

Farm Labor Shortages: How Real, What Response?

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California farmers hire an average 380,000 workers to help produce crop and livestock commodities worth \$32 billion a year. Farm employment is seasonal; a million workers earn wages sometime during the year on the state's farms. Farm employers have been complaining of labor shortages, arguing for immigration reforms that will make it easier to hire guest workers.

California farmers sold commodities worth \$32 billion in 2005, double the farm sales of the number two farm state, Texas. Labor-intensive fruit and nut, vegetable and melon, and horticultural (FVH) specialty crops, such as those produced in nurseries and greenhouses, generated almost 60 percent of California's farm sales.

Expanding farm sales, especially of FVH commodities, may be threatened by farm labor shortages. Farmers and farm groups have been complaining of too few workers to produce and harvest commodities in a timely fashion for the past several years, beginning with the winter vegetable harvest in the Imperial Valley in 2004-05. Labor shortage complaints have spread, and during 2006 included assertions of too few workers to harvest pears in Lake County, raisin grapes in Fresno County, and strawberries in Ventura County.

Farm employers want Congress to enact immigration reforms that will make it easier to hire legal guest workers. Acknowledging that a majority of hired farm workers are unauthorized, they fear that stepped-up border and interior enforcement could lead to crop losses if

too few newcomers are available to replace farm workers who are apprehended or move to nonfarm jobs.

This article reviews farm labor shortage definitions, wage and employment data, and likely adjustment scenarios in the event of fewer farm workers. It assesses the likely effects of pending immigration reforms, and concludes that they would institutionalize the current farm labor market, which acts as a revolving door for newcomers from abroad who move on to nonfarm jobs or return to their countries of origin.

Farm Labor Shortages

There is no economic or government definition of persisting shortage. In a market economy, demand curves rank consumers by their willingness to pay particular prices and suppliers by their willingness to sell at particular prices. If demand exceeds supply, prices will rise, reducing demand and increasing supply. Demand and supply adjustments to price changes can occur with considerable lags, as growers of apples or oranges decide if high prices are likely to persist before making investments that lead to additional production. Government intervention, such as putting a ceiling on the price of a commodity, can lead to shortages, as with price controls on apartments in New York City. Guaranteeing high prices to suppliers, on the other hand, can lead to surpluses, as with some farm commodities.

The labor market operates in the same way. Labor demand curves rank employers by the wages they are willing to pay, and labor supply curves rank workers by their reservation wages, which is the wage needed to induce a person to fill a particular job. As with farmers planting perennial crops, there can be lags between changes in labor demand that

affect wages and a supply response, as when an IT-boom increases the wages of computer programmers but time is required to educate additional workers.

Government intervention also affects labor markets. Farm, trade, and other policies can affect the demand for labor by encouraging or discouraging production, and policies ranging from education and training to welfare and minimum wages can affect labor supply. However, the major government intervention that affects the farm labor market is immigration—90 percent of California farm workers were born abroad, and a majority are not authorized to work in the United States.

With no standard government or economic definition of persisting labor shortage, the term can have very different meanings. The labor shortages reported in the press are usually instances of fewer workers employed than desired at current wages, leading to farm work not being done in a timely fashion or crops not being harvested. Many farm employers say there is a labor shortage when they have a crew of 30 workers, but they prefer 40. Other farmers say there is a shortage if they want crews to work today but contractors do not bring crews until tomorrow.

Economists evaluating claims of labor shortages look to what employers do to attract additional workers, such as adjusting wages. The first expected response to a shortage is higher wages, which should increase the supply of workers, perhaps drawing workers from other jobs or areas, and reduce the demand for them, as farmers skip a third or fourth harvest. Farm employers can also take other steps in response to fewer workers, including stepping up recruitment efforts, offering additional benefits such as housing, or making

work easier to enlarge the pool of workers available, such as using conveyor belts in the field to eliminate carrying harvested produce, hydraulic lifts to eliminate ladders or, in some cases, mechanize.

