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## COVID-19 and Farm Workers

By Alexandra E. Hill<sup>1</sup>, Philip Martin<sup>2</sup>

### Abstract

The COVID-19 pandemic disrupted the US economy and labor market, sending the US unemployment rate to almost 15 percent in April 2020. Almost all agricultural industries were deemed critical infrastructure industries, meaning that farm, food processing, transport, and supermarket workers were expected to continue working during lockdowns. We document three major effects of the pandemic on farm labor. First, there is, as of yet, no evidence of significant farm labor shortages due to COVID-19, as had been feared early in the pandemic. Second, the H-2A guest worker program expanded despite high unemployment rates, highlighting the difficulties of moving jobless nonfarm workers into seasonal farm jobs. Third, we postulate that COVID-19 and fears of future pandemics will accelerate three ongoing trends: investments and improvements in labor-saving mechanization, increasing utilization of H-2A guest workers, and rising imports.

**Keywords:** pandemic, agricultural labor, production, H-2A program, mechanization

### Introduction

The COVID-19 pandemic led to lockdowns which reduced employment and increased unemployment. During 2019 and the start of 2020, the US unemployment rate was near 3.5 percent, the lowest rate since 1969 (Edwards and Smith, 2020), but after the onset of COVID-19 the unemployment rate rose to 14.7 percent, the highest rate since the Depression Era (Amadeo, 2020). Figure 1 shows trends in US nonfarm employment and unemployment since 2018. US payroll employment (seasonally adjusted) peaked at

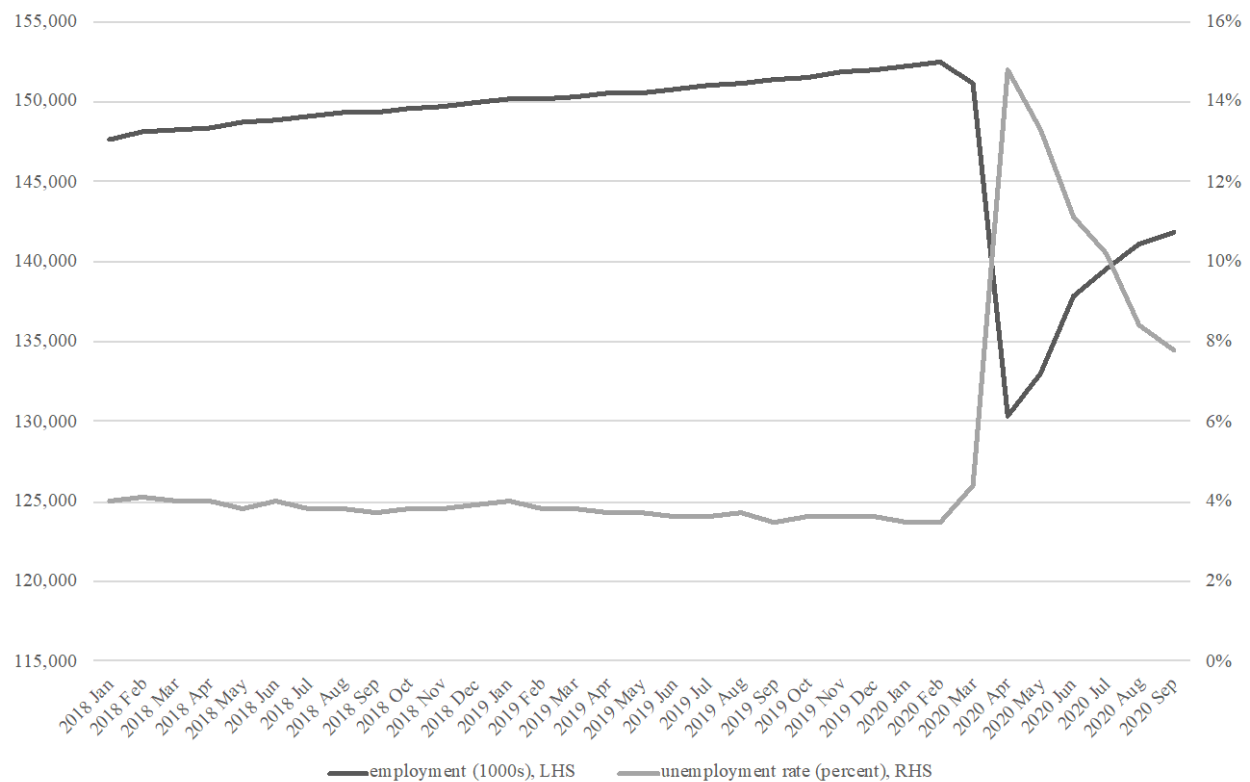
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152.5 million in February 2020 with an unemployment rate of 3.5 percent. Employment fell to 130.3 million in April 2020 and the unemployment rate rose to 14.7 percent. Employment has since rebounded somewhat, reaching 141.7 million in September 2020 with the unemployment rate falling to 7.9 percent.

