



Policy Shocks and the Supply of Mexican Labor to U.S. Farms

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Immigrant farm workers from Mexico are unquestionably one of the most critical inputs to U.S. agriculture. They have facilitated the expansion of fruit, vegetable, and horticultural production, particularly in the Southwest. Their availability affects production technologies and enhances the ability of U.S. producers to compete with low-cost producers abroad.

A study of the supply of labor to U.S. farms immediately takes one to villages in rural Mexico where farm labor migration originates. According to the National Agricultural Worker Survey (NAWS), 78% of the U.S. farm workforce in 2001-02 was foreign-born and 75% was from Mexico. Just over half of all farm workers were unauthorized immigrants (U.S. Department of Labor, 2005). The actual share of unauthorized workers in the farm workforce is likely higher than this, because some do not reveal their true legal status.

In 2003, with support from a USDA NRI grant, we launched what to our knowledge was the first study of U.S. agricultural input supply ever conducted outside the U.S. borders. The Mexico National Rural Household Survey (ENHRUM), carried out jointly by UC Davis and El Colegio de Mexico in Mexico City, canvassed a nationally and regionally representative sample of households in rural Mexico in an effort to ascertain what drives the supply of labor to U.S. farms and the effects of U.S. immigration and trade policies on farm labor migration.¹ This paper summarizes our key findings.²

1. ENHRUM is the Spanish acronym for *Encuesta Nacional a Hogares Rurales de México*.

2. Boucher, et al. (2007) provide a more detailed discussion of this research.

The Importance of Mexican Migrant Labor

Nowhere are the U.S. and Mexican economies and societies more closely interwoven than through migration. The 2000 U.S. Census found that 9.2 million, or 1 out of every 12, Mexican-born persons were living in the United States.³ Analysis of the March 2005 Current Population Survey found that 30% of the foreign-born population was unauthorized, and 56% of the unauthorized migrant population, or 6.2 million, were from Mexico (Passel, 2006). These migrants are employed primarily in agricultural and low-skilled manufacturing and service jobs. While migration draws human resources out of households and communities throughout Mexico, it also generates a major source of income for the Mexican economy. The Banco de Mexico (2006) estimates that Mexican migrants sent home, or remitted, \$20 billion in 2005. Migrants, the “people export,” thus generated four times more revenue for the Mexican economy than agricultural exports and only slightly less than oil exports. Migrants to U.S. farms come overwhelmingly from rural areas, where poverty is concentrated in Mexico. Remittances from farm workers represent a *de facto* poverty alleviation policy, providing injections of capital into areas cut off from credit markets and that have been more spectators than participants in Mexico’s recent growth. Understanding the dynamics of U.S. agricultural labor migration and the potential impacts of policies on these dynamics, thus, is a research priority from the viewpoint of policymakers and farmers in Mexico.

3. Census data on the foreign-born are available online at <http://census.gov/prod/2003pubs/c2kbr-24.pdf#search=%22mexico%20foreign%20born%202000%20census%22>.

This is also a priority for policy makers and farmers in the United States. Labor constitutes approximately one-third of total costs of fruit, vegetable, and horticultural production in the United States. Most new entrants into the farm workforce are unauthorized immigrants from rural Mexico. California highlights the importance of Mexican migration in U.S. agriculture. It is the largest agricultural producer in the United States. Nearly all its seasonal agricultural workforce comes from households in rural Mexico. NAWS data reveal that more than 90% of California's 1996 seasonal workforce was foreign-born, and 90% of these foreign-born workers were from Mexico (Mines, Gabbard, & Steirman, 1997).

Immigration and Trade Policies

How have immigration and trade policies affected the supply of Mexican labor to U.S. farms? We examined the effects of the three key immigration and trade policy changes of the last twenty years: 1) Increased border enforcement expenditures; 2) The 1986 Immigration Control and Reform Act (IRCA); and 3) The North American Free Trade Agreement (NAFTA). These are the major policy shocks that may have affected the supply of rural Mexican labor to U.S. farms.

Increased enforcement along the U.S.-Mexico border, through such operations as Gatekeeper and Hold-the-Line, was aimed at directly deterring unauthorized immigration from Mexico by making illegal border entry more costly. While this may make villagers think twice about attempting to migrate, past research suggests that the majority of those who attempt an illegal border crossing eventually succeed. Because

increased border enforcement also potentially has the unintended effect of deterring return migration from the United States back to Mexico, the net effect is ambiguous (Public Policy Institute of California, 2002; Singer and Massey, 1998).

