing a cost-benefit model traditionally captures the logic of Mexican migrants' decisions to choose between temporary and permanent migration. From this perspective, migrants choose to migrate based on the expected discounted rate

of return in the destination country. On one hand, migrants estimate net earnings that are related to migrant labor skills and education and the possibility of obtaining a job. Such aspects summarize a number of possible variables that affect earning such as education, labor experience, the availability of family and community networks. On the other hand, migration trips, which imply costs from psychological aspects to the cost of *coyotes*, are subtracted from the benefits in order to obtain a net expected return to migration. According to Massey *et al.* (1998), the decision making process can be formilzed as follows:

$$ER(t) = \int_0^n P_1(t)\ P_2(t)Y_d(t)\text{-}P_3(t)]e^{-rt}dt\text{-}C(0)$$

Generally, the migration model consider that migrants do the cost-benefit calculation before they depart, however, the cost-benefit analysis can be considered as an ongoing process in which migrants are evaluating the net earnings over different periods of time. Therefore, migrants consider the probability *(P_1)* of successfully crossing the border (legally or illegally), the probability of getting a job in the destination country *(P_2)* and the probability of having monetary and psychological benefits from staying in their country or communities of origin *(P_3)*, this factor is related to their marital status, children, education, cultural background, etc. The integrated earning has to be discounted with respect to the cost of movement *(C)* which include physiological and the cost of migration as transportation the use of *coyotes*, etc. Finally *r* is the discount factor.

According to this model specification migrants determine migration patterns and therefore the time length of migration based upon the probability of earning monetary rewards, given the socioeconomic conditions, the barriers to entry the US and the probability of acquiring a job. As a result, there are several aspects that relate directly to the temporality or permanence of migrants. Furthermore, the probability of longer staying in the destination country has to do with the level of education, labor skills, and their migration experience of migrants. Therefore, the greater the labor and individual skills and human capital of the migrant, the greater the probability they have of staying permanently in the USA. Additionally, social, community and family conditions and networks generate an important set of resources that can reduce the cost of migration and assist in acquiring a job. Thus increasing the returns to migration and lengthening the stay in the destination country.

Therefore, the theoretical approach to migration trip duration relates to a broader perspective, which includes multiple variables and is useful in the specification of an empirical model to estimate those factors that explain the length

of stay of Mexican migrants in the USA. The point of view of the paper is to analyze social, economic, human capital and social capital aspects that are driving the decision of migration and permanence of Mexican migrants.

4.2 Methodological of Estimation

A logit model was established to estimate probabilities for two qualitative choices defined in the study. The model considers that a migrant's decision to stay in the USA is structured in a binary fashion. Therefore, it is assumed that Mexican migrants can choose between staying and leaving the USA in discrete time length alternatives considered simultaneously. The model considers that migrants would decide whether or not to stay permanently in the USA based on a binary model with two alternatives made simultaneously.[4]

Temporary migrants = 0
Permanent migrants = 1

Since the logit model is based on a cumulative logistic probability function, the specification of the model is given by

$$P_i = F(Z_i) = F(\alpha + \beta X_i) = \frac{1}{1 + e^{-Z_i}} \quad (1)$$

Where:

P_i = probability that migrants make a choice between temporal or permanent migration, given the set of explanatory variables X_i; and

e is the base of natural logarithms.

By multiplying both sides of (1) by and using some arithmetic and taking logs we get:

$$Z_i = \log \frac{P_i}{1 - P_i} = \alpha + \beta X_i \quad (2)$$

[4] O equals one to sixty months and 0 equals sixty one months and more. The time length to consider circular migration is based on the criteria used by CONAPO, which includes migrants returning to Mexico within a 5 years framework.

Equation (2) shows that the dependent variable Z_i is the logarithm of the odds of choosing either temporal or permanent migration according to the effect of a vector of independent variables X_i. The independent variables consist of five sets of indicators: socio-demographic, human capital, migration experience, social capital and labor market. The variables included are important because they reflect the migrant's background, describe the level of skills, and also capture the conditions that determine labor opportunities and therefore the possibility of remaining longer periods of time in the USA. It is worth mentioning that both a household's migration experience and the social capital generated by family and community networks in the USA increase the opportunity to succeed and remain for a longer time by the USA government. Finally, a dummy variable is included to consider the more tightened anti-immigration polices implemented in the USA and its effect on the duration of the migration trips. The empirical logit model can be represented as follows:

$$P(MD) = \frac{1}{1 + e^{-MD}}$$

Where:
MD = 1 if migration duration is permanent; or
MD = 0 if migration duration is temporary.