The roller coaster US labor market involved large job losses and gains within six months. Government shelter-in-place orders reduced employment, especially in travel, hospitality and related service industries, while many professional workers switched from working in offices to working remotely from their homes. One exception to shelter-in-place orders were essential workers, especially in food production and health care services, who were expected to continue to work in person.<sup>3</sup>

**Figure 1. US Employment and Unemployment in 2020**



Notes: Seasonally-adjusted monthly employment (in 1000s of employees) and unemployment (percent unemployed) statistics from the US Bureau of Labor Statistics.

<sup>3</sup> State governors issued executive orders that defined essential services in their states. One review identified 12 sectors that employed 55 million US workers in 2019, including health care (30 percent of essential workers), food and agriculture (20 percent), and the industrial, commercial, residential facilities and services industry (12 percent), which includes janitors and maintenance workers. <https://www.epi.org/blog/who-are-essential-workers-a-comprehensive-look-at-their-wages-demographics-and-unionization-rates/>

Workers producing food on farms were considered essential in all states. There are two million farms in the US, a majority of which are small, money-losing hobby and retirement operations (USDA NASS, data from 2017 Census of Agriculture). Roughly a quarter of these farms, 513,000, hire at least one farm worker, but most farm employment is concentrated on the 10 percent of farm employers that hire 10 or more workers. There were fewer than 37,000 such farms in 2017.<sup>4</sup> Some of these farms also hire indirectly, as when they rely on farm labor contractors and other intermediaries to bring workers to their farms.

Table 1 shows that roughly 850,000 self-employed persons and 1.5 million wage and salary workers were employed in US agriculture in 2016.<sup>5</sup> The employment of farmers and family members in agriculture declined by 5 percent between 2006 and 2016 and is projected to decline by another 3 percent by 2026.<sup>6</sup> However, significant growth occurred in the average employment of hired agricultural workers between 2006 and 2016, up 23 percent, and is projected to remain stable through 2026.<sup>7</sup> These projections suggest that hired agricultural workers will account for nearly two-thirds of employment in US agriculture by 2026.

**Table 1. US Agricultural Employment in 1000s, 2006-26**

Sector	2006	2016	2026	Change 2006-16	Change 2016-26
Ag wage & salary	1,219	1,501	1,518	23%	1%
Ag self-employed	893	850	828	-5%	-3%
Total ag	2,112	2,351	2,346	11%	0%
Hired share	58%	64%	65%		

*Source:* Lacey et al. (2017), Table 1. Employment (1000s) by Major Industry Sector.

The National Agricultural Worker Survey (NAWS) has collected data since 1989 on workers employed on US crop farms, and in recent years has found an aging, more settled, and largely unauthorized Mexican-born workforce.<sup>8</sup> According to the most

<sup>4</sup> The 2017 COA reported in Table 7 of state data that 513,137 farms hired 2.4 million workers and paid \$31.6 billion in wages. The 36,541 farms that hired 10 or more workers, 7 percent of farm employers, reported 1.3 million or 54 percent of workers hired.

<sup>5</sup> Annual employment estimates come from the U.S. Census Bureau's Current Population Survey.

<sup>6</sup> According to the research conducted by Lacey et al. (2017), the US labor force is projected to expand by a million a year, from 159 million in 2016 to 170 million in 2026. GDP is expected to grow 2 percent a year over the next decade, up from 1.4 percent a year over the 2006-16 decade. Employment in 2026 is projected to be 168 million, up from 157 million in 2016. There are expected to be 136 million workers employed in services, 20 million in goods-producing industries, and 2.3 million in agriculture.

<sup>7</sup> Agricultural employment includes forestry, fishing, & logging, which collectively account for less than 5 percent of agricultural employment.

<sup>8</sup> [www.doleta.gov/naws/](http://www.doleta.gov/naws/)

recent evidence (2015/2016), the average worker is a 38-year-old male, born in Mexico, and living without proper work authorization in the US for 18 years (Hernandez and Gabbard, 2018). These workers have an average of nine years of schooling, and 70 percent speak at least some English. Unlike stereotypical images of farmworkers moving with their families from one farm to another, the NAWS shows that most farm workers have only one farm employer for whom they work 33 weeks a year, earning about \$10.60 an hour or \$480 a week for a 45-hour work week (Hernandez and Gabbard, 2018).