IRCA represented a unilateral policy effort by the United States to control migration via sanctions against employers who knowingly hire unauthorized immigrants. However, it also included a one-time general amnesty program and two special concessions to U.S. farmers. The Special Agricultural Worker (SAW) Program legalized an additional 1.2 million immigrants, the majority from Mexico. The Replenishment Agricultural Worker (RAW) program allowed for new immigration to alleviate farm labor shortages caused by SAWs leaving agriculture. However, the RAW was never used, because the Department of Labor determined that there were no farm labor shortages in the early 1990s, despite employer sanctions.⁴ Indeed, the U.S. Commission on Agricultural Workers (1992, p. xix-xx) concluded that there was "a general oversupply of farm labor nationwide" and, "with fraudulent documents easily available," employer sanctions were not deterring the entry of unauthorized workers.

NAFTA opened borders for trade and investment between Mexico and the United States and reinforced an on-going process of agricultural liberalization in Mexico. NAFTA and the concurrent domestic reforms in Mexico were only partially motivated by migration concerns; nevertheless, they were expected to have far-reach-

4. *An excellent discussion of IRCA and U.S. agriculture appears in Martin (1994).*

ing impacts on migration flows. President Salinas argued that opening up markets would help Mexico export more goods and fewer people, thereby reducing migration pressures. In theory, however, the effects of NAFTA on migration from rural Mexico are ambiguous. On one hand, one would expect economic liberalization to decrease production of maize and other goods that could be imported more cheaply from the United States, increasing emigration pressures. On the other hand, it could stimulate agricultural exports, as well as nonagricultural production in Mexico that may absorb displaced rural workers. Thus, just like border enforcement and IRCA, NAFTA's effects on migration from rural Mexico to the United States are ambiguous.

Data Challenges

Analyzing how a specific policy impacts migration dynamics is no easy task. In order to see whether or not and how migration patterns change in response to a policy, data on the number of migrants and where they work are needed for a sufficiently long period both before and after the policy is implemented. Until very recently, this type of data has not been available. The United States and Mexican Census of Agriculture and Population are too infrequent and do not collect the necessary information on immigration and sector of employment. Data are available on the number of apprehensions at the border; however, these data do not indicate where successful migrants work. Finally, scattered village surveys in Mexico provide some detailed migration information. However, the samples are small, not nationally representative and, in most cases, do not cover sufficiently long time periods

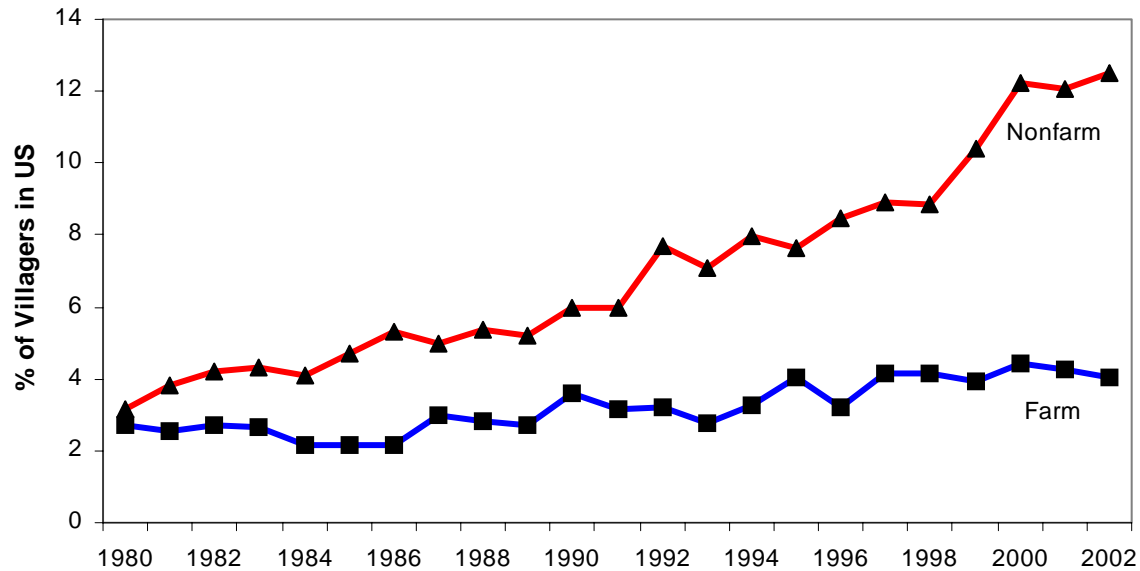


Figure 1. Percentage of Mexican villagers in U.S. farm and non-farm jobs.

