ESTIMATES OF THE POTENTIAL COSTS AND BENEFITS OF EXTENDING OVERTIME PAY ELIGIBILITY TO ALL FARMWORKERS IN MASSACHUSETTS

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Introduction and Background

On March 15, 2019, the Massachusetts Supreme Judicial Court (MSJC) ruling in the *Arias-Villano v. Chang and Sons Enterprises, Inc.* case had the effect of expanding the types of workers who would be entitled to overtime premium pay rates as set out by the state's Minimum Fair Wage law (M.G.L. c. 151 § 2). The Minimum Fair Wage law requires that employers pay overtime rates equal to time-and-one-half regular pay rates for any work that exceeds 40 hours weekly. More specifically, the 2019 MSJC ruling expanded this overtime pay rate requirement to cover workers engaged in the "preparation for market, delivery to storage or to market or to carriers for transportation to market of agricultural, floricultural and horticultural commodities." Massachusetts' expansion of overtime protections follows a recent trend among states to improve the quality of jobs in the agricultural sector, including California (2016)[1], New York (2019)[2] and Minnesota (2012).[3] These state provisions strengthen labor standards beyond what is provided through federal regulation.

This pattern of state-level efforts to improve the terms of compensation for agricultural workers resemble state-level efforts to increase state minimum wage rates above the federal rate. Massachusetts has frequently increased the state *minimum wage rate* feature of its Minimum Fair Wage law so that Massachusetts' businesses are required to pay a higher minimum wage rate than what federal law requires. In fact, the Massachusetts state minimum wage rate has consistently exceeded the federal rate since 1996—i.e., for nearly a quarter century. Massachusetts' current state minimum wage rate is $12.75, 76 percent above the current federal rate of $7.25. Massachusetts has been a leader in leveraging its legislative tools to improve the working conditions for the state's lowest paid workers.

At the request of Attorney Claudia Quintero of the Central West Justice Center, I provide in this research brief estimates of the potential economic impact of this recent MSJC ruling to help inform the current policy debate around the expansion of overtime protections to farmworkers.[4] This analysis relies only on publicly available data published by the following government agencies: the U.S. Department of Labor, the U.S. Census Bureau, and the U.S. Department of Agriculture. These are the same data sources used to inform much of the policymaking that occurs at the local, state, and federal levels. This brief provides rough approximations on how expanding overtime protections to agricultural workers will: (1) impact the living standards of Massachusetts farmworkers, and (2) impact the business costs of Massachusetts farmers.

Before proceeding with the analysis of this report, one qualification is required. Although the MSJC ruling is meant only to extend overtime protections to workers engaged in post-harvest activities, all of the analyses in this brief assume that overtime protections would be expanded to cover *all* farmworkers. I do this for the following reasons. First, publicly available data do not allow for a distinction between agricultural workers who do harvesting, as opposed to post-harvesting, work. Moreover, one of the concerns expressed by Michael Flanagan, Director of

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[1] https://www.dir.ca.gov/dlse/Overtime-for-Agricultural-Workers.html.
[2] https://www.labor.ny.gov/workerprotection/laborstandards/farm_labor.shtm.
[3] https://www.lexology.com/library/detail.aspx?g=fe3d6756-fc7e-4c83-848e-484857fe90a1.
[4] This report was prepared at PERI as an independent research project. No one at the Central West Justice Center exercised any authority over the final contents of the study.

Massachusetts Labor Standards, in his March 13, 2020 proposed guidance on the MSJC ruling is that the same workers tend to engage in both harvesting and post-harvesting activities. As a result, whether and when the expanded overtime protections coverage applies to such workers is somewhat ambiguous. To address this ambiguity, this brief provides upper-end estimates as to the impact of expanded overtime protections coverage—particularly with regard to the increased business costs for farms.

The main findings of this brief are as follows:

- **For the average Massachusetts farmworker, current pay rates are inadequate to support a decent standard of living.** The average farmworker earns $13.75 per hour and works an average of 33 to 36 weekly hours, depending on the season. Year-round earnings at this level—about $25,000—falls short of the $26,900 required to support a minimally decent living standard for one adult with no dependents. $26,900 is equal to twice the official poverty line as determined by the U.S. Census. Expanding overtime protections would increase the weekly earnings of the average farmworker with overtime hours by 16.7 percent.

- **Expanding overtime protections to include Massachusetts farmworkers can be expected to increase the average farm's annual production costs by less than 2 percent of overall revenue.** I estimate that the wage bill of farm owners will increase by 5 percent if they pay farmworkers a premium time-and-one-half overtime rate for overtime hours. Because labor expenditures take up 32 percent of the average farm's overall revenue, a 5 percent increase in labor costs represents 1.6 percent of the average farm's overall revenue. The magnitude of this increase in labor costs does not vary widely by farm size.