Assuming a linear relationship with respect of the independent variables, the logit model specification is constructed as shown below:

$$MD_i = \alpha + \beta_1 age + \beta_2 sex + \beta_3 ms + \beta_4 E + \beta_5 SU + \beta_6 C1 + \beta_1 C2 + \beta_8 C3 + \beta_9 NT + \beta_{10} X + \beta_{11} R + \beta_{12} C + \beta_{13} J + \beta_{14} W + + \beta_{15} D + \varepsilon$$

Where:

7MS	=	dummy variable for marital status, married (1), not married (0);
S	=	gender;
E	=	years of education;
SU	=	dummy variable for skilled (1) and unskilled Mexican labor (0);
C1+ C2 + C3	=	Cost of *coyote* in trips one to three;
NT	=	number of migration trips;
X	=	Migration experience;
R	=	Dummy for relatives contact (1) or no contact (0);
C	=	Dummy for community member contact (1) or no contact (0);

J	=	Dummy variable: job obtained with help (1), job obtained by themselves (0);
W	=	Real wage of Mexican workers in the USA; and
D	=	Dummy variable reflecting tighter migration policy in the USA.

4.2.1 Data Base

The analysis of this study is based on data from the MMP. The data was collected in Mexican communities between 1987 and 2007. The information about migrants is related to demographic, socioeconomic and migration characteristics. The survey contains important information on the experience of Mexican migrants in the USA, social and community networks and labor indicators. It includes specific information from 18,804 Mexican households in 118 representative communities (4 new additional communities, from the state of Morelos in 2007) in 21 of Mexico's thirty-one states.[5] The survey provides representative data on authorized and unauthorized Mexican immigrants in the USA interviewed between 1987 and 2007 at the community level, and detailed information about the household head in the USA, migration experience, and the destination regions.[6]

Initially, the regional selection of communities interviewed was focused on Western Mexico,[7] because the was that geographical area which concentrated a large part of migrants to the USA; although lately new states have been included such as Veracruz, Oaxaca, Tlaxcala, Morelos and Puebla. Locations are selected based on four levels of urbanization: ranchos, with fewer than 2,500 inhabitants;

[5] Aguascalientes, Baja California Norte, Chihuahua, Colima, Durango, Guanajuato, Guerrero, Hidalgo, Jalisco, México, Michoacán, Morelos, Nayarit, Nuevo León, Oaxaca, Puebla, San Luis Potosí, Sinaloa, Tlaxcala, Veracruz, and Zacatecas.

[6] The MMP is undertaken each year during the winter months because seasonal migrants are home, the survey randomly samples households in communities located throughout Mexico. It collects information on social, demographic, and economic issues on the household and its members, interviewers gathers information on each person's first and last trip to the United States. It also compiles year-by-year history of USA migration of household heads and gets information about the last trip to the USA, regarding employment, earnings, and use of USA social services. Additionally, an identical questionnaire is applied in the destination areas in the USA to migrants from the same communities sampled in Mexico who have settled in the USA. These surveys are combined with those conducted in Mexico to generate a representative binational sample. In 2007, 922 USA households, and individual-level data on 128,940 persons were surveyed in the MMP118. The data presents information on 6,848 household heads with migration experience to the USA and information on 47 household heads with Canadian migration experience. In addition, four communities feature health questions pertaining to the household head and spouse.

[7] Jalisco, Michoacan, Colima, Nayarit, San Luis Potosi and Zacatecas.

pueblos (towns), having 2,500 to 10,000 inhabitants; mid-sized cities containing 10,000 to 100,000 inhabitants; and a metropolitan area, which is a particular neighborhood within a state's capital city or some other large city.

The sample of household heads was generated for each community of the survey between 1987 and 2007 an accounted for 59,426 entries that were used to estimate the model and define the social, demographic and economic characteristics of the sample. The demographic characteristics of the sample showed that the household heads were divided into 55,947 men and 3,480 women. From the household heads that migrated to the USA, 84% were married, 4.4% were in a consensual union, 4.2% were widowed and 3.4% never married (see Table 1 on Appendix).[8]

With respect to human capital variables, the level of education of migrants was rather low, with an average for the whole period of 5.9 years of education;[9] it is worth noting that for the period, 22.7% of the sample declared 6 years of education. With respect to the level of labor skills, the principal occupation of Mexican migrants was classified into two groups: unskilled and skilled, based on a wide range of labor activities which reflect the education level and the labor skills acquired in the work place.[10] The classification slowed that 79.8% of the Mexican migrants were unskilled laborers and only 20.2% was skilled workers.[11]

The data on the migration experience presented the following results: according to the sample 55.2% of the Mexican migrants that enter the USA did not have documents, 24% were legal residents, 8.8% were temporary tourists, 2.7% were citizens (Table 2). With respect to the number of migration trips undertaken by migrants, 42.9% have entered the USA one time, 22.2% two times, 11.1% have made three trips and 5.6% four trips. Migration experience for migrants on average, was 8.5 years (102 months), however it is important to underline that 50% of the sample had less than 4 years in the USA duration.[12] Additionally, 54.9% declared

[8] All tables are located on the Appendix.

