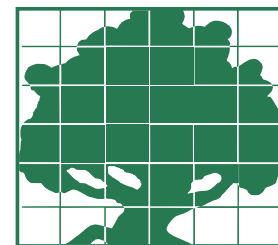


Agricultural and Resource Economics UPDATE



GIANNINI FOUNDATION OF AGRICULTURAL ECONOMICS • UNIVERSITY OF CALIFORNIA

V. 16 no. 4 • Mar/Apr 2013

Mexicans Are Leaving Farm Work: What Does It Mean for U.S. Agriculture and Immigration Policy?

Diane Charlton and J. Edward Taylor

New econometric evidence shows a declining trend in the farm labor supply from households in rural Mexico, which are the main source of hired labor for U.S. agriculture. At the same time, after a decade of decline, employment on Mexico's fruit, vegetable, and horticultural farms is beginning to rise. This means that U.S. and Mexican farmers are competing for a dwindling supply of farm workers. Changing crop choice, technologies, and management practices, rather than immigration policy, will be the keys to adjusting to a new era of relative farm labor scarcity.

In the mid-1900s Americans stopped doing hired farm work. We were not alone: In *all* countries, as per-capita incomes rise, people leave the hired farm workforce and the share of the workforce in agriculture plummets. Figure 1 illustrates a sharp decline in the share of the workforce employed in agriculture as per capita incomes rise across countries. Each diamond in the figure represents a country in 2008. The labels for Madagascar, China, Mexico, and the U.S. indicate the relative positions of four countries in different phases of agricultural employment and economic growth.

The United States averted a farm labor crisis by turning to its poor neighbor to the south. Mexico was at an early stage in the transition from farm to non-farm work. Immigration offered a solution to the U.S. farm labor problem.

Our research shows that this era of farm labor abundance is coming to an end. There is a declining long-term trend in the farm labor supply from households in rural Mexico. There is also growing competition from Mexico's fruit, vegetable, and horticultural (FVH) farms to employ this dwindling supply of farm labor.

This means that immigration policy will cease to be a solution to the U.S. farm labor problem in the long run and probably sooner. In fact, we already may be witnessing the start of a new era in which farmers will have to adapt to labor scarcity by switching to less labor-intensive crops, technologies, and labor management practices.

The End of Farm Labor Abundance

For more than half a century, FVH farms in the United States had access to an

Also in this issue

The Elasticity of Demand for California Winegrapes

Kate B. Fuller and Julian M. Alston.....5

New Demand for an Old Food: The U.S. Market for Olive Oil

Bo Xiong, William Matthews, and Daniel Sumner.....9

In the next issue....

Some Impacts of Recession on California's Nursery and Floral Industry

Figure 1. Farm Workforce Share and Per-capita Incomes, 2008

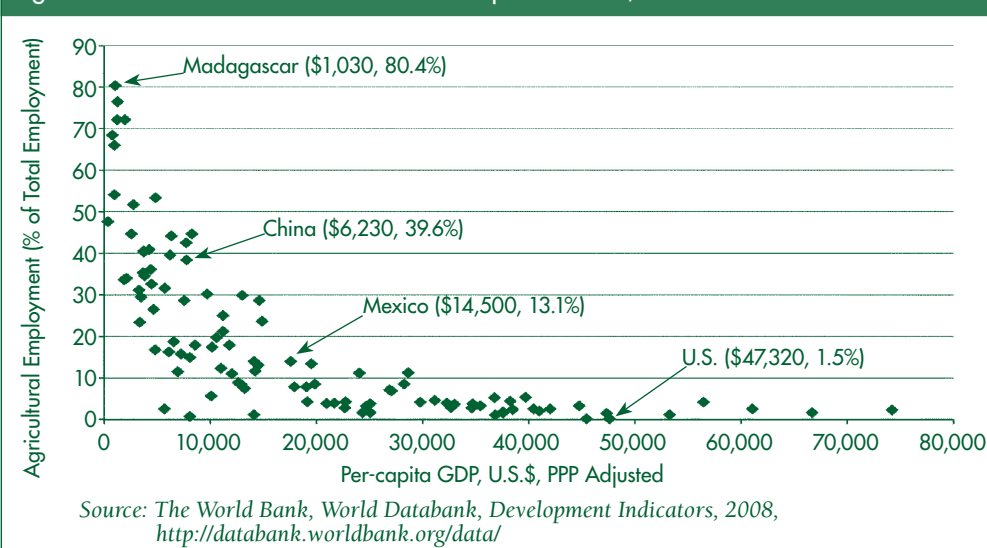


Figure 2. The Decline in Mexico's Farm Workforce, 1995–2010



abundant supply of low-skilled farm labor from Mexico at stable or decreasing real wages. Our analysis of new survey data from rural Mexico reveals that the supply of Mexican labor available to work on U.S. farms is decreasing. Mexico is following the familiar pattern of countries around the world: as its income rises, workers shift out of farm work into other sectors. Mexico's farm workforce fell by nearly two million workers (25%) between 1995 and 2010 (Figure 2). Meanwhile, productivity per farm worker in Mexico tripled.