### **No Evidence of Labor Shortages**

At the onset of the COVID-19 pandemic, there were fears of farm labor shortages due to COVID-19 spreading rapidly among farm workers (Beatty et al., 2020; Costa and Martin, 2020; Farnsworth, 2020; Peña-Lévano, Burney, and Adams, 2020) and international travel restrictions which would limit reliance on H-2A guest workers (Costa and Martin, 2020; Escalante, Luo, and Taylor, 2020; Martin, 2020b). The expectation was that especially unauthorized farm workers, who are not eligible for most benefits, would work sick, spreading COVID-19 and shrinking the farm workforce, or stay home to care for children with the closure of K-12 schools.

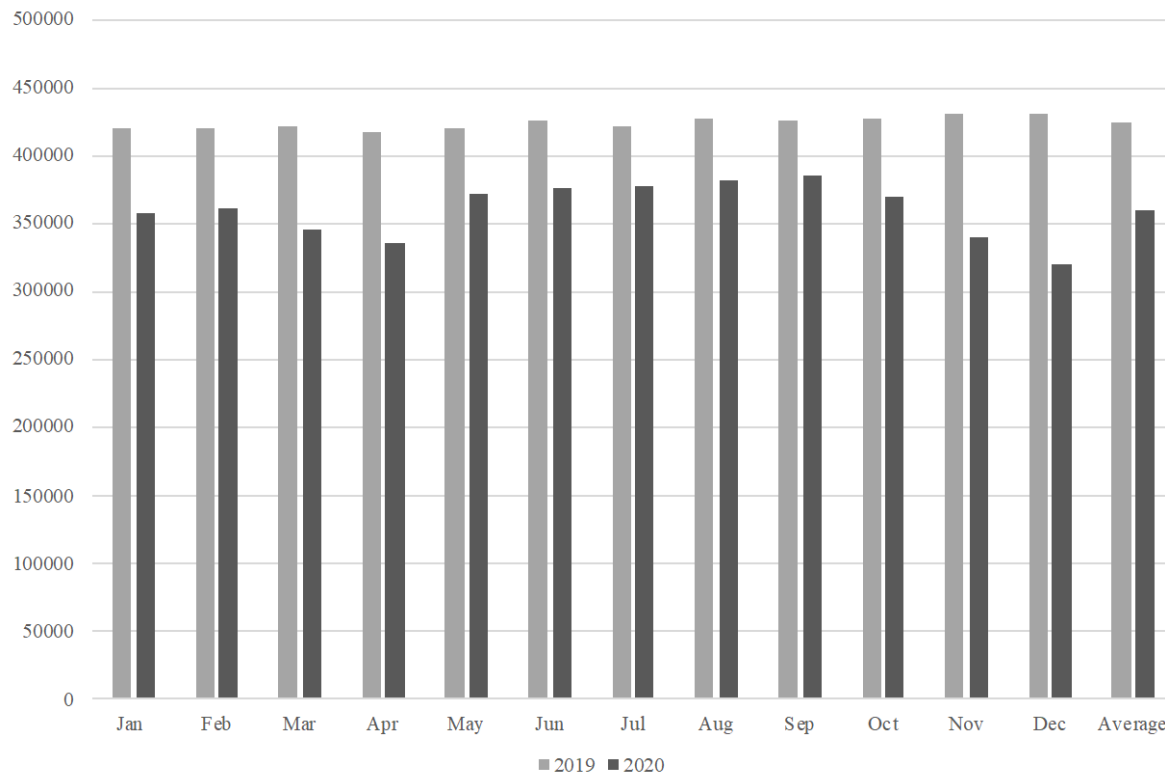
However, even during peak months of agricultural employment there were few reports of farm labor shortages.<sup>9</sup> Instead, evidence from California suggests that the pandemic led to fewer hours of work per farm worker as employers lost customers and sales due to restaurant and other food service operations purchasing less fresh produce (CFBF, 2020; Villarejo, 2020). This is a stark contrast with the well-publicized COVID-19 outbreaks among nonfarm food-processing workers, where the virus spread rapidly in some plants and prompted worker protests in Washington apple and California nut packing plants. Many plants closed temporarily for deep cleanings and to reconfigure workstations and test returning workers. The most publicized COVID-19 outbreaks among farm workers involved H-2A guest workers, who are often housed four to a room in bunk beds in motels.