[9] Own estimations with data from MMP Survey 18, 2007. University of Princeton and Universidad de Guadalajara (mmp.opr.princeton.edu/).

[10] The first group was made up by concentrating the following occupations: unemployed, homemaker, idle, student, retired, agricultural workers, husbandry workers, craftmen and manufacturing workers, unskilled workers, industrial vehicle operators, merchants in retail establishments, ambulatory sales people, toys lottery people, innkeepers, waiters, security personnel, secretaries, typists, data entry, mine, quarry and well operators. On the other hand, skilled workers were classified according to the following occupations: professionals, technicians, educational workers, administrators and entrepreneurs and supervisors.

[11] Based on estimates form the MMP, Survey MMP118.

[12] Based on estimates form the MMP, Survey MMP118. The variable indicating total amount of U.S. experience (USEXP) was calculated: if the number of trips equals 0 then the USEXP equals 0; the number of trips 1, USEXP equals the months duration of first trip1; if the number of trips equals 2, USEXP equals the sum of the first and

having contacted relatives when they arrived in the USA, while 64.7% contacted community members (Table 3). Therefore, social networks seem to be an important factor that facilitates migration flows by making it possible for migrants to reduce the time required for job searching.

With respect to the labor market conditions for migrants, the MMP survey shows that 67.9% of the migrants obtained their jobs through a recommendation from relatives, friends or home community members.[13] On the other hand, 29.2% of the migrants interviewed declared that they obtained the job by themselves. The characteristics of the jobs show that the hours worked per week amounted to an average of 45.6, although the average months of work per year were 8.7. Finally, after taking out 10% of the cases of the sample with extreme values for declared wages, the average real wage at 2007 prices was $5.9 dollars (Table 4).

According to the MMP survey, since the mid-nineties, and particularly after 9/11, migration control policies pursued by the USA coincided with changes in the characteristics of Mexican migration flows. There are at least three aspects of Mexican migration that experienced important transformations: the proportion of documented to undocumented migration, the number of migrants' trips and the duration of the last trip undertaken by migrants.

With respect to the first characteristic, the undocumented migrants surveyed by the MMP increased their share in the total sample of Mexican migrants from 52.7% between 1987-1994 to 64.6% in the post 9/11 period of 2002 to 2007. Legal actions and difficulties in acquiring a visa to enter the USA are very likely pushing Mexican migrants to enter the USA illegally. The obstacles for undocumented migrants to cross the border have pressured them to rely more on the use of *coyotes* or people who help them to enter the USA illegally. As a result, the share of the migrants surveyed in the period 1987-2007 who used *coyotes* to move from Mexico to the USA in their four initial trips was more than 70%. This phenomena has increased the costs of migration and increased the risks for people trying to cross the border.[14]

As already mentioned, border surveillance and detention of undocumented migrants have also modified the characteristics of the migrant's trips to the USA. The result was, on one hand, the reduction of the number of trips carried out by

the last trips duration in months; if the US trips are greater than 2, USEXP equals the number of Us trips multiplied by the sum of the months average sum of the first and last trips.

[13] Based on estimates form the MMP, Survey MMP118.

[14] Based on estimates form the MMP, Survey MMP118.

Mexican temporary migrants, and, on the other hand, the trip duration of migrants has lengthened (Table 5). According to the MMP, in the period 1987-1994, the average trips carried out by Mexican migrants was 4.2, but in the period 1995-2001 the number of trips decreased to 2.7, and after 9/11 the average of the number of trips diminished even more to 1.7 (2002-2007). In view of that, apparently, the efforts to control Mexican migration have had the opposite effect since it has decreased the number of crossings but has extended the trip duration of migrants. This phenomena has the effect of reducing circular migration, but by increasing trip duration the migration policies are encouraging permanent migration to the USA.

5. Factors that Affect the Length of Mexican Migration

A logit model was estimated to evaluate the effect of the different groups of variables on the probability of extending the duration of the migration trip. The McFadden R-squared was 0.49, which implies an adequate goodness of fit of the regression model. With respect to the social and economic variables, it is important to mention that the gender, age and marital status coefficients were statistically significant, with the exception of the first one, and the signs of the coefficients showed that female married migrants are not inclined to stay long periods of time in the USA (Table 6). On the other hand, young male and single migrants have a propensity for staying longer periods of time in the USA.