Mexico's per-capita income, adjusted for the cost of living, now exceeds \$15,000 per year. Growth in Mexico's non-agricultural employment began before the recession and persists now. As income and non-farm opportunities increase, the Mexican workforce will continue moving out of agriculture.

In fact, there are simply fewer low-skilled workers in rural Mexico than there used to be, due to a sharp decline in the fertility rate and a significant expansion in rural education. Average schooling is 4.9 years for rural Mexicans fifty or older; for people in their twenties it is 9.7 years. Better educated children eschew farm work in Mexico, just as they do in the United States.

Econometric Evidence of the Declining Farm Labor Supply

The Mexico National Rural Household Survey (Spanish acronym: ENHRUM)

gathers panel data on individuals from a nationally representative sample of rural Mexican households. For each year from 1980 to 2010, the ENHRUM provides information on where each individual worked (locally, as a migrant in another part of Mexico, or in the United States), in what sector (farm or non-farm), and in what capacity (as a wage worker or self-employed). These data—a total of 105,389 person-years in all—are uniquely suited to study shifts in the farm labor force over time.

We estimated basic dynamic models of the propensity for rural Mexicans to do farm and non-farm work over the 31-year period covered by the panel. The findings reveal that the probability of engaging in farm work is decreasing significantly over time, while the probability of working in non-farm jobs is increasing.

The good news for farmers is that there is a great deal of *persistence* in farm work: if a rural Mexican does farm work one year, there is more than a 90% likelihood that he or she will do farm work the following year. The bad news is that a transition away from farm work in rural Mexico is underway. The supply of agricultural workers will not disappear immediately, but U.S. agriculture can expect to see a gradual decline in the availability of Mexican farm workers over time.

The recent recession provides additional insight into the declining farm

labor supply. Before the recession, many California farmers complained that construction contractors were recruiting immigrant workers away from their farms. The “great recession” of 2008 had a large negative impact on construction and service jobs, but it did not affect agriculture; labor demand in the U.S. farm sector remained steady. We would expect, then, to see an increase in the farm labor supply, as unemployed workers returned to farm work.

Our data show the opposite. Figure 3 illustrates the percentage changes in numbers of rural Mexicans employed in different sectors and countries between the first (2002–2007) and second (2007–2010) two survey rounds. The share of rural Mexicans working in U.S. agriculture decreased more sharply than the share working in non-agricultural jobs. Our data permit us to track individual immigrants before and after the recession. Some people did switch from non-farm to farm jobs during the recession, but more moved off the farm—further evidence of a negative trend in the farm labor supply.

Why the Decrease in Mexican Farm Labor Supply?

The received wisdom in development economics is that the domestic supply of agricultural labor starts out being relatively elastic (i.e., abundant), but the farm labor supply shifts inward and becomes less elastic as countries' per-capita incomes increase and people shift from farm to non-farm jobs. In order to induce domestic workers to supply their labor to farm jobs, agricultural wages must rise apace with nonagricultural wages. This is all the more true if non-farm jobs bring non-pecuniary benefits compared to farm jobs and/or workers who associate farm jobs with drudgery.

An elastic supply of Mexican farm labor transformed the U.S. agricultural labor supply curve by flattening it out once it reached the reservation wage for migrant workers—that is,

the minimum wage required to induce new workers to migrate from rural Mexico to U.S. farm jobs. This reservation wage equals the wage rate in rural Mexico, or the marginal value product of labor, plus the costs—material or otherwise—associated with migrating to work on a U.S. farm.

