Adjusting to a Post-NAFTA Mexico: What It Means for California

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Summary

The post-NAFTA era is marked by a sharp expansion in Mexico-US trade and a transformation of Mexico's rural economy. Rural Mexicans, particularly the young, are leaving farm work, and Mexican workers in general appear to be shifting their focus from US to Mexican labor markets. How NAFTA influenced this change is not clear, but the end of farm labor abundance means long-term changes for California's farms and rural communities. Farmers will have to adjust to a smaller workforce. California's rural communities ultimately will be the home of fewer farm workers with more stable employment and higher wages.

Introduction

The expansion of Mexico-US trade post-NAFTA is well documented (Figure 1). In NAFTA's first 20 years (1993-2012), US exports to Mexico rose 420%, while Mexico's exports to the US jumped 596%. By far, most Mexico-US trade (more than 90%) is in non-agricultural goods and services, but agricultural trade between the two countries increased, as well: US agricultural exports to Mexico rose 311%, while Mexico's agricultural exports to the US jumped 404%. The rise in trade began before NAFTA, and we do not have the benefit of seeing an alternate universe in which there was no NAFTA but everything else was the same. Because of this, it is not entirely clear whether NAFTA caused this trade expansion. Many other factors may have influenced Mexico-US trade over this period, including domestic policies in Mexico, advances in technology (including the internet), and the increasing integration of the global economy generally. It is reasonable to conclude that NAFTA facilitated Mexico-US trade by formalizing changes already underway and providing a stable policy environment.

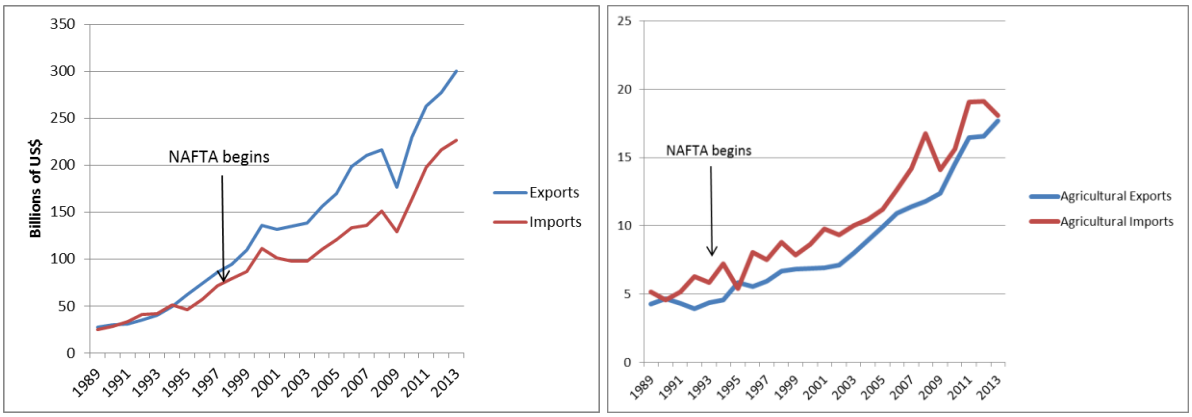

Figure 1. Mexico's total and agricultural trade with the United States increased after NAFTA took effect on January 1, 1994. (Source: US Department of Commerce, Bureau of Census, Foreign Trade and US Department of Agriculture)

Transformation in Rural Mexico

Mexico's rural economy is becoming less agricultural. Nationwide, the largest source of income to rural households today is nonfarm wages (32%), followed by migrant remittances (20%). Many families in Mexican villages farm the land; however, only 14% of their total income comes from producing crops and livestock on their own farms, and another 14% comes from working on other (including commercial) farms. Maize dominates the rural Mexican landscape; however, it accounts for less than 5% of total household income in rural Mexico. (This includes the value of maize consumed on the farm.)