These findings suggest that the large body of research on the impact of strengthening a similar labor standard—the state minimum wage rate—could be instructive with regard to how farm owners will respond to such a policy change. This is because the average cost increase to Massachusetts farm owners from expanding overtime protections—less than 2 percent of revenue—is in line with the cost increases that other low-wage businesses, such as restaurants, have experienced from past minimum wage rate increases. Past minimum wage hikes have largely produced the intended positive consequence of raising the income of low-wage workers by increasing their pay rate and imposing only modest cost increases on low-wage employers.[5] To illustrate the modest size of this cost increase, I provide some examples of how much consumer prices would increase if the labor cost increase to farm owners is passed on fully to consumers:

  - The price of an average gallon of milk would increase from $3.50 to $3.52.
  - The price of a pound of asparagus would increase from $2.50 to $2.51.
  - The price of a pint a blueberries would increase from $3.00 to $3.02.[6]

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[5] See "Minimum Wages and the Distribution of Family Incomes," by Arindrajit Dube, *American Economic Journal: Applied Economics*, 11(4), 268-304, 2019.
[6] https://www.marketnews.usda.gov/mnp/fv-home;
https://www.ams.usda.gov/sites/default/files/media/RetailMilkPrices2018.pdf

Economic profile of Massachusetts Farmworkers

Massachusetts farms use hired farm labor,[7] unpaid workers (typically family members), and labor contractors.[8] According to the latest U.S. Census of Agriculture (COA), conducted in 2017, the large majority of Massachusetts farmworkers are directly employed by farms and are paid. In 2017, Massachusetts farms employed 13,142 hired farmworkers versus 9,686 unpaid farmworkers.[9] Moreover, labor contractors represent only 10.1 percent of farms' total labor expenditures. A significant share (nearly 60 percent) of hired farmworkers were employed short-term, i.e., less than five months over the course a year. That leaves just over 40 percent of hired farmworkers who were employed five months or more.

I supplement this basic information about farmworkers from the COA with three other publicly available government data sources: the Current Population Survey (CPS) from the U.S. Department of Labor, the American Community Survey (ACS) from the U.S. Census Bureau, and the Farm Labor Survey from the U.S. Department of Agriculture, to provide a basic economic profile of these farmworkers. The CPS serves as the primary government data source for describing key features of the U.S. labor market, such as the official unemployment rate. The ACS serves as the primary government data source for providing demographic profiles of the U.S. population, with particularly large sample sizes that facilitate the examination of small subsets of the American population.[10] The Farm Labor Survey (FLS) is, like the COA, administered by the National Agricultural Statistics Service (NASS) of the U.S. Department of Agriculture with the assistance of the U.S. Department of Labor. The FLS surveys a representative sample of farms, and produces national and regional estimates on farm labor, and also for the individual states of California, Florida, and Hawaii.[11]

I use data from the CPS survey to describe the employment situation for the average farmworker in Massachusetts at different points of the year. This feature of the CPS data is particularly important for observing features of Massachusetts farm employment that are seasonal. These features include average hours worked, as well as the average number of employed farmworkers. I use this Massachusetts-specific data in combination with regional employment data from the FLS. The FLS reports employment and wage data for what it refers to

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[7] These include migrant farmworkers who reside temporarily near the farm at which they are employed. In 2017, migrant farmworkers totaled to 837 workers in Massachusetts according to the Census of Agriculture. Agricultural work is defined as, "Work done on a farm or ranch in connection with the production of agricultural products, including nursery and greenhouse products and animal specialties such as fur farms or apiaries. Also included is work done off the farm to handle farm related business, such as trips to buy feed or deliver products to local market." (See: https://downloads.usda.library.cornell.edu/usda-esmis/files/x920fw89s/c821h164m/fq9788943/fmla1119.pdf).

[8] These are independent contractors who hire their own crews to work on a farm.

[9] The Census of Agriculture, conducted every five years, provides a complete count of U.S. farms and ranches and the most comprehensive reporting about key economic features of the agriculture industry (see: https://www.nass.usda.gov/AgCensus/).

[10] I access ACS data via IPUMS USA. These data are prepared by Steven Ruggles, Sarah Flood, Ronald Goeken, Josiah Grover, Erin Meyer, Jose Pacas and Matthew Sobek (IPUMS USA: Version 10.0 ACS. Minneapolis, MN: IPUMS, 2020. https://doi.org/10.18128/D010.V10.0).

[11] Per May 15, 2020 email communication, NASS statistician Adam Wosoba confirmed that reliable Massachusetts-level data is unavailable from the FLS.

as the farm labor region "Northeast I." The Northeast I region includes the states of Connecticut, Maine, Massachusetts, New Hampshire, New York, Rhode Island, and Vermont.