to examine the impacts of new policies.⁵

The ENHRUM overcomes these problems. This survey was administered to 1,600 Mexican households in 2002 and is representative of rural Mexico at both the national and regional levels. The survey is unique in that it makes it possible to explore the dynamics of U.S. agricultural labor supply from Mexico and how they may have changed over time. It does so by reconstructing individuals' migration and work histories, including immigrants' sector of employment in the United States each year between 1980 and 2002. This time period is sufficiently long to permit us to examine both IRCA's and NAFTA's impacts on migration patterns. In what follows, we will focus on the West-Central region of Mex-

ico, including the states of Aguascalientes, Colima, Guanajuato, Jalisco, Michoacán, Nayarit, San Luis Potosí, and Zacatecas, because it has the longest history of sending migrants to the United States. According to the NAWS, in 2001-02 the largest share of Mexican-born farm workers (46%) was from just three West-Central Mexican states: Guanajuato, Jalisco, and Michoacán. From 2001 to 2004, 51.6% of the U.S. agricultural work force and 65.2% of California farm workers were from this region.

Migration Trends

How have overall patterns of migration to the United States from this region evolved over the past two decades? Figure 1 shows the fraction of adults from the villages that migrated to the United States to work in farm and non-farm jobs. The figure reveals several interesting patterns. First, overall migration to the United States increased sharply.

Combining farm and non-farm migration, the share of villagers working in the United States increased from 5.8% in 1980 to 16.5% in 2002. The trends are quite different, however, for the two sectors. While the share of villagers migrating to farm and nonfarm jobs was nearly the same in 1980, migration to non-farm jobs increased much faster than to farm jobs. Nevertheless, a slight increasing trend is evident in migration to farm jobs as well. The fraction of villagers migrating to farm jobs increased from 2.7% in 1980 to 4% in 2002. The question we explore is 'what role, if any, did the policies play in this trend?'

Findings and Discussion

What would migration to U.S. agriculture have looked like in the absence of the three policies described above? To answer this question, we econometrically model the dynamics underlying the farm labor migration curve in Figure 1. We do

5. *Some of the Mexico sample-based studies include Cornelius, 1989; Donato, Durand, & Massey, 1992; Orrenius and Zavodny, 2003.*

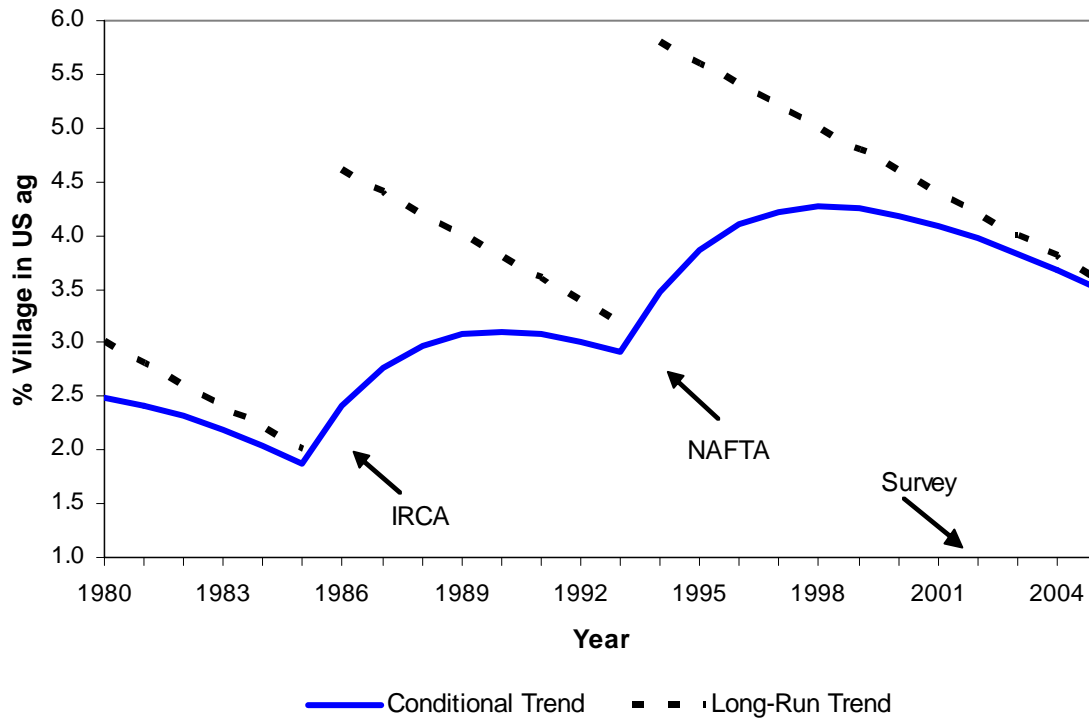


Figure 2. Conditional migration trends to U.S. agriculture.