Rural Mexicans—especially young people—are moving out of farm work. Data from the Mexico National Rural Household Survey (Spanish acronym: ENHRUM) permit us to track a nationally representative sample of rural Mexicans into and out of farm jobs over time—a total of more than 125,000 person-years of data. Our econometric analysis of these data shows a significant decrease in people's probability of working in agricultural jobs over time. This includes agricultural work in the village, in other parts of Mexico, or in the US. The downward trend in farm labor supply is pervasive across Mexico's five census regions (Figure 2). Overall, the supply of agricultural labor from rural Mexico is falling at a rate of 0.13%, or 11,200 workers per year.

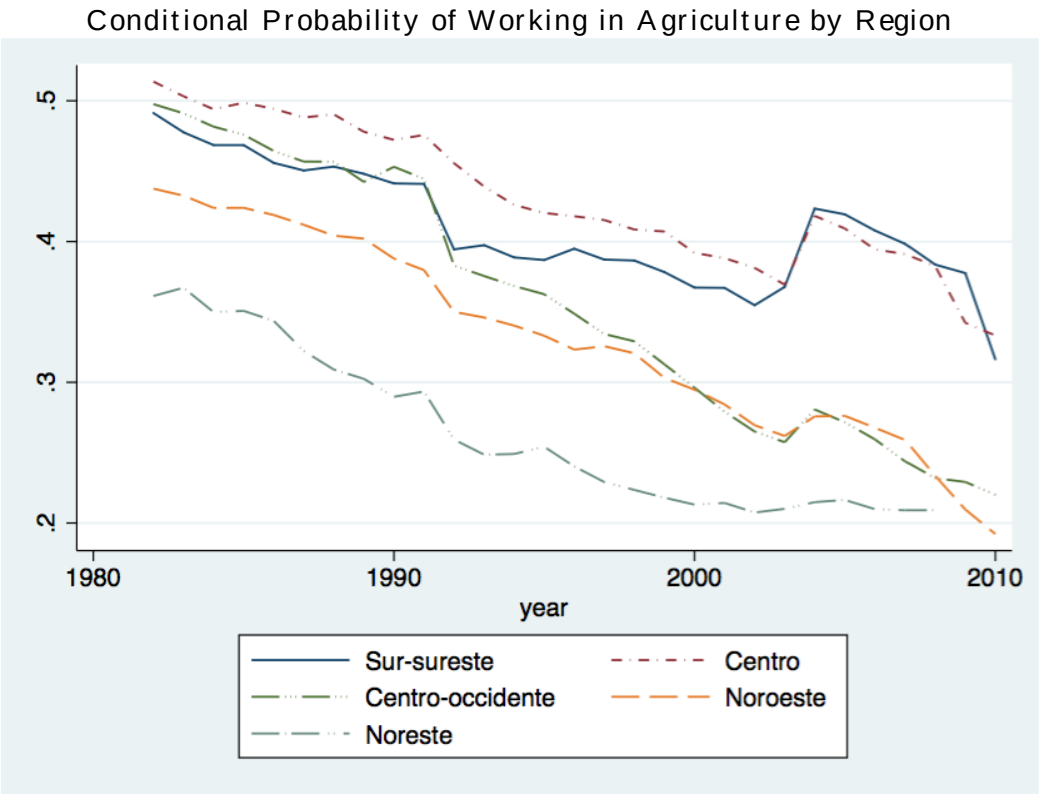

Figure 2. Rural Mexicans' probability of doing farm work is decreasing over time. Source: Charlton and Taylor (2014)

When it comes to labor moving off the farm, Mexico is not unique. Worldwide, as countries' per-capita incomes rise, people move out of farm work into nonfarm jobs. The arrows in Figure 3 show countries' per-capita incomes (measured along the horizontal axis) and workforce shares in agriculture (vertical axis) in 1990 (the start of each arrow) and 2005 (the arrow tips). Each arrow corresponds to a different country. The figure shows that countries with higher per-capita incomes have dramatically smaller agricultural employment shares, and in individual countries, as incomes rise, the farm employment share falls. The right-hand figure shows the arrows for China, Mexico, and the US. Of these three countries, China is at the earliest stage of this transformation. In the US, the process is virtually complete: agriculture employs less than two percent of the US workforce, and most hired workers on US farms are immigrants from Mexico. Mexico's per-capita income (adjusted for the cost of living) now exceeds $15,000, and Mexico is entering the later stages of its farm labor transition.