For demographic features of Massachusetts farmworkers, I use demographic data from the ACS. While the CPS also provides demographic information on farmworkers, the ACS' much larger sample sizes provide more reliable estimates on the demographic characteristics of farmworkers, an occupation that is held by less than one percent of the U.S. workforce.[12]

Table 1 presents basic individual characteristics of the average Massachusetts farmworker[13] as compared to the entire Massachusetts workforce. The demographic profile of Massachusetts farmworkers compared to all Massachusetts workers follows the national pattern.[14] The average Massachusetts farmworker is younger than the average worker across the state (32 years old and 41 years old, respectively). Also, Massachusetts farmworkers are more likely to be male, non-White—in particular Hispanic, and foreign-born compared to the average Massachusetts worker.

Table 1. Characteristics of Massachusetts Farmworkers and All Massachusetts Workers

	Farmworkers	All Workers
Average Age	32 years old	41 years old
Percentage Non-White (including Hispanic)	34%	26%
Percentage Hispanic	24%	10%
Percentage Female	41%	50%
Foreign-born	30%	21%

Source: ACS, 2014-2018. These figures are for employed workers.

Table 2 presents information about Massachusetts farmworkers' household composition and economic standing alongside the same measures for all Massachusetts workers. The average family among Massachusetts farmworkers is similar in size as for all Massachusetts workers (3 family members). However, the typical Massachusetts farmworker household tends to include extended adult family members as opposed to related children.

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[12] The ACS surveys nearly 300,000 households monthly compared to the CPS' monthly sample of 60,000 households (https://www.census.gov/programs-surveys/acs/about/top-questions-about-the-survey.html, https://www.bls.gov/cps/cps_over.htm#available). Even with ACS' large sample size, I pool five years of data in order to create a sample of about 200 observations. Here, and throughout this brief, I use the ACS-provided sampling weights to make the estimates representative at the state-level. The aggregate occupational group, "Farming, fishing, and forestry occupations," itself makes up less than one percent of employed U.S. workers in 2019 (see: https://www.bls.gov/cps/cpsaat09.htm). Note that both the ACS and the CPS will provide us with information specifically about workers who identify their farmworker occupation as their primary job. Migrant workers, who make up 6.4 percent of paid farmworkers in Massachusetts, according the 2017 COA, are likely to be under-represented in the CPS or the ACS by virtue of the fact that they represent such a small share of the agricultural workforce.

[13] I use the following occupations to define farmworkers in the CPS: "Graders and sorters, agricultural products," and "Miscellaneous agricultural workers, including animal breeders." I further narrow this category of workers to only those employed in the industries, "Crop Production," "Animal Production," and "Support Activities for Agriculture and Forestry."

[14] See: https://www.ers.usda.gov/topics/farm-economy/farm-labor/#demographic.

Table 2. Household Profile of Massachusetts Farmworkers and All Massachusetts Workers

	Farmworkers	All Workers
1. Average family size	3 family members	3 family members
2. Average number of related children in family	0 children[15]	1 child
3. Average own earnings	$12,000	$40,000
4. Total family income	$58,300	$95,200
5. Families in severe poverty (family income falls below the official poverty line)	17.6%	8.3%
6. Families in near poverty (family income falls below 200% of the official poverty line)	38.0%	16.9%
7. Average own earnings as percent of total family income (row 3/row 4)	31%	53%

Source: ACS, 2014-2018. These figures are for employed workers.

Massachusetts farmworkers' economic situation is clearly more insecure than is the case for the average Massachusetts worker. This is evident in the significantly lower average earnings among farmworkers relative to the average worker ($12,000 versus $40,000).

Moreover, the poverty rate among farmworkers is more than double the rate across all Massachusetts workers.[16] The official poverty line for one adult is $13,500. I refer to the official poverty line as a measure of severe poverty as it is an indicator of a severe level of economic deprivation. Consider an alternative set of household income thresholds that measure the level of income that households need in order to achieve a modest, but decent, standard of living developed by the Economic Policy Institute (EPI). These family budgets account for the costs of housing, food—nearly all of which is prepared at home, childcare, transportation, healthcare, other necessities such as clothes and household cleaning supplies, and taxes. These family budgets do *not* allow for any savings for emergencies, college, or retirement savings. EPI's family budget for a one-adult/no child household in Worcester County, Massachusetts—the county with the most acres of farmland and the largest number of farms—is $39,803.[17] This income threshold is nearly three times the official poverty line of $13,500. The income threshold for a household shared by two-adults with no children is $52,149. Each adult in this household would need to earn about $26,000 to achieve this income level. This $26,000 figure is equal to roughly twice the official poverty line of $13,500.[18]

In row 6 of Table 2, I compare the poverty rates of farmworkers and the average worker, this time using a more reasonable measure of poverty–what I call "near-poverty." The "near-poverty"

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[15] The average number of children for these workers is 0.36 indicating that while some farmworkers do have related children in their households, this is not the typical (average) situation.

[16] Note that the official poverty income thresholds are determined according to composition and size of the family. See: https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-thresholds.html.