Monthly California employment data show an 18 to 26 percent decrease in farm employment in 2020 compared to the same months of 2019, with the sharpest drop in June (Figure 2). The reduction in reported agricultural employment could be driven by many factors. First, due to mandated restaurant closures, the COVID-19 pandemic may

<sup>9</sup> Results from a California Farm Bureau survey found that 24 percent of survey respondents reduced their workforce due to COVID-19, 20 percent of survey respondents had employees who were unable to work due to local or state restrictions (including mandatory quarantines if workers contracted COVID-19) and 16 percent of survey respondents reported being unable to undertake normal seasonal activities due to COVID-19-related employee absences. These numbers are substantially lower than early reports hypothesized and appear less substantial than food demand side effects, given that 57 percent of survey respondents reported losing customers or sales due to COVID-19 (CFBF, 2020).

have reduced demand for and thus employment in some farm commodities.<sup>10</sup> Second, there may have been fewer workers available to be hired in 2020. Third, farm employers may have reported farm employment data late or failed to report entirely (Rural Migration News, August 2020).<sup>11</sup>

**Figure 2. California Agricultural Employment, 2019 and 2020**



Notes: Data are from the California Employment Development Department's monthly industry employment data. Available at:

<https://www.labormarketinfo.edd.ca.gov/data/employment-by-industry.html>

In the first and second of these plausible explanations, there are clear market conditions that would provide supporting evidence. First, if decreases in agricultural employment were driven by decreased demand for agricultural products, we would expect to observe (1) fewer shipments of all commodities and (2) either stable or decreasing prices depending on how quickly market quantity supplied adjusted to the falling demand. Second, if decreases in agricultural employment were due to a decreased supply of agricultural workers, we would expect to observe (1) fewer shipments of labor-intensive

<sup>10</sup> This potential explanation aligns with the widespread reports of farmers plowing their fields or donating crops because of plummeting prices and decreased demand. See, for example, the New York Times article: *Dumped Milk, Smashed Eggs, Plowed Vegetables: Food Waste of the Pandemic*: <https://www.nytimes.com/2020/04/11/business/coronavirus-destroying-food.html>

<sup>11</sup> California shipments of berries, tree fruits, and melons were similar 2019 and 2020, suggesting that farm employment data are likely to be revised upward when HR offices on large farms reopen.

commodities and (2) rising prices. If both demand and agricultural labor supply shift inward, we would expect to observe (1) fewer shipments of all commodities with the largest decreases for labor-intensive commodities and (2) stable or decreasing prices for most commodities with ambiguous effects for labor-intensive commodities.<sup>12</sup>

Comparatively, in the third case, we should see little or no change in volume or prices of shipments, though it is possible that the heightened use of the H-2A guest worker visa program during the pandemic influences market prices.<sup>13</sup>

Figure 3 shows market trends for California grapes and strawberries, two of the highest value fruits by production in California, and among the most labor intensive for harvesting. Panel A shows that 2020 weekly shipping-point prices for grapes are slightly above those in previous years, but production volume is slightly lower compared with prior years. Similarly, panel B shows that strawberry prices spiked in early July but were otherwise in line with prices in recent years and production volume is quite similar to past years. These data do not support a major decline in demand for labor or a labor shortage.<sup>14</sup> We next turn to a discussion of H-2A workers as a driver of higher labor costs and discuss the role of the COVID-19 pandemic as a catalyst for heightened use of the program.

### **H-2A Guest Workers**

The farm workforce in 2020 included more H-2A guest workers than previous years. DOL certified over 13,000 farm employers to fill almost 258,000 jobs with H-2A guest workers in FY19. In the first three quarters of FY20, DOL has certified 11,611 applications to fill 224,290 jobs, reflecting a 7.4% increase in the number of applications submitted (US DOL Office of Foreign Labor Certification, 2020). In order to be certified to employ H-2A guest workers, farm employers must try and fail to recruit US workers, provide transportation and free housing to the guest workers, and pay them, at minimum, the Adverse Effect Wage Rate (AEWR), which is typically well above the state minimum wage (Martin, 2020a).

H-2A guest workers are 10 to 20 percent more expensive than US workers. A US worker employed in California for the minimum wage of \$13 an hour in 2020 typically has labor costs of \$17 an hour with payroll taxes. An H-2A worker who must be paid

<sup>12</sup> The net effect on prices for labor-intensive commodities depends on the relative magnitude of production impacts from demand and labor shortages. Stable or falling prices imply that the demand effects outweigh the labor supply effects.