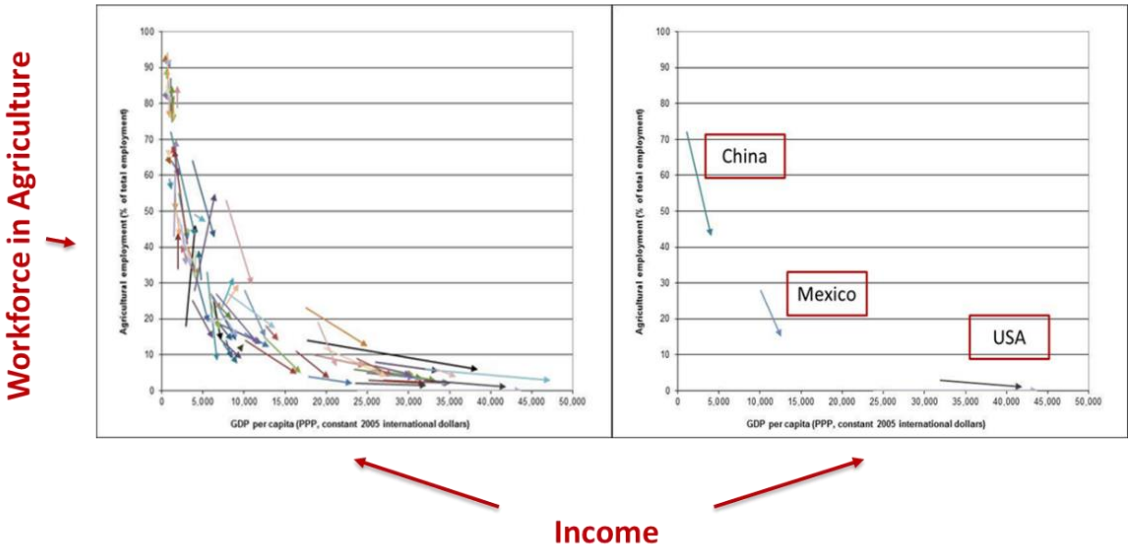

Figure 3. Worldwide, agriculture's employment shares (vertical axis) fall sharply as countries' per-capita incomes (horizontal axis) increase.

A number of different factors explain rural Mexicans' gradual shift out of farm work. We used the ENHRUM data to analyze these factors using panel econometrics. Figure 4 illustrates our findings to date. The horizontal axis shows the year, and the vertical axis reports the number of rural Mexicans working in farm jobs (in millions of people). The single largest negative factor appears to be the growth in Mexico's non-farm economy (Non-farm GDP value added in Figure 4), which faltered during the 2007 recession but has been recovering (with ups and downs) since then. We estimate that employment in manufacturing and services pulled more than a quarter of a million rural Mexicans out of farm work during the post-NAFTA period.

Another significant factor has been the expansion of rural schools in Mexico. There are simply fewer low-skilled people in rural Mexico than there used to be. The ENHRUM data show that the average schooling level is 4.9 years for rural Mexicans fifty or older but 9.7 years for people in their twenties. More educated kids eschew farm work in Mexico, just as they do in the US. Increased US border enforcement actually increased the farm labor supply, by keeping some people from migrating to the US; however, this effect is small compared to the pull of nonfarm jobs in Mexico. Border enforcement, drug-related violence, and economic conditions in the US influence *where* Mexicans work more than whether or not they do *farm* work.