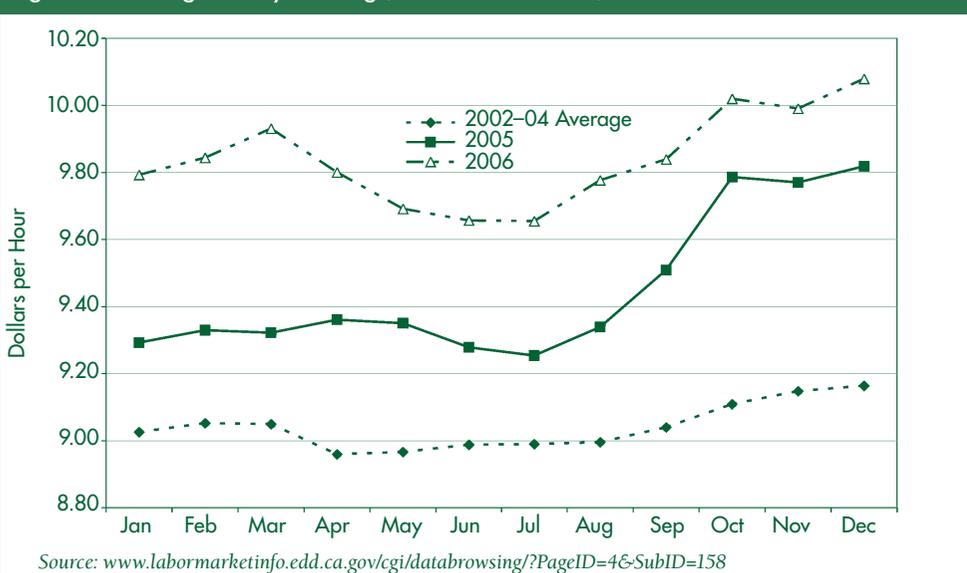
The data suggest that the average hourly earnings of California farm workers rose more than usual in Fall 2005, but not in Fall 2006 (Figure 1). The average hourly earnings of non-supervisory production workers employed in agriculture normally rise in the fall months, when seasonal workers are laid off. Between 2002 and 2004, the increase in earnings in the fall months was about two percent, but in Fall 2005, earnings rose five percent, and remained high early in 2006. However, the Fall 2006 rise in earnings reverted to the previous two percent rise, so that average hourly earnings data do exhibit a clear trend.

In contrast to labor shortage, there are government definitions of labor surpluses. The most common indicator is the unemployment rate, the ratio of workers actively seeking jobs to employed and unemployed workers. Labor surplus areas are defined by the U.S. Department of Labor (DOL) as those with unemployment rates that are at least 20 percent above the average for all states during the previous two years, or above 6.5 percent in 2007. One reason for unemployment and labor surpluses is the minimum wage, since a negatively sloped demand for labor curve suggests that more workers would be hired at lower wages.

Adjusting to Higher Wages

If fewer farm workers are available, economists expect farm wages to rise. The end of the Bracero program that admitted over 4.5 million Mexican guest workers between 1942 and 1964 contributed to a 40 percent wage increase in the first union contracts for table grape growers in 1966; entry-level wages rose from the federal minimum wage of \$1.25 an hour to

Figure 1. Average Hourly Earnings, CA Farm Workers, 2002-06



\$1.75 an hour. Farm wages rose faster than nonfarm wages for the next 15 years, as demand for fresh fruits and vegetables rose, unions competed to represent farm workers, and some nonfarm conglomerates vulnerable to consumer boycotts became farmers for tax reasons and as an inflation hedge.

If tighter enforcement of immigration laws leads to fewer new farm workers, and low nonfarm unemployment rates draw workers out of agriculture faster, farm wages would be expected to rise. Rising farm wages could be absorbed smoothly, as the labor supply shrinks along the demand curve, or in a discontinuous way, if the demand for farm

workers drops sharply at particular critical wage thresholds.

Today's farm labor market is pictured in Figure 2. At current average hourly earnings of \$8 an hour, about 80 percent of farm workers are immigrants. If the influx of newcomers were slowed by enforcement, and exits of farm workers speed up because of the availability of nonfarm jobs, the labor supply curve is expected to shift leftward, resulting in fewer workers employed at higher wages. If all immigrant workers were removed, the new equilibrium would be at **b**, where there are more American workers employed at higher wages, but far fewer total farm workers.