[17] See: https://ag.umass.edu/resources/massachusetts-agricultural-data/land-in-farms/acres-counties.

[18] See: https://www.epi.org/resources/budget/. The MIT living wage calculator also produces estimates for the typical income levels necessary to support a household. While the MIT levels are lower than the EPI family budget, the levels still substantially exceed the official poverty line. The 2019 MIT income figures for Worcester County are $26,701 for a one-adult household with no children and $40,589 for a two-adult household with either one or two working adults. See: https://livingwage.mit.edu/counties/25027.

income threshold is $26,900, twice the official poverty line. Nearly two-fifths of the families of Massachusetts farmworkers are poor according to this measure, as compared to less than one-fifth of the families across all Massachusetts workers.

Finally, it is clear that farmworkers contribute significantly to their family's living standards. As row 7 in Table 2 shows, the earnings of the average farmworker in Massachusetts makes up nearly one-third of their family's income. Therefore, any change in these workers' earnings will have a meaningfully impact on the living standards of their families.

Potential Economic Benefits to Farmworkers

In this section, I estimate how much the average farmworker's earnings can be expected to increase given current pay rates and work schedules. The data available on the work schedules and pay rates of Massachusetts farmworkers is extremely limited. As a result, I combine here estimates from multiple sources and across multiple years in order to develop reasonable estimates.

Hourly wage rate

First, I estimate that the average hourly pay rate of Massachusetts farmworkers. To do this, I start with an estimate of their average hourly pay from ten years of CPS wage data (2010-2019), or $13.15 (in 2020 dollars).[19] This pay rate is reasonably consistent with the 2019 average pay rates across the Northeast I region reported in the *Annual Farm Labor Survey, 2019* for "Packers" ($12.82), "Graders" ($13.27), and "Crop Workers" ($14.23). Another useful wage estimate is the "Adverse Effect Wage Rate" (AEWR) published by the U.S. Labor Department. This wage rate is the wage standard set for migrant workers in the Labor Department's H-2A program—its program for temporary agricultural employment of foreign workers. According to the Labor Department:

> AEWRs are the minimum wage rates the Department has determined must be offered and paid by employers to H-2A workers and workers in corresponding employment for a particular occupation and area so that the wages and working conditions of similarly employed workers in the United States will not be adversely affected.[20]

In other words, the AEWR is meant to reflect local, occupation-specific wages. For 2020, the AEWR for Massachusetts is $14.29 per hour.[21] Notably, the legal agricultural minimum wage of $8.00 appears to have limited influence on farmworkers' wages. This may be, in part, due to the fact that Massachusetts state minimum wage was $12.00 in 2019, and $12.75 in 2020. The state minimum wage regulates the wages of most other non-salaried workers. Based on these various wage estimates, I approximate the average hourly pay of Massachusetts farmworkers as the mean of $13.15 and $14.29, or $13.75.

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[19] As noted above, I identify farmworkers in the CPS as those workers employed in the occupations of "Graders and sorters, agricultural products," and "Miscellaneous agricultural workers, including animal breeders," within the industries, "Crop Production," "Animal Production," and "Support Activities for Agriculture and Forestry."

[20] https://www.federalregister.gov/documents/2019/12/19/2019-27410/labor-certification-process-for-the-temporary-employment-of-aliens-in-agriculture-in-the-united.

[21] https://www.foreignlaborcert.doleta.gov/adverse.cfm.

Average weekly hours

Second, I approximate, by season, the work schedule of the average farmworker in Massachusetts. To do this, I again combine data from different sources.

The CPS. The CPS is the only data set that I am aware of that provides micro-data on the usual hours worked by farmworkers that is state-specific and monthly. This is particularly important for estimating the potential increase in annual earnings that could result from farmworkers becoming eligible to receive overtime pay rates. This is because the seasonal nature of agricultural work in Massachusetts will strongly influence the number of workers who may work in excess of forty hours weekly in any given month.

The CPS is able to provide estimates of usual hours worked depending on whether a worker typically works in excess of 40 hours per week, the point at which a farmworker could become eligible for time-and-a-half overtime pay rates. However, because the sample size in the CPS is small,[22] I only use these estimates to guide a set of rough approximations for the number of usual hours worked, rates of workers working overtime, and usual hours worked overtime.

According to the CPS, the highest proportion of farmworkers with overtime hours occurs in the summer and fall seasons. During these seasons approximately 20 percent of workers work in excess of 40 hours weekly. The lowest proportion of workers with overtime hours occurs during the winter season (10 percent), and about 15 percent of workers work overtime in the spring.