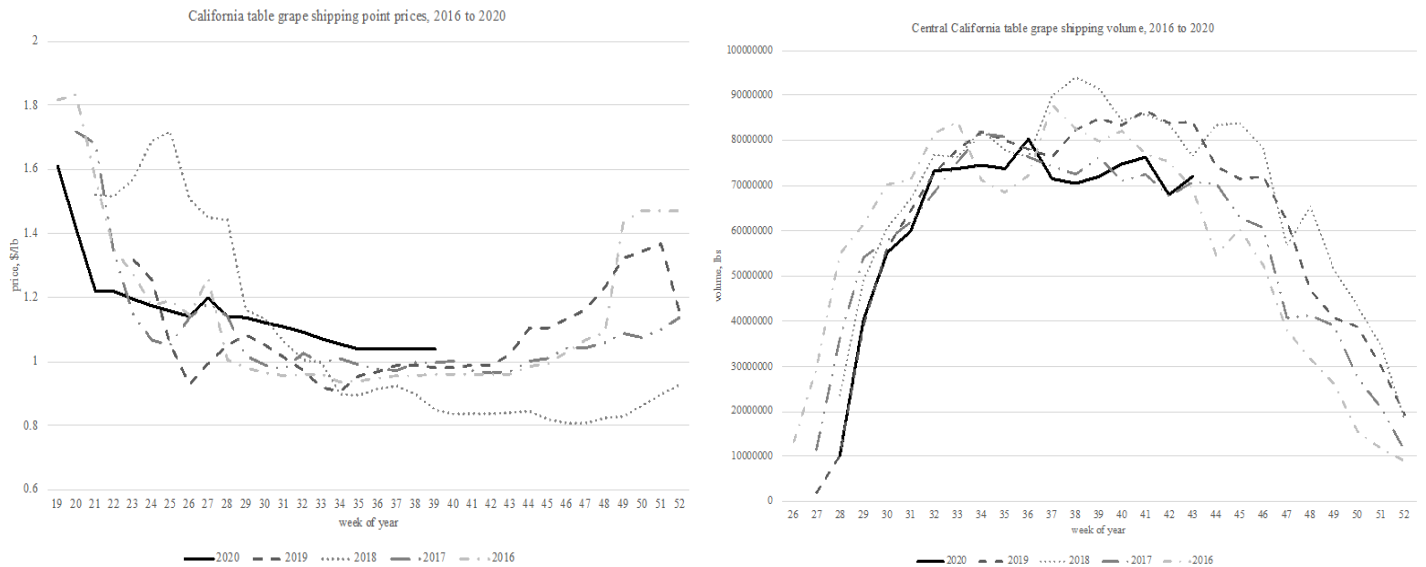
<sup>13</sup> Another consideration are the effects from government aid programs like the Coronavirus Food Assistance Program and the USDA Farmers to Families Food Box Program. These programs might reduce the price effects from inward shifts in demand but will not be reflected in volume measurements from shipping point data.

<sup>14</sup> Martin (2020c) draws a similar conclusion using iceberg lettuce shipments from California.

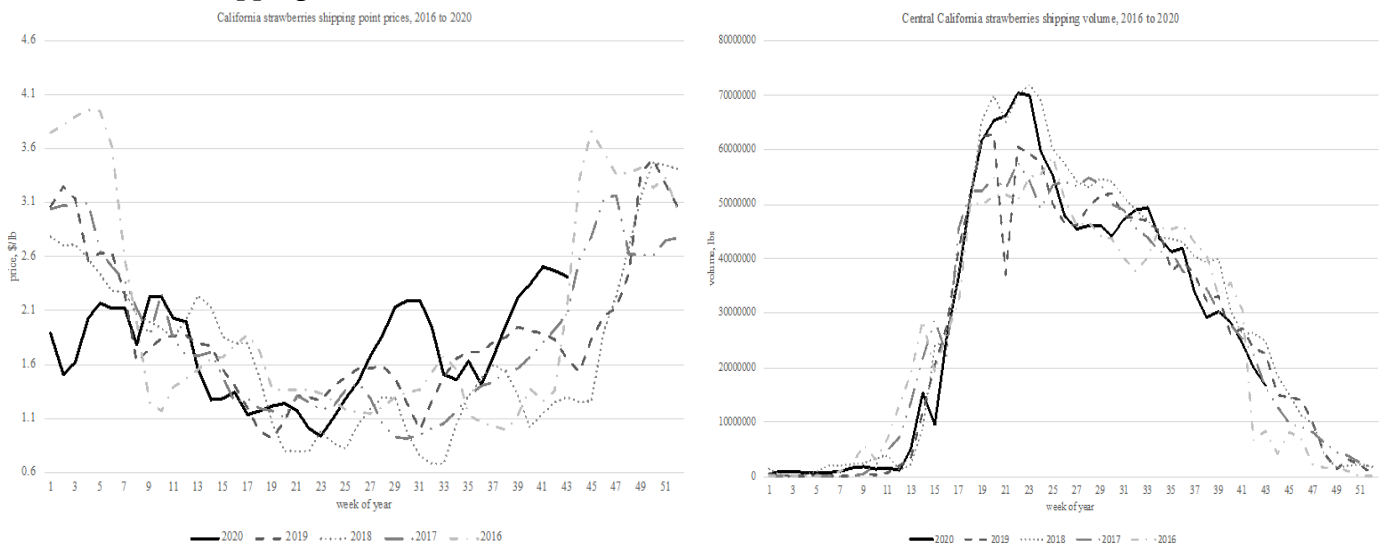
the AEW of \$14.77 an hour has labor costs of \$20 an hour, including the cost of visa fees, transportation, and housing. Both employers and H-2A workers are exempt from Social Security taxes, and the federal portion of unemployment insurance taxes, which narrows the cost gap between US and H-2A workers.