All of this is against a backdrop of a dramatic fall in Mexico's fertility rate, which is 2.05 children per woman, almost the same as the US and below replacement. That means a smaller working-age population. This, together with growth in Mexico's nonfarm economy, raises doubts about whether we will ever see Mexico-to-US migration as high as it was at the turn of the millennium, and the prospect of decreasing Mexico-to-US migration in the future. Already, Mexico is both an "importer" and "exporter" of farm workers. While sending farm workers to the US, it brings workers in from Guatemala to work on farms in southern Mexico. The experience of the European Union shows that wages between countries do not have to reach parity in order for international migration to fall or even reverse. A four or five-to-one

wage differential can be sufficient to deter migration, as long as people believe that conditions at home are improving.

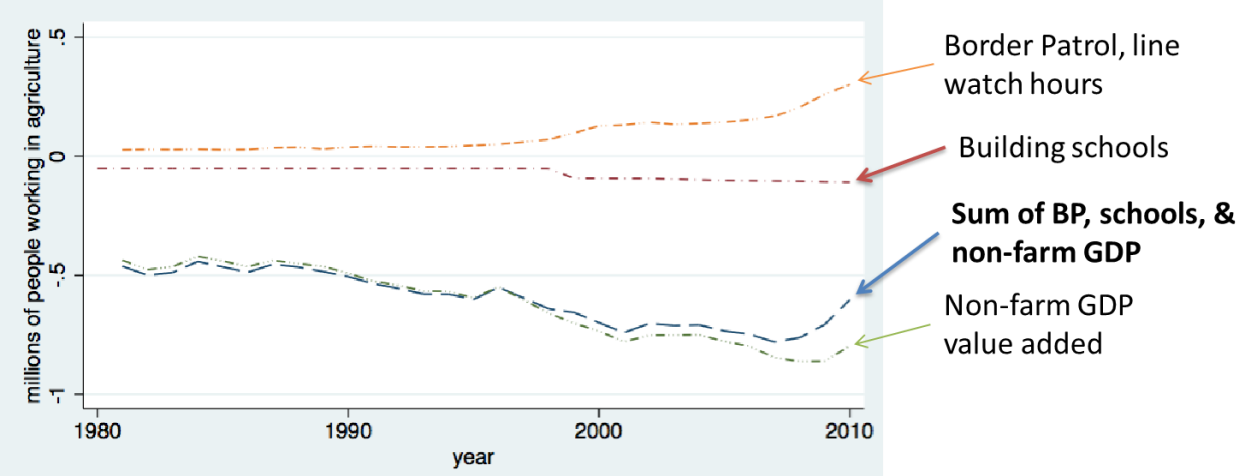

Figure 4. Growth in Mexico's non-farm economy and rural education pull rural Mexicans out of agriculture

The Effect of NAFTA

NAFTA's effect on rural Mexicans' shift out of agriculture is nebulous. Higher fruit and vegetable exports would mean more farm jobs, but Mexico's farms have also made new investments that allow them to grow more food with fewer workers. NAFTA may have helped provide the capital to do this. If Mexico's nonfarm economy is growing faster because of NAFTA, this would draw workers out of agriculture, according to our analysis. It would also encourage relatively skilled workers to remain in Mexico, rather than migrating to the US.

Prior to NAFTA, many people feared that lower maize prices would hurt rural Mexicans and stimulate migration out of rural areas. Maize prices did fall sharply after NAFTA took effect, and corn imports from the US rose. However, it is very difficult to pin this effect on NAFTA. Prior to NAFTA, the Mexican government offered commercial farmers a "guarantee price" up to double the world price. This policy was expensive and inequitable. Most of the benefits went to large commercial farmers, while the majority of farmers never received the high guarantee price; in fact, most households in rural Mexico are net buyers of maize. The guarantee price encouraged commercial farmers to shift from high-value export crops to maize, leading to efficiency losses. The phase-out of Mexico's price guarantees for basic grains was inevitable and largely independent of NAFTA. Some commercial maize farmers in Mexico were hurt by lower grain prices, though they were compensated by direct income payments under the PROCAMPO crop subsidy program. Livestock producers in Mexico clearly gained; Mexico imports yellow corn, most of which is fed to livestock, while Mexican farmers produce mostly white corn for human consumption (mostly in the form of tortillas). Cheaper feed means lower meat prices for Mexican consumers.