With respect to the variables related to education and labor skills, the coefficients were both positive and statistically significant, suggesting that these variables have an impact on the time length duration of the last trip of the migrants interviewed in the MMP. Human capital seems to increase the rate of market assimilation. In other words, it is possible that both the higher the level of education and the higher the labor skills of Mexican migrants, the faster their wages will converge to the wages in the USA labor markets, encouraging the possibility of longer trip duration.

The coefficients of both migration experience and the availability of alternative methods of entering the USA such as the use of *coyotes* to cross the border between the USA and Mexico indicates that both variables increase the probability of migrants to stay longer periods of time in the USA. Such coefficients were positive and statistically significant. However, the coefficient of documented or undocumented migration showed a negative sign, which suggests that undocumented migrants tend to have greater probabilities of staying on their last trip to the USA. This result contrasts with the results of the hazard model developed by Reyes (2001) in which she finds that households with resources before migration,

particularly if they move without documents, have a higher probability of staying longer periods of time in the USA. However, this study was developed before the enforcement of more restrictive migration policies established after 9/11. In any case, migration experience and the use of *coyotes* have encouraged migrants to consider staying longer periods of time in the USA.

The positive impact of social networks on permanent migration is corroborated by the coefficient of the family contact at arrival in the USA, which was positive and statistically significant. However, the same coefficient for the community member variable was not conclusive. Nevertheless, the results suggests that family networks seem to enhance the probability of a longer migration trip by increasing adaptability to the USA labor market (Lindstrom, 1996).

The set of variables related to labor market conditions for migrants in the USA also corroborates that, as the level of real wages increases, the probability of permanent migration becomes more possible, although the results are not statistically conclusive. Finally, the dummy variable reflecting the restrictive anti-immigration policy, which increased in 1995 and was intensified after 2001, showed a higher probability for a longer migration trip. This statistical result expresses the difficulties of crossing the border that determine changes in the decisions of Mexican migrants with respect to choosing circular or permanent migration.

Conclusions

The paper stresses the factors within the USA that are encouraging Mexican migration trips of more than five years to the USA. Mexican migration has been characterized by an important flow that is non-permanent and is considered as a circular migration between Mexico and the USA. However, after the establishment of IRCA and particularly after 9/11, the effect of migration policy on trip duration has been changed radically. Therefore, migration policies to prevent undocumented Mexican migration have modified the temporal structure of Mexican migrants by increasing the share of migrants that remain more than five years in the USA.

As a result of the increasing the number of apprehensions of migrants in violation of immigration laws, the time length of migrants' trips has been lengthened in response to barriers to undocumented migration. Based on information from the MMP, trip duration of Mexican migrants increased from an average of 4.4 years to 6 years between 1987 and 2006.

The social and human capital characteristics of Mexican migrants have not changed very much between 1987 and 2007. The level of education of migrants was rather low, with an average for the whole period of 5.9 years of education.

Also, according to the classification of skilled and unskilled workers, 79.8% of the Mexican migrants were unskilled laborers and only 20.2% were skilled workers. Finally, social networks seem to be an important factor for migrants that facilitate migration flows by making it possible for migrants to reduce the time required for obtaining a job.

With respect to the labor market conditions for migrants, the MMP survey shows that more than half of the migrants interviewed obtained their jobs through a recommendation from relatives, friends or home community members. Finally, the average real migrant wage at 2007 prices was $5.9 dollars per/hour. Also it is important to mention that undocumented migrants increased their share in the total sample of Mexican migrants from 52.7% between 1987-1994 to 64.6% between 2002 and 2007.

The approach to migration trip duration determinants relates to a broader perspective which includes multiple variables, and it is useful in the specification of an empirical model which incorporates a set of variables for estimating the factors explain the length of stay of Mexican migrants in the USA. The regression estimation showed the following five results. Firstly, young male and single migrants have a propensity for staying longer periods of time in the USA. Secondly, the greater the level of education and labor skills the greater the probability of a longer trip duration, which make reflect a faster rate of market assimilation. The third result is that the coefficients of both migration experience and the use of *coyotes* to cross the border between the USA and Mexico increase the probability of migrants to stay longer periods of time in the USA. The coefficient of documented or undocumented migration showed a negative sign, which suggests that undocumented migrants tend to have greater probabilities of staying on their last trip to the USA. The fourth result is that family networks seem to enhance the probability of a longer migration trip by increasing adaptability to the USA labor markets, thus facilitating long-term migration. Finally, the dummy variable reflecting the restrictive of the anti-immigration policy, which increased in 1995 and was intensified after 2001, showed a higher probability for a longer migration trip.