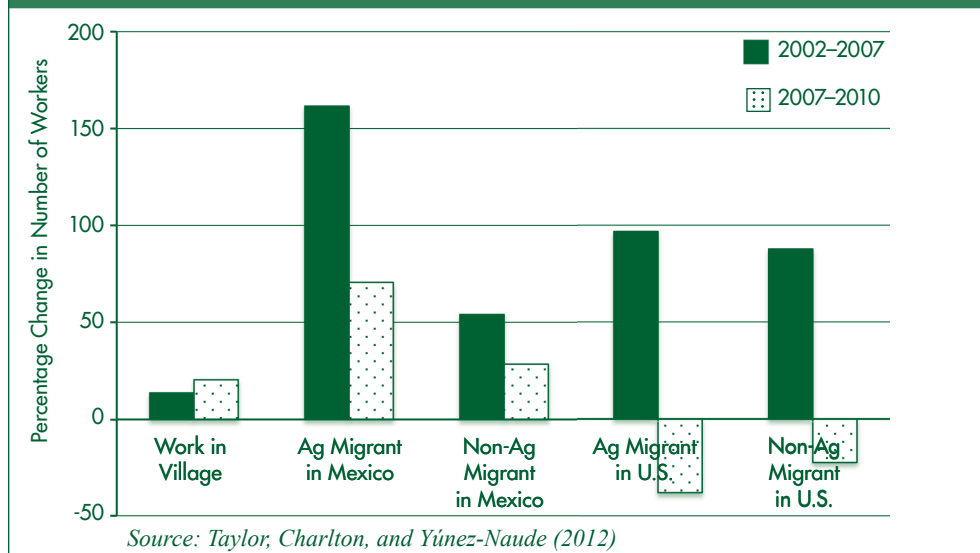
The result was a U.S. farm labor market with a high equilibrium quantity of labor, consisting mostly of Mexican workers, and a low equilibrium wage, equal to the reservation wage required to induce Mexican farm workers to migrate northward. In the United States, the share of domestic workers in the hired farm work force fell to the point where, by 2006, only 23% of workers (2% in California) were U.S.-born. The rest were immigrants. As Martin notes, “the farm workers of tomorrow are growing up outside the United States.”

An elastic farm labor supply in Mexico, then, has been the key to U.S. farmers’ access to an abundant supply of farm labor at a low wage. As the rural Mexican labor supply pivots inward, reorienting itself towards non-farm jobs, the reservation wage increases. Unless U.S. farm wages adjust, there will be an excess demand for Mexican farm workers, or as farmers commonly call it, a “farm labor shortage.”

Competition from Mexican Farms

Recent developments in Mexican agriculture exacerbate the U.S. farm labor problem. Labor productivity in Mexican agriculture is rising. In the ten years following NAFTA, Mexico’s agricultural production increased while its farm employment fell. Since 2007, however, Mexico’s farm labor demand has increased slightly, fueled by an expansion of FVH production for exports and to feed Mexico’s growing food demands. Clearly, in the face of an overall decline in the farm workforce, this cannot continue indefinitely without exerting upward pressure on U.S. as well as Mexican farm wages.

Figure 3. Percentage Change in Number of Workers Who Migrate to Each Sector by Survey Round



U.S. farmers thus face multiple sources of competition for rural Mexican labor: Mexican farms, the non-farm sector in Mexico, and labor-intensive industries and services (e.g., construction) in the United States, which is certain to rebound as the U.S. economy recovers from recession.

Is Legalization the Solution?

There are many reasons why legalization is a good idea, but ensuring an abundant farm labor supply is not one of them. Legalization increases workers’ economic options in the United States, and this makes farm workers more mobile. Farm work traditionally has been a first stop for new immigrants, who move on to non-farm jobs when they are able. Legalization under the Special Agricultural Worker (SAW) program in the 1987 Immigration Reform and Control Act (IRCA) stimulated the movement of immigrant workers out of farm work.

Legalization conditional upon doing several years of additional farm work might contribute slightly towards stabilizing the farm workforce in the short run. However, with a backdrop of diminishing farm labor, research findings suggest it may do the opposite in the long run.

A New Farm Labor Dynamic

In the past, when legalized SAWs left agriculture, they left behind a vacuum that was quickly filled by newcomers. That is why the current share of illegal immigrants in the U.S. farm workforce is higher than it was before the 1986 legalization program.

This constant replenishing of the farm workforce with new immigrants is changing. The U.S. Department of Labor’s National Agricultural Worker Survey (NAWS) found that foreign-born newcomers (first-time arrivals who had been in the United States for less than a year at the time of interview) comprised nearly a quarter (23%) of all crop workers in 1998–2000, but fell to just 9% in 2007–2009.

Border Enforcement and Violence

Tighter border enforcement and drug-related violence along the border may deter migration, but our analysis suggests that their effect on the farm labor supply is largely secondary, reinforcing a negative trend in rural Mexicans’ willingness to do farm work.