Figure 2. Smooth Adjustment to Higher Farm Wages

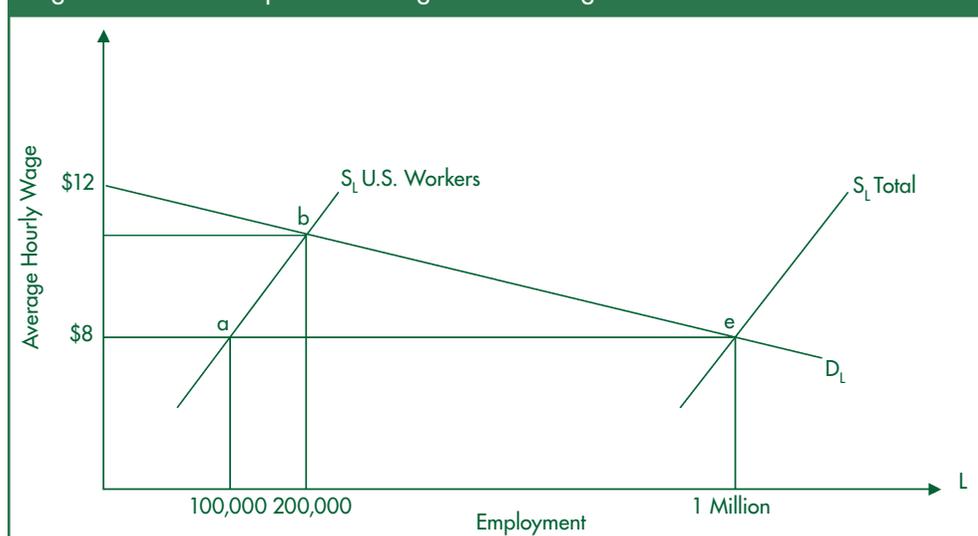
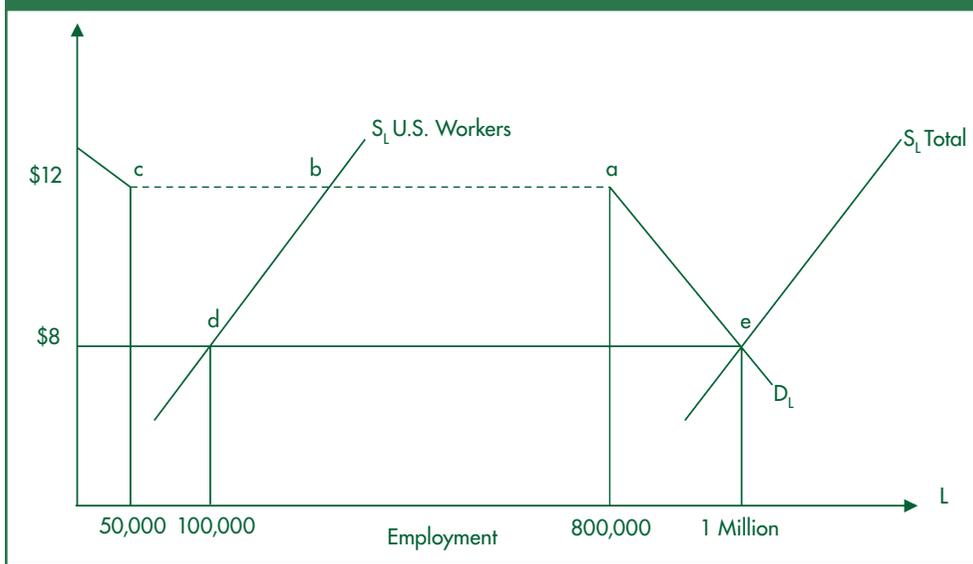


Figure 3. Discontinuous Adjustment to Higher Farm Wages



An alternative adjustment scenario is pictured in Figure 3. It illustrates a kinked demand for labor curve, highlighting the fact that at some critical or threshold wage, the demand for farm labor shrinks sharply, as rising wages lead to crop changes, mechanization, or other employment-reducing responses. Beginning from the same starting point at *e*, adjustments to fewer workers shift the supply curve leftward, and the demand for labor falls as e.g., farmers skip a third or fourth harvest. However, at the critical wage *a*, there is a sharp drop in the demand for labor, from 800,000 to 50,000, displacing over 90 percent of the workers who had been employed.