The CPS data also indicate that the average work schedule among those workers with overtime hours is 60 hours. The average work schedule among workers without overtime hours is 30 hours. Based on these figures, the average weekly hours across all workers (including both those who work overtime hours and those who do not work overtime hours) is between 33 and 36 hours, again, depending on the season.[23]

The FLS. The pattern of employment indicated by the CPS data is consistent with data from the 2019 Farm Labor Survey (FLS). The FLS provides seasonal snapshots of the employment situation of farmworkers by region. Unfortunately, the FLS combines Massachusetts with New York in the Northeast I region. As a result, the figures are largely driven by New York state's agricultural sector as the number of hired farmworkers in New York was 55,636 in 2017, as compared to 13,142 in Massachusetts.[24] The data from the FLS, therefore, also provides only a rough approximation of the farmworker situation in Massachusetts. What the FLS seasonal employment figures make clear is how the employment levels vary across the four seasons. For the entire Northeast I region in 2019, peak employment levels occurred in the summer and fall (about 36,000 workers), the lowest employment level occurred in the winter (about 24,000 workers), and the employment level in the spring fell in between that of winter and summer

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[22] Ten years of CPS monthly data files, from 2010 – 2019, produced a sample size of 85 farmworker observations in Massachusetts. I used CPS-provided sampling weights to make all our estimates representative at the state-level.
[23] These average hours are based on the following calculations. In the summer and fall seasons, I assume that 20 percent of workers work 60 hours weekly and 80 percent work 30 hours weekly. This produces an average weekly schedule of 36 hours: (20% x 60 hours + 80% x 30 hours=36 hours). In the winter season, I assume that 10 percent of workers work 60 hours weekly and 90 percent work 30 hours weekly. This produces an average weekly schedule of 33 hours: (10% x 60 hours + 90% x 30 hours=33 hours). In the spring season, I assume that 15 percent of workers work 60 hours weekly and 85 percent work 30 hours weekly. This produces an average weekly schedule of 35 hours: (15% x 60 hours + 85% x 30 hours=34.5 hours).
[24] See: https://quickstats.nass.usda.gov/.

levels at 32,000 workers. This pattern is consistent with the pattern of overtime hours indicated by the CPS, with the highest shares of workers with overtime hours occurring in the summer and fall, and least occurring in the winter. This consistency supports the reliability of the work schedule estimates from the CPS.

Based on the information from these two sources, I estimate that Massachusetts farmworkers, on average, earn $450 to $500 weekly. These figures come from combining the average weekly hours cited above, between 33 and 36 hours, and the hourly pay rate of $13.75. If a farmworker is able to work year-round (50 weeks, assuming a 2-week unpaid vacation), their annual earnings would amount to $25,000. This income level falls between the severe, official poverty line for one adult ($13,500) and "near-poverty" amount of $26,900. The year-round earnings for the average farmworker falls seven percent below the near-poverty income threshold.

If the average farmworker has caretaking responsibilities for either of the other two people in their family, the year-round earnings for the average farmworker falls 28 percent below the near-poverty income threshold of $34,600. These figures indicate that the average farmworker's annual earnings, at the current rates, is inadequate for achieving a decent standard of living, even if working year-round.

Most farmworkers, however, do not work year-round. According to the COA, nearly 60 percent of hired farmworkers work less than 150 days per year. That is, the majority of hired farmworkers work 5 months or less a year.[25] This can help explain why the average farmworker's annual earnings from the CPS—$12,000—is significantly lower than the figure for year-round employment of $25,000.[26] The two features of farmworkers' employment—relatively low pay rates and part-year employment—contribute to these workers' high rates of severe poverty and near poverty relative to the overall Massachusetts' workforce (see rows 5 and 6 of Table 2).

Table 3 shows how much earning an overtime premium pay rate could increase the weekly pay of the average farmworker who works overtime hours. In the first row, Table 3 shows that the average farmworker's weekly earnings from a 60-hour work week, in the absence of earning overtime rates, is $825.00 ($13.75 per hour x 60 hours). If this farmworker earned 1.5 times the regular pay rate for the 20 hours of overtime work, this worker's weekly earnings would instead be $962.50—a 16.7 percent increase in the weekly pay. In other words, receiving overtime pay rates for overtime hours is equivalent to an overall pay rate increase of $137.50, or 16.7 percent—a substantial gain in weekly earnings.[27]

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[25] The COA does not provide this type of information for workers hired by labor contractors.

[26] If, for example, I assume that 60 percent of Massachusetts farmworkers work 20 weeks per year (near the upper limit of 150 days), and 40 percent work 50 weeks per year (year-round), than the average yearly earnings would be $19,000.

[27] To our knowledge, the data needed to estimate how much the overtime premium pay rate would close the gap between the average farmworker's annual earnings and the income the worker needs to support their household at a decent living standard is unavailable. In particular, I do not have any reliable estimates of the actual number of weeks the average farmworker works in a year.