**Figure 3. California Grape and Strawberry Markets, 2016 through 2020**

**Panel A. Shipping Point Prices and Volume for California Table Grapes**



**Panel B. Shipping Point Prices and Volume for California Strawberries**

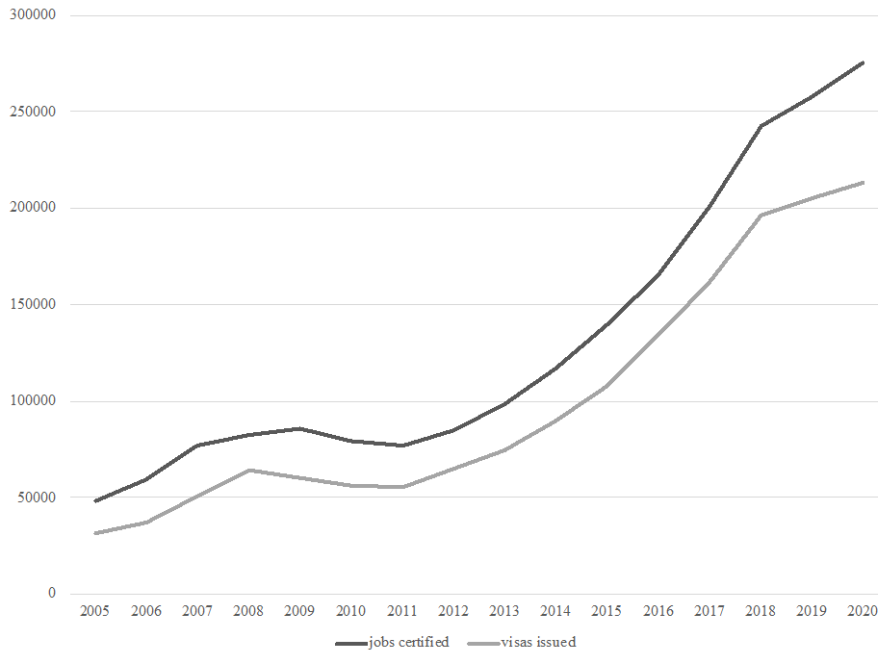


Notes: Data come from the USDA AMS and are compiled and aggregated by Agronometrics, <https://www.agronometrics.com>. Shipping point data reflect the prices and volume of commodities traded at prominent points in the U.S. and thus can reflect shifts in production and demand.



Figure 4 shows that the H-2A guest worker program tripled in size between FY12 and FY19, so that the 205,000 H-2A visa holders in FY19, who were in the US an average six months each, filled about 10 percent of the year-round equivalent jobs in US crop agriculture. H-2A workers are especially important in California strawberries, Washington, New York, and Michigan apple harvests, Florida citrus, and North Carolina tobacco and vegetables.

**Figure 4. H-2A Jobs Certified and Visas Issued, FY05-19**



Notes: Data from US DOL and US Department of State  
<https://www.foreignlaborcert.doleta.gov/h-2a.cfm>  
<https://travel.state.gov/content/travel/en/legal/visa-law0/visa-statistics/nonimmigrant-visa-statistics.html>

Employers perceive several advantages with H-2A guest workers. First, careful recruitment among Mexican workers eager to earn wages that are 10 to 12 times higher in the US ensures that H-2As are very productive; over 90 percent of H-2A guest workers are men from Mexico, and they are a decade younger than US workers. Second, H-2A workers are bound by contract to their US employer, so they do not switch employers to earn higher wages at critical times. Third, H-2A workers can be provided by labor contractors and other intermediaries, becoming a turn-key labor force for employers who do not have or want personnel offices. Almost half of H-2A workers are brought to US farms by contractors.

Despite, or perhaps because of, early fears of COVID-19 disruptions to the H-2A guest worker program due to international travel restrictions (Costa and Martin, 2020), the US

Departments of Homeland Security and State (DHS and SOS) changed their policies to make it easier to employ H-2A guest workers (Neifach, 2020). DOS waived requirements for in-person interviews for H-2A visa applicants, and DHS allowed H-2A workers who completed one contract to remain in the US and work for another farm employer certified to employ H-2A workers, saving employers recruitment and transport costs (Sparks, 2020).