Which picture of farm labor market adjustments to rising wages is most realistic? The key difference in the two scenarios is the shape of the demand for labor curve—the first is smooth, suggesting gradual changes as wages rise, and the second is discontinuous, so that at a critical wage there is a sharp drop in the demand for labor. The mechanization of California’s processing tomatoes after the Bracero program illustrates the second or discontinuous adjustment scenario.

In 1960 over 80 percent of the 45,000 peak-harvest workers, employed to pick the state’s 2.2 million ton processing tomato crop into 50 to 60 pound lugs, were Mexican Braceros. A decade later,

all the state’s processing tomatoes were harvested mechanically. Federal and state funding encouraged plant scientists to develop tomatoes that ripened uniformly, and thus could be harvested in one pass through the field. Agricultural engineers developed machines that cut the plant, shook off the tomatoes, and conveyed them past sorters before dumping them in trucks outfitted with 12.5 ton tubs.

Government played a key role in tomato mechanization, as the major funder of labor-saving research and as the inspector of the harvested tomatoes. Processing tomatoes are worth about \$50 a ton or 2.5 cents a pound. When hand-harvested tomatoes arrived in 50 pound lugs, rejecting a lug cost the farmer \$1.25. With mechanically harvested tomatoes arriving in 12.5 ton loads, rejecting a load cost a farmer \$625. To expedite the acceptance of mechanically harvested tomatoes, random sampling stations were established to determine the quality of the tomatoes.

Immigration Reform

About 90 percent of California farm workers are immigrants, and the Senate debated immigration reforms in May-June 2007. The major issue was what to do about the estimated 12 million unauthorized foreigners in the United States. In May 2006, the Senate approved a

Comprehensive Immigration Reform Act (CIRA) on a 62-36 vote. It would have divided unauthorized foreigners into three groups based on how long they had been in the United States, and offered those in the United States at least two years, and who paid back taxes and fees as well as underwent background checks and passed English tests, a path to legal status and eventual U.S. citizenship.

The Comprehensive Immigration Reform Act of 2007 (S1348) is a four-pronged effort to deal with illegal migration that would: (1) increase border and interior enforcement to slow illegal migration; (2) provide a path to legalization for most of the 12 million unauthorized foreigners in the United States; (3) establish a new guest worker program; and (4) create a point system to select U.S. immigrants.

CIRA 2007 aims to reduce illegal immigration with new border and interior enforcement measures. It calls for an increase in the number of Border Patrol agents from the current 14,500 to 20,000 within 18 months (and eventually to 28,000), an additional 370 miles of fencing on the border, and enough detention space for 27,500 foreigners. After enactment, anyone apprehended after entry without inspection will be barred from receiving work or tourist visas to enter the United States.

A mandatory Employment Eligibility Verification System (EEVS) would check the legal status of all new hires within 18 months of enactment and re-verify employees hired before BSIR’s enactment within three years. Employers would submit employee-provided data to the Department of Homeland Security (DHS) via the Internet, and DHS would have access to Social Security data; the Social Security Administration would develop fraud-resistant cards. Penalties for violating employer sanctions laws would rise to \$5,000 for a first offense and up to \$75,000 for repeat offenders.

Under CIRA 2007, the estimated 12 million illegal foreigners in the United

States before January 1, 2007 could register with DHS six months after enactment and pay \$1,000 to obtain four-year renewable Z-1 visas. Z-1 visa holders could become immigrants if they pass an English test and undergo a background check, pay a \$4,000 fine, and apply at a U.S. consulate in their home country (the touchback rule, which applies only to the head of an unauthorized family). However, Z-1 visa holders would have to wait until the current backlog of foreigners awaiting immigrant visas is cleared, a process that DHS estimates will take eight years.