Table 3. Estimated Weekly Earnings with and without Overtime Premium Pay Rate

	Earnings: 40 Hours	Earnings: 20 Overtime Hours	Weekly Earnings
1. Weekly earnings (20 OT hours, regular rate of $13.75/hr.)	$550.00	$275.00	$825.00
2. Weekly earnings (20 OT hours, OT Rate of $20.63/hr.)	$550.00	$412.50	$962.50
3. Increase in weekly earnings, due to OT Rate of $20.63/hr. (row 2 – row 1)	$0.00	$137.50	$137.50 (+16.7%)

Sources: CPS 2010-2019, FLS 2019.

In sum, at the current pay rates, the average Massachusetts farmworker's earnings is inadequate to support a decent, if modest, standard of living. The average farmworker earning $13.75 per hour and working 33 to 36 weekly hours could not support one adult at a decent living standard even with year-round employment. Such year-round employment would provide for about $25,000 in earnings. However, as noted above, the typical farmworker has a part-year schedule which helps explain their much lower average annual earnings of $12,000. This combination of low pay rates and part-time schedules contribute to the high poverty rates among farmworkers. For the average farmworker with overtime hours, an expansion of overtime protections could boost their weekly earnings by 16.7 percent.

Potential Economic Costs to Farm Owners

In this section, I estimate how much labor costs would rise for farm owners if all paid farmworkers qualify for overtime pay.

Increase in Payroll by Season

Any estimate of the potential increase in labor costs to farms of extending overtime protections to all paid farmworkers must take into account the seasonal fluctuations in farm employment. To do this, I approximate the farm labor costs with and without overtime premium pay rates by season.

Starting with Table 4, I first approximate the wage bill of farms, assuming no overtime premium pay rates. In column 1, I provide approximations of the overall employment levels of hired farmworkers by season. As Table 4 shows, I assume summer and fall employment levels of 10,000 workers.

This employment figure of 10,000 is based on the following two facts. First, as noted above, according to the 2019 FLS, the highest employment levels occur in the summer and fall months. Second, again as noted above, the 2017 COA reports that Massachusetts farm owners employed 13,142 hired workers.[28] Of these 13,142 hired farmworkers in 2017, 7,683 workers (58.5

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[28] These hired workers include, "…regular workers, part-time workers, and members of the producer's family if they received payments for labor." The COA, however, does not provide information about the occupational composition

percent) worked less than 150 days per year (i.e., less than five months per year). Based on these two facts, it is reasonable to assume that at least 7,700 workers would be employed in the summer and fall seasons. The COA also reports that in 2017, Massachusetts farms employed nearly 5,500 longer-term workers (i.e., the remainder of 13,142 workers who worked *more* than 150 days/year) over the year. Therefore, I assume that approximately half of these longer-term workers would also be employed over the summer and fall seasons for a total of 10,000 workers (see column 1, rows 3 and 6).[29]

Again, according to the FLS, the winter season has the lowest employment levels. For this season, therefore, I assume that hired farmworkers do not include many of the shorter-term workers and instead, is primarily made up of the longer-term workers who remain after the high level of activity of the growing season has concluded. Therefore, I assume an employment level of 5,000 for the winter season (see column 1, row 9). For the spring season, I assume that the employment level is midway between the winter and summer seasons to reflect that, according to the FLS, farm employment tends to be higher in the spring relative to the winter, but lower than in the summer (see column 1, row 12).

With regard to work schedules, as noted above, the highest share of workers who work more than 40 hours weekly occurs in the summer and fall at about 20 percent. I use this share to estimate the number of workers who work 30 hours per week (i.e., the average hours among workers who do not work overtime) and the number of workers who work 60 hours per week (i.e., the average hours among workers who do work overtime). I show these figures in column 1, rows 1, 2, 4 and 5.

Based on these figures, I estimate that the overall summer wage bill—the wage bill for hired farmworkers for June, July and August—is nearly $60 million. I assume the same basic features for the fall season. That is, I assume an employment level of 10,000 hired farmworkers, with 20 percent working 60 hours weekly and 80 percent working 30 hours weekly. The fall seasonal wage bill, therefore, is the same $60 million (see column 4, row 6).

The situation in the winter is different. For the winter season, the employment level is lower – at 5,000 workers, only 10 percent of whom work overtime hours. The seasonal wage bill is approximately $27 million (see column 4, row 9). Between the winter and spring, both the employment levels and share of workers who work overtime hours increases. I approximate a spring employment level at 7,500 workers, 15 percent of whom work overtime.

In total, these approximations of the overall size of the workforce, average pay rates, and work schedules, add up to an annual wage bill of $188.7 million for hired farmworkers (see

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of these hired workers. For the purposes of this exercise, I assume that all of these hired workers fall into the occupational categories of laborers engaged in "the growing and harvesting of agricultural, floricultural and horticultural commodities" or engaged in "preparation for market, delivery to storage or to market or to carriers for transportation to market of agricultural, floricultural and horticultural commodities." This assumption will cause this analysis to *overestimate* the potential cost increase to farm owners due to the expansion of overtime protection to these two types of farmworkers. This is because at least some paid farmworkers do not fall into either of these two categories and therefore should be excluded from any estimate of the cost increase associated with expanding overtime protections to cover these two categories of farmworkers.