There are several take-aways from the notable uptick in H-2A usage during the pandemic. First, high unemployment rates in the non-agricultural sectors did not translate to a larger farm workforce. This could be due to the temporary expansion of the unemployment insurance program or the lack of desire to perform farm work. Second, unless there is a sudden surge in worker availability, employers who began using the H-2A program as a result of COVID-19 are likely to continue using the program, accelerating the expansion of the program. Finally, given the high costs associated with hiring H-2A workers, rising labor costs could spur the quest for labor-saving mechanization.

### **Machines, Migrants, and Imports**

The third major impact of COVID-19 is to accelerate three major changes which were occurring before the pandemic: more mechanization, more guest workers, and more imports. Labor-saving mechanization reduces the need for hand labor, while harvesting aids make hand workers more productive. The big five commodities that employ farm workers are berries, apples, tobacco, melons, and hay and straw (Nigh, 2017). There are mechanization and aid projects underway in each commodity to reduce the need for hand workers and to make them more productive.

For example, planting dwarf apple trees and trellising them into fruiting walls makes apples easier to pick by machine or by hand with hydraulic platforms that carry workers who harvest into 1,000-pound bins. Similarly, conveyor belts traveling slowly in front of lettuce and strawberry pickers can increase their productivity by reducing the time required to take harvested produce to a collection point.

The H-2A guest worker program more than doubled in size over the last decade (Congressional Research Service, 2020), as unauthorized Mexico-US migration slowed (Passel and Cohn, 2018) and smugglers raised their fees (Roberts et al., 2010). Increases in border patrol efforts and costs to cross the border have potentially contributed to the increases in the number of migrants seeking year-round employment, rather than engaging in a circular, follow-the-crop employment flow (Massey, Durand, and Pren, 2016). An expanding infrastructure improved the efficiency of H-2A recruitment, and the development of housing for seasonal workers, including the conversion of hotels and motels into seasonal farm worker housing, provided employers with productive and loyal H-2A workers, a form of labor insurance for which more employers appear willing to pay.

The third trend is more imports of fresh fruit and vegetable commodities. Trade in fresh fruits and vegetables has been rising, partially due in part to investments by US producers and marketers in Mexico and other countries with complementary seasons and lower wages. For example, over half of the fresh fruit consumed in the US, and a third of the fresh vegetables, are imported, and Mexico is the source of half of US fresh fruit imports and three-fourths of US fresh vegetable imports (Martin, 2020d).

Figure 5 panel A shows that US imports of agricultural commodities from Mexico have risen faster than US exports, so that the US has had an agricultural trade deficit with Mexico since 2014. Figure 5 panel B shows that the US has had a trade deficit with Mexico in fresh fruits and vegetables over a much longer time horizon, and the deficit has grown significantly- the fresh fruit and vegetable deficit in 2019 (\$12,632,244) was nearly 100 times the deficit in 1975 (\$131,299).

Most US farm exports to Mexico are non-labor-intensive commodities, including grains, oilseeds, and animal products, but most US imports from Mexico are labor-intensive commodities including vegetables and fruits (Zahniser, 2020). Some imports of fresh fruits and vegetables complement US production, so that US production is stable even as imports rise, as with avocados, while others replace shrinking US production, as with fresh tomatoes. There are long-running disputes between Florida tomato growers and Mexican tomato exporters, and more recent complaints about Mexican blueberry and raspberry exports.<sup>15</sup>

The import percentage of US fresh fruit consumption rose from 23 percent in 1975 to 53 percent in 2016, and from 6 percent to 31 percent for fresh vegetables (Karp, 2018). Mexico's success in exporting labor-intensive commodities reflects Mexican and US comparative advantage, and is closely connected to US agriculture, since most of the capital and inputs on Mexico's export farms are from the US.