Our research shows that, on the whole, rural Mexicans benefited more (as consumers) than they lost (as producers) when corn prices fell after NAFTA. A surge in world corn prices in recent years, also

unrelated to NAFTA, had the opposite effect, though clearly some commercial producers benefited from higher corn prices.

What Does It Mean for California Farms?

With or without NAFTA, Mexico is changing in ways that have important implications for California's future. Americans moved out of hired farm work in the mid-1900s. US farms averted a farm labor crisis by using immigration policy to bring farm workers in from Mexico, which still had an abundant supply of farm workers. A diminishing supply of farm labor out of rural Mexico means that California farmers now compete with Mexican farmers for fewer low-skilled farm workers. The continuing expansion of fruit and vegetable production in Mexico is evident in the produce sections of our grocery stores (particularly in winter months); it intensifies this competition for farm labor. Newspaper articles reveal that California farmers are facing difficulties recruiting labor that they think are fundamentally different from past labor shortages, a sentiment confirmed by a recent survey of farmers conducted by the California Farm Bureau Federation. Our finding of a diminishing farm labor supply in rural Mexico supports this view. It casts doubt on whether changes in US immigration policy offer a durable solution to the farm labor problem, in an era when rural Mexicans, particularly young people, are moving out of farm work.

The end of farm labor abundance means that California farmers will have to produce more with fewer workers and pay these workers higher wages than before. There will be incentives to shift away from labor-intensive fruit, vegetable, and horticultural (FVH) crops into crops requiring less labor. However, North American consumers' demand for fresh fruits and vegetables will continue to grow even if farm wages rise: a 10% increase in farm wages translates into around a 1% increase in produce prices for consumers. Strong consumer demand will keep California farmland in FVH production.

The key to adapting will be to invest in new, labor-saving ways of growing today's labor-intensive FVH crops. This means new technologies that make farm workers more productive, as well as more efficient labor management practices that make a smaller pool of farm workers available to a larger number of farms. New technologies that raise worker productivity make it possible and profitable to pay higher wages, because employers will pay workers a wage that exceeds their productivity.

The farm workforce will gradually change. A teched-up agriculture requires teched up workers. Consider shake-and-catch systems, which surround a tree and shake fruits or nuts into a catching frame. They usually replace large numbers of low-skilled workers with a small number of skilled workers with high school diplomas and sometimes college. As agriculture becomes smarter, the farm workforce will become more skilled. Schools will need to prepare young people for these agricultural jobs of the future. Mexico could be in a position to provide California farms with fewer and more skilled workers. It currently graduates 113,000 engineers each year, more than twice the rate per 100,000 residents as the US.

What Does It Mean for Rural Communities?

California's San Joaquin Valley is one of the richest agricultural regions in the world, but it contains some of the poorest communities in the country, some with per-capita incomes at or below Mexico's. Research shows that over the past twenty years, the creation of new farm jobs in California stimulated new immigration into these communities and increased rural poverty: each new farm job resulted in 1.39 additional people in poverty in California's farmworker communities, including the immigrant

farmworkers and their dependents. An abundance of low-skilled immigrant workers from Mexico ensured low wages and discouraged investments to raise worker productivity and provide workers with stable employment. This set agriculture apart from other sectors of our economy, in which new jobs reduce poverty for those who get the jobs and their families. Rural communities faced a challenge of meeting the public service needs of a growing population of poor farmworkers and their families. US border enforcement intensified this challenge, by making it harder for workers to return to their villages in Mexico after the harvest, encouraging them to settle in rural California with their families.

In an era of fewer farm workers, wages will rise (we already see this happening). Investments in new technologies will make farm workers more productive, justifying higher wages. New labor management practices will provide more stable employment to a smaller farm workforce. This is good news for farm workers, their families, and the rural California communities in which they live.

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