There would be a second legalization program for up to 1.5 million unauthorized farm workers who did at least 150 days of farm work in the two years ending December 31, 2006. Farm workers would have a slightly easier route to immigrant visas if they worked at least 150 days a year in U.S. agriculture for three years, or at least 100 days a year for five years. Like Z-1 visa holders, they would have to return to their countries of origin to apply for immigrant visas but would be first in line for immigration visas when current backlogs are cleared. Farm workers would pay a \$400 fine to become immigrants.

The third element of CIRA 2007 is a new program to admit up to 200,000 Y-1 guest workers a year. The current H-1B program would double in size, and the current H-2A (agriculture) and H-2B (nonfarm) seasonal programs would become the Y-2A and Y-2B programs.

U.S. employers could recruit Y-1 workers after advertising vacant jobs for at least 90 days and making certifications, including promising not to lay off U.S. workers in order to hire guest workers. Employers would pay a processing fee and a guest worker impact fee of \$500 to \$1,250, depending on the firm's size. Employers would have to provide Y-1 workers with the same wages and benefits as similar U.S. workers, and pay at least the local prevailing wage. Employers in counties with unemployment rates

of seven percent or more would have to obtain waivers from DOL to employ Y-1 workers.

To obtain Y-1 visas, foreigners would pay a processing fee and an impact fee of \$500 and report to their U.S. employers within seven days. Y-visas are valid for two years and can be renewed twice, for a total of six years of U.S. work. However, there must be at least one year in the worker's country of origin between U.S. work stints. Y-1 guest workers must not be unemployed more than 60 days at any one time, nor more than 120 days during the life of each two-year work visa.

The Y-2A program would change the H-2A program in three important ways: attestation would replace certification, housing allowances could be provided instead of free housing, and the AEWR would be frozen at 2002 levels and studied. The Y-2B program would operate like the current H-2B program, with a ceiling of 100,000 visas, up from the current 66,000, plus an additional 20,000 for workers who have previously held H-2B visas.

CIRA 2007 would change the legal immigration system. There were about four million foreigners waiting for immigrant visas in May 2005, including 1.5 million spouses and minor children of legal immigrants. This backlog would be cleared by adding 440,000 visas a year to expedite family unification.

After the backlog is cleared, a new point system would select up to 380,000 legal immigrants a year. Foreigners seeking to immigrate would have to achieve at least 55 of the maximum 100 points, with up to 47 points available for employment (including type of job, worker's age and experience, and employer recommendation), up to 28 for education, up to 15 for English and civics and, once they have the minimum 55 points, up to 10 additional points for having U.S. relatives. Foreigners seeking visas to fill high-demand jobs, whether for janitors or engineers, would get up to 16 of the 47 employment points.

Farm workers with Z-visas would have a different point system, earning up to 25 points for doing farm work in the first five years of Z-visa status, up to 15 points for lawful U.S. employment (one point per year), up to five points for home ownership, and up to five points for family health insurance.

Conclusions

The California Farm Bureau Federation and other farm organizations are conducting farm labor shortage surveys in Summer 2007, asking their members to report instances of too few workers to complete farm tasks in a timely way. There will undoubtedly be many complaints of labor shortages, as tougher border enforcement leads to higher smuggling fees and more dangerous entry routes into the United States. Those who elude enforcement may have more debts and stay in the United States longer because of higher re-entry costs, encouraging them to get out of seasonal farm jobs sooner.

If farm wages rise, the most noticeable changes are likely to be on the demand side of the labor market, as farmers mechanize tasks, switch crops, or take other steps to reduce employment. These adjustments in the past have been abrupt, accelerating the trend toward fewer and larger farms.

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For more information, the author recommends the following:

- Martin, Philip L. 2007. Immigration Reform, Agriculture, and Rural Communities. *Choices*. Vol 22. No 1. www.choicesmagazine.org.
- Martin, Philip. 2005. AgJOBS. New Solution or New Problem. *UC Davis Law Review*. Vol 38, No 3. pp. 973-991. <http://lawreview.law.ucdavis.edu/issues.html>.