It can be concluded that circular migration of Mexican migrants' has declined, reflecting the difficulties for crossing the border. Temporary migration was an important aspect of Mexican migration and it was determined by factors in the origin and destination countries.

However, the temporary nature of migrants' employment and the characteristics of migrants communities have been supplemented with new factors that relate to the possibility and costs of crossing the border. Therefore,

socioeconomic issues plus USA migration policies have encouraged permanent migration trips in the Mexican migration flows.

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Appendix

Table I
Migrants Socioeconomic Characteristics, 1987-2007

	Gender	
	Frecuency	*Percent*
Man	55,947	94.14
Woman	3,480	5.86
Total	59,427	100.00
Age	**Mean**	Std.
	44.77	**Deviation**
		14.74

	Marital Status	
	Percent	*Cumulative Percent*
Never married	3.34	3.34
Married	84.02	87.35
Consensual union	4.41	91.76
Widowed	4.16	95.93
Divorced	1.70	97.63
Separated	2.37	100.00

	Schooling	
	Mean	*Std. Deviation*
Years of education	5.87	4.23

Source: MMP Survey 18, 2007. University of Princeton and Universidad de Guadalajara, mmp.opr.princeton.edu/.

Table 2
Last USA mig: Documentation used

	Percent	*Cumulative Percent*
Legal resident	24.49	24.49
Contract-Bracero	6.51	30.99
Contract-H2A Agricultural	1.12	32.11
Temporary worker	1.05	33.16
Temporary: Tourist	8.77	41.93
Citizen	2.72	44.65
Silva Letter	0.03	44.68
Undocumented	55.32	100.00

Source: MMP Survey 18, 2007. University of Princeton and Universidad de Guadalajara.

Table 3
Social Networks Capital

Contacted relatives	*Percent*	*Cumulative Percent*
Yes	54.87	54.87
No	45.13	100
Total	55,909	
Contacted community		
members	64.56	64.56
Yes	35.44	100
No	58,008	
Total		

Source: MMP Survey 18, 2007. University of Princeton and Universidad de Guadalajara.

Table 4
Migrants Labor Conditions, 1987-2007

	Mean
Employment hours worked per week	45.6
Months worked per hour	8.7
Real Wages per hour (2007 prices)	5.9

Source: MMP Survey 18, 2007. University of Princeton and Universidad de Guadalajara.

Table 5
Effects of Strict Controls in Migrants Border crossings

Documented and undocumented migration (%)			
Periodo	*1987-1994*	*1995-2001*	*2002-2007*
Undocumented	52.70	52.58	64.58
Documented	47.30	47.42	35.42
Total	100	100	100
Months duration of last migration trip			
Mean	48.6	75.2	89.3
Std. Deviation	95.7	95.7	130.5
Migrant's Trips to the US (number of trips)			
Mean	4.2	2.7	1.7
Std. Deviation	5.3	3.8	1.6

Source: Own elaboration with data from the MMP Survey 18, 2007. University of Princeto and Universidad de Guadalajara.

Table 6
Dependent Variable: Last Migration Trip Duration

Variable	*Coefficient*	*Std. Error*	*Z-Statistic*	*Prob.*
C	-3.01	0.54	-5.56	0.00
Age	-0.03	0.00	-6.94	0.00
Sex	0.10	0.27	0.37	0.71
Marital status	-0.41	0.20	-2.06	0.04
Schooling	0.03	0.01	3.97	0.00
Skilled-Unskilled workers	0.06	0.21	0.28	0.78
Migration exp.	0.03	0.00	31.74	0.00
Coyote 1	0.00	0.00	1.71	0.09
Coyote 2	0.00	0.00	-2.67	0.01
Coyote 3	0.01	0.00	6.51	0.00
Documented	-0.57	0.14	-4.17	0.00
Number of trips	-2.21	0.16	-13.49	0.00
Community	-0.01	0.01	-1.06	0.29
Relatives	0.01	0.01	1.52	0.13
Real hourly wage	0.00	0.00	0.75	0.45
Job obtained	0.00	0.00	-1.39	0.16
Dummy	0.62	0.12	5.29	0.00
S.D. dependent var		0.36		
Akaike info criterion		0.43		
Schwarz criterion		0.45		
Hannan-Quinn criter.		0.44		
Avg. log likelihood		-0.21		
McFadden R-squared		0.49		