this using a standard dynamic panel technique in which the current share of villagers in U.S. farm jobs depends on the past share, a time trend, other variables affecting the economic returns and costs of migrating, and variables measuring the three policy changes. This method makes use of both the time series and cross-sectional variation in the data. We test whether the migration trend changed significantly in years when U.S. border enforcement expenditures increased and in 1986 and 1994 when IRCA and NAFTA, respectively, were implemented.

Two main findings emerge from the analysis. First, once we control for other variables shaping migration, increases in border enforcement expenditures do not affect migration to U.S. farms. This suggests that border enforcement, even if it increases the odds of apprehension on a given

attempt to cross the border, does not deter new immigration. An alternative explanation is that increased enforcement decreases new migration, but also deters return migration by those already in the United States who anticipate a more difficult re-entry in the future.

The second major finding is that the upward trend in farm labor migration evident in Figure 1 was, in fact, policy induced. Without IRCA and NAFTA, the trend would have been negative; that is, over time, the share of rural Mexicans migrating to work on U.S. farms would have decreased. Figure 2 isolates the impacts of IRCA and NAFTA. The downward sloping dotted lines show that in the medium to long run there is a tendency for migration to farm jobs to decline. This decreasing trend, however, was temporarily interrupted first by IRCA and then

by NAFTA. The solid curve shows that each policy was associated with about a one percentage point increase in the share of villagers migrating to U.S. farm jobs over the four-year period following the policy's implementation. This represents nearly a 40% increase compared to pre-policy levels.

The finding that farm labor migration increased after IRCA suggests that the SAW legalization program created a stimulus for migration that outweighed the deterrent effect of employer sanctions for hiring unauthorized workers. There are three ways in which legalization may have increased farm migration. First, family reunification invariably follows legalization. This would bring new migrants from rural Mexico into rural areas of the United States and possibly into farm jobs. Second, there may have been a surge in new migra-

tion to apply for easy legalization under the SAW program. Third, the SAW program may have sent a message to rural Mexicans that working on U.S. farms could provide access to future legalization programs.

Interpreting the positive effect of NAFTA on farm migration is difficult because of the many complex changes underway in Mexican agriculture and the overall economy. Nevertheless, an increase in migration is consistent with agricultural production and productivity trends in Mexico. Both Mexico's agricultural exports and its grain imports increased sharply after it joined NAFTA. At the same time, Mexico's export agriculture became more capital intensive, resulting in an overall decrease in farm employment. For example, in 2002, Mexican agriculture produced 15% more output with 10% fewer workers than in 1991 (Taylor, 2003). The bottom line is that, for rural Mexicans lacking the human capital to transition into nonfarm sectors, NAFTA and related reforms may have increased the incentive to migrate to the United States in search of farm work.

Migration and the Future of Agricultural Labor Markets

This analysis raises interesting and critical questions for agricultural labor markets in the United States. We are now more than ten years after the implementation of NAFTA. Figure 2 suggests that the initial increase in migration to U.S. farms that was associated with NAFTA has played itself out, and the long-run trend of decreasing agricultural labor migration is reasserting itself. This is consistent with recent increases in real agricultural wages and reports of labor scarcity on farms (*Rural Migration News*, 2006). In light of this,

farmers and policymakers face two alternatives. One alternative is to take new measures to increase the supply of foreign labor. This option is controversial, as reflected by the heated debate over legalization provisions in current immigration reform proposals. Our findings suggest that, with or without immigration reforms, the trend in supply of labor from rural Mexican households to U.S. farms is decreasing. This raises questions concerning the long-run feasibility of using gatekeeper policies to increase this labor supply. The other alternative is to allow farmers to adjust to a tighter labor market via labor-saving technologies and farm management practices. The choices that are made will have far reaching ramifications for farmers and farm workers in the United States, as well as for households in rural Mexico.

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