[29] I assume that the employment level in 2020 is the same as in 2017, i.e., 13,142. The previous COA (2012) reported 15,649 hired farmworkers suggesting a declining level in farm employment from 2012 to 2017. However, the employment levels in 2007 and 2002 were 13,039 and 13,545, respectively.

column 4, bottom row). This approximation is about 13 percent higher than the most recent figure available on the annual wage bill for hired farmworkers. According to the COA, the annual wage bill in 2017 was $166.4 million (inflated to 2020 dollars). In other words, the estimates of the basic features of farm employment from publicly available government data sources appears to capture reasonably well, if moderately overestimating, the annual wage bill for hired farmworkers.

Table 4. Estimated Seasonal and Annual Wage Bill with No Overtime Pay Rates

	(1) # of Workers	(2) Average Weekly Hours	(3) Average Hourly Pay	(4) Seasonal Wage Bill
SUMMER:				
1. Workers with OT hours, no OT pay	2,000	60	$13.75	$19.8 million
2. Workers with no OT hours	8,000	30	$13.75	$39.6 million
3. All summer workers	*10,000*	*36*	*$13.75*	*$59.4 million*
FALL				
4. Workers with OT hours, no OT pay	2,000	60	$13.75	$19.8 million
5. Workers with no OT hours	8,000	30	$13.75	$39.6 million
6. All fall workers	*10,000*	*36*	*$13.75*	*$59.4 million*
WINTER				
7. Workers with OT hours, no OT pay	500	60	$13.75	$5.0 million
8. Workers with no OT hours	4,500	30	$13.75	$22.3 million
9. All winter workers	*5,000*	*33*	*$13.75*	*$27.2 million*
SPRING				
10. Workers with OT hours, no OT pay	1,125	60	$13.75	$11.1 million
11. Workers with no OT hours	6,375	30	$13.75	$31.6 million
12. All spring workers	*7,500*	*34.5*	*$13.75*	*$42.7 million*
			ANNUAL WAGE BILL:	$188.7 million

Sources: See text.

Next, in Table 5, I show how the labor costs, across all Massachusetts farms, can be expected to increase given the 2017 pattern of employment and work schedules. Table 5 presents the same information as Table 4 with one adjustment: the pay rate for overtime hours is set at 1.5 times the average rate of $13.75, or $20.63. As shown in rows 1-3, 2,000 summer farmworkers work, on average, 20 overtime hours at $20.63 per hour in addition to the 40 hours they work at the $13.75 regular rate. The remaining 8,000 summer farmworkers work 30 hours at the $13.75 per hour. Adding up these labor costs over the 12 weeks of the summer season, the overall summer wage bill totals $62.7 million (see column 4, row 3), a 5.6 percent increase relative to the summer wage bill without the overtime rates. This season, along with the fall season, experiences the largest increases in wages as they are the seasons with the highest employment levels and the highest proportions of workers working overtime hours.

Table 5. Estimated Seasonal and Annual Wage Bill, with Overtime Pay Rates

SEASON	(1) # of Workers	(2) Average Weekly Hours	(3) Average Hourly Pay	(4) Seasonal Wage Bill
A. Summer				
1. Workers with OT hours				
1a. Regular hours	2,000	40	$13.75	$13.2 million
1b. OT hours		20	$20.63	$9.9 million
2. Workers with no OT hours	8,000	30	$13.75	$39.6 million
3. All summer workers	*10,000*	*36* (employment-weighted average)	*$14.51* (employment-weighted average)	*$62.7 million (rows 1 + 2 +3)*
B. Fall				
4. Workers with OT hours				
4a. Regular hours	2,000	40	$13.75	$13.2 million
4b. OT hours		20	$20.63	$9.9 million
5. Workers with no OT hours	8,000	30	$13.75	$39.6 million
6. All fall workers	*10,000*	*36* (employment-weighted average)	*$14.51* (employment-weighted average)	*$62.7 million (rows 1 + 2 +3)*
C. Winter				
7. Workers with OT hours				
7a. Regular hours	500	40	$13.75	$3.3 million
7b. OT hours		20	$20.63	$2.5 million
8. Workers with no OT hours	4,500	30	$13.75	$22.3 million
9. All winter workers	*5,000*	*33* (employment-weighted average)	*$14.17* (employment-weighted average)	*$28.1 million (rows 1 + 2 +3)*
D. Spring				
10. Workers with OT hours				
10a. Regular hours	*500*	*40*	*$13.75*	*$7.4 million*
10b. OT hours		*20*	*$20.63*	*$5.6 million*
11. Workers with no OT hours	*4,500*	*30*	*$13.75*	*$31.6 million*
12. All spring workers	*7,500*	*35* (employment-weighted average)	*$14.35* (employment-weighted average)	*$44.6 million (rows 1 + 2 +3)*
			ANNUAL WAGE BILL:	$198.0 million