If the decrease in immigration in recent years were the result of increases in border patrol or drug-related violence, the decrease in farm labor supply would be similar to the decrease in

non-farm labor supply. Our data show the opposite.

Implications for U.S. Immigration Policies

A declining farm labor supply in rural Mexico means that U.S. and Mexican farmers must compete for a gradually dwindling pool of farm workers. The combination of decreasing labor supply and growing demand for farm workers in Mexico raises the reservation wage of migrating to the United States—that is, the wage U.S. farmers have to offer to induce farm workers to migrate northward.

Our econometric analysis finds that increases in U.S. border enforcement do discourage international migration by farm and non-farm workers. This suggests that U.S. immigration policies could reduce farm labor pressures in the short run by opening the border for farm workers. Guest worker programs could enable U.S. farms to compete for labor more effectively with Mexican farmers.

Attempts to accommodate farm interests in immigration reforms, however, are a stopgap measure at best. U.S. immigration policies cannot change the reality that Mexico's workforce is moving out of agriculture. Immigration is a solution to the U.S. farm labor problem only if there is an ample supply of workers on the other side of the border willing to do farm work.

Limits to the Recruitment Solution

One solution in an age of growing farm labor scarcity is to seek migrant workers from other countries with lower reservation wages. However, the U.S.-Mexico situation is unique. Historically, two countries at vastly different levels of income shared a common border; today, the income gap between the United States and Mexico is shrinking.

Farther to the south, Central American countries have lower per-capita incomes than Mexico. In fact, Mexico

now imports farm workers from Guatemala; it is in a transition phase of being both an exporter and importer of farm labor. However, Central America's populations are small compared with Mexico's, and they, too, are becoming less agricultural. Agriculture's share of the labor force is falling more rapidly in Guatemala, Honduras, and El Salvador than in Mexico.

The cost of importing low-skilled labor increases progressively as one looks farther afield, say, to Asia. Consequently, importing agricultural labor into the United States from more distant countries does not appear to be the solution to the farm labor problem.

The Labor Conservation Solution

Both U.S. and Mexican growers will have to seek labor substitutes as the supply of agricultural workers diminishes. Farmers will have to invest in labor-saving agricultural technologies, transition away from labor-intensive crops, and adopt labor management practices that make more efficient use of a smaller farm workforce. Capital improvements in farm production, like shake-and-catch harvesting, will increase the marginal product of farm labor, and U.S. farms will hire fewer workers at higher wages. This means wrenching changes for farms that cannot easily adjust their cropping patterns and technologies but new incentives to develop and adopt labor-saving methods.

What It All Means for Farm Workers and Rural Communities

The end of farm labor abundance could be good news for farm workers and rural communities. In 2007–2009, 23% of U.S. farm worker families had incomes below the poverty line. Studies show that between 1980 and 2000, growth in non-farm jobs reduced poverty, but growth in farm jobs did the opposite.

In the past, increased demand for farm labor induced new immigration

from Mexico, while increases in the supply of farm labor through immigration stimulated growth in the agricultural sector, thereby increasing the demand for farm labor. The key to this circular relationship between farm labor demand and immigration was that the supply of immigrant farm labor was elastic; that is, immigration was responsive to changes in U.S. farm wages.

Our findings suggest that Mexico's farm labor supply is not as elastic as it once was. Raising worker productivity is a prerequisite for increasing farm wages and enabling farm worker families to rise above the poverty line. Rising farm wages, in turn, create an incentive for farmers to make investments that will make farm workers more productive.

Suggested Citation:

Charlton, Diane and J. Edward Taylor. 2013. "Mexicans Are Leaving Farm Work: What Does It Mean for U.S. Agriculture and Immigration Policy?" *ARE Update* 16(4):1-4. University of California Giannini Foundation of Agricultural Economics.

Diane Charlton is a Ph.D. student and J. Edward Taylor is a professor, both in the ARE department at UC Davis. They can be contacted by e-mail at charlton@primal.ucdavis.edu and taylor@primal.ucdavis.edu, respectively.

For additional information, the authors recommend:

Taylor, J.E., D. Charlton, and A. Yúnez-Naude. 2012. "The End of Farm Labor Abundance." *Applied Economic Perspectives and Policy* 34(4):587-98.

Taylor, J.E. 2010. "Agricultural Labor and Migration Policy." *Annual Review of Resource Economics* 2:369–93 www.annualreviews.org/doi/pdf/10.1146/annurev-resource-040709-135048.