## Conclusions

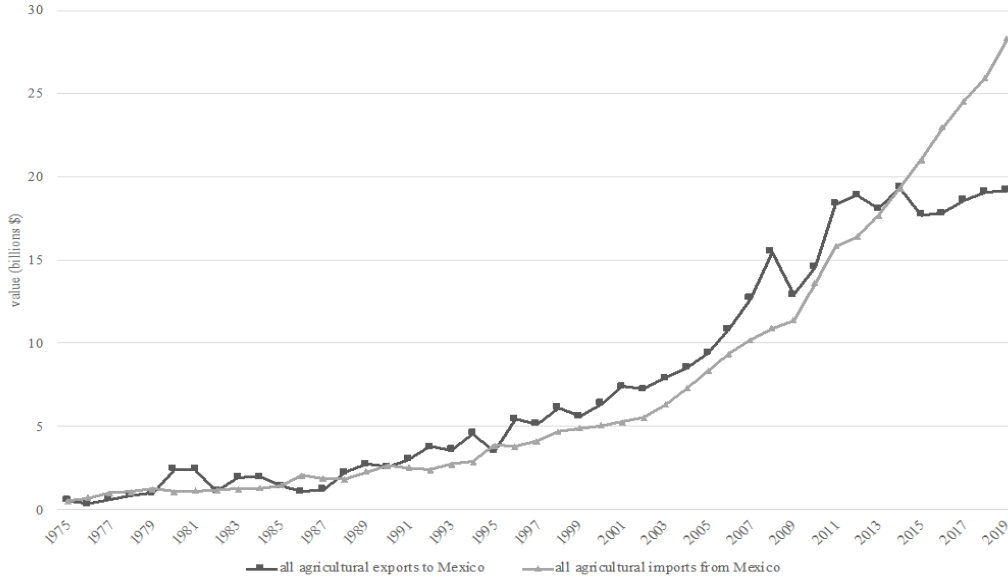
The COVID-19 pandemic highlighted the importance of hired workers in food production, leading to exceptions from stay-at-home orders for essential farm workers and exceptions to international travel restrictions that allowed H-2A guest workers to cross otherwise closed US borders. We found no compelling evidence of farm labor shortages and instead document trends in labor-intensive fruit and vegetable markets that are consistent with operations acquiring sufficient labor; trends were similar in 2019 and 2020. The H-2A program expanded in 2020 despite high unemployment rates, suggesting that it will be hard to get jobless local workers into seasonal farm jobs. Finally, fears of future pandemics and rising minimum wages accelerated trends

<sup>15</sup> <https://crsreports.congress.gov/product/pdf/IF/IF11701>

already underway, including labor-saving mechanization and harvesting aids that raise productivity, more guest workers, and more imports.

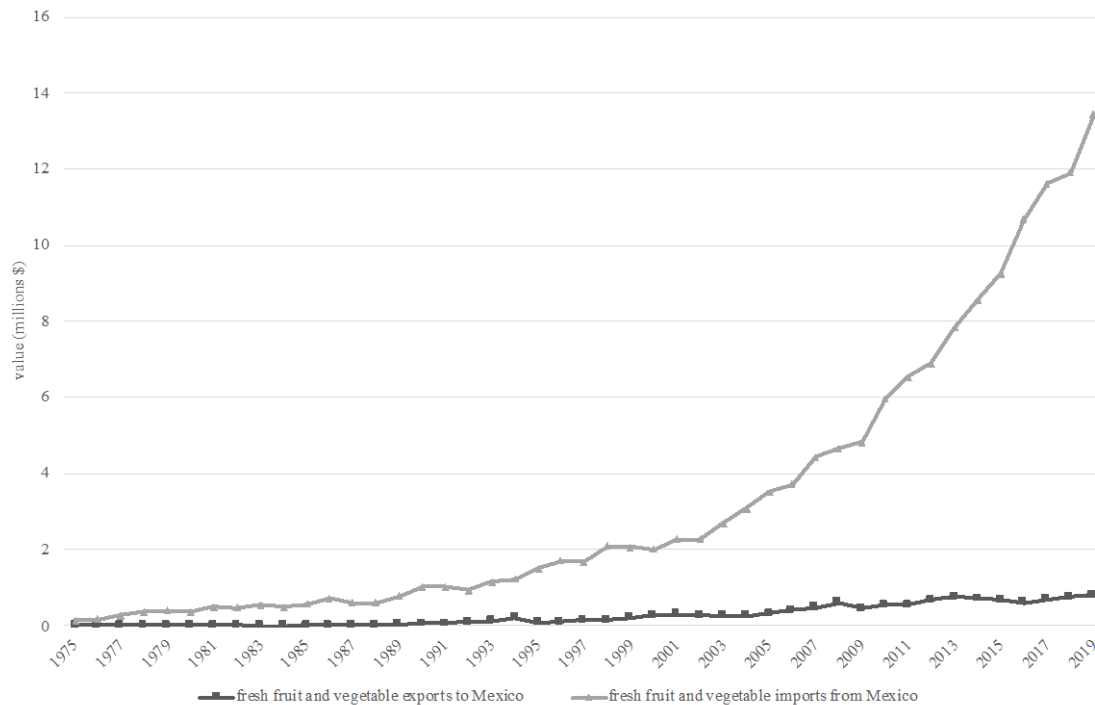
**Figure 5. US and Mexico Trade of Agricultural Commodities**

Panel A: Trade of all Agricultural Commodities



Source: Zahniser (2020). USDA, Economic Research Service using data from U.S. Census Bureau, Foreign Trade Statistics, as compiled by USDA, Foreign Agricultural Service, Global Agricultural Trade System.

**Panel B: Trade of Fresh Fruits and Vegetables**



Notes: Data from US Department of Agriculture Foreign Agricultural Service’s Global Agricultural Trade System (GATS)  
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