Overall, this rough approximation of the annual wage bill, now incorporating overtime premium pay rates, across all Massachusetts farms and seasons, totals to $198.0 million. This amounts to an increase of $9.3 million, a 4.9 percent increase over the annual wage bill without overtime premium pay rates.[30]

It is important to recall here that the estimate of the overall wage bill without overtime pay rates ($189 million) likely somewhat overestimates the wage bill for 2020. This overestimate of the overall wage bill likewise will cause this analysis to overestimate the *level* of the cost increase due to an expansion of overtime protections. However, the *relative* cost increase—the

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[30] Note that neither the total wage bill figure in Table 4 nor Table 5 accounts for the payroll taxes farm owners are typically responsible for. Adding the payroll tax would increase each figure by about 7.65 percent. As a result, the additional cost of payroll taxes will not change the *relative* increase in their payroll with and without overtime payrates.

size of the cost increase *relative* to the overall wage bill—should be unaffected. As a result, in the remainder of this research brief, I focus on the estimate of the *relative* cost increase of 4.9 percent.

An additional source of labor costs for farms is through labor contractors. Labor contractors are independent contractors that hire and manage their own work crews and provide these work crews to farms. According to the 2017 COA, labor expenditures from labor contractors amounted to $19.0 million (inflated to 2020 dollars). The COA does not provide any details on the number of workers hired on the work crews of labor contractors nor on their work schedules. To approximate the increased labor costs to labor contractors due to expanding overtime protections, I apply the 4.9 percent figure I estimated from the employment characteristics of hired farmworkers. I also assume that the operating expenditures of labor contractors is dominated by their payrolls, and further assume that labor contractors would pass the entirety of their labor cost increase to the farms they contract with.[31]

Overall, based on past patterns of employment and work schedules, extending overtime protections to all farmworkers can be expected to increase the total labor expenditures of farms by 4.9 percent. That is, for the average Massachusetts farm owner, the requirement that farm owners pay farmworkers a premium, time-and-one-half overtime rate for overtime hours (hours in excess of 40 hours weekly) will increase the farm's annual total labor expenditures by approximately five percent.

Next, Table 6, provides the figures on Massachusetts farms' overall operating expenditures and revenue sources to put the potential cost increase due to expanding overtime protections into context. I use these figures to assess how large or small the labor cost increase is relative farm owners' capacity to absorb them.

As Table 6 shows, in 2017, 7,241 farms operated in Massachusetts. As noted earlier, these farms spent $166 million on these hired farmworkers, and spent an additional $19 million on labor contracts. As a result, in total, Massachusetts farm owners spent $185.3 billion on labor. Table 6 also shows, in row 6, that total operating expenses added up to $517.5 million, now including spending on such items as seed, chemicals, rent, fuel and feed. Therefore, of this $517.5 million in total operating expenditures, labor expenditures took up 36 percent of total operating expenditures. Based on these figures, I estimate that the potential cost increase associated with the expansion of overtime protections is equal to about 1.8 percent of total operating expenses (i.e., 36 percent x 5 percent = 1.8 percent).

With regard to overall revenue, Massachusetts farm owners took in a total of $573.4 million in product sales ($504 million), government payments ($4.2 million), and farm-related income ($74.0 million). Therefore, of this $573 million in overall revenue, 32 percent was used to cover

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[31] It is nearly certain that these assumptions produce an overestimate of the actual labor expenditure increase to farms from their labor contractors. This is because labor contractors likely have operating expenditures aside from their payroll (e.g., any overhead expenditures) so that the increase in their overall operating expenditures due to expanding overtime protections to all farmworkers would be smaller than 4.9 percent. Further, the cost increase to farm owners will be smaller than 4.9 percent if labor contractors are not able to fully pass-through the increase in their payroll to their contract fees.

labor expenditures. Based on these figures, I estimate that a 5-percent increase in labor expenses amounts to 1.6 percent of overall revenue (i.e., 32 percent x 5 percent = 1.6 percent).

Table 6. Economic Characteristics of Massachusetts Farms, 2017

|	
1. Number of Farms	7,241 farms
2. Cost increase due to OT as % of labor expenditures	4.9%
Farm Expenditures	
3. Total labor expenditure (hired labor)	$166.4 million
4. Total labor expenditure (contract labor)	$18.9 million
5. Total labor expenditure (hired and contract labor)	$185.3 million
6. Total operating expenditures	$517.7 million
7. Total labor expenditures/total expenditures	35.8% (=row 5/row 6)
8. Cost increase due to OT as % of total expenditures	1.8% (=row 2 x row 7)
Farm Revenue	
9. Total sales	$499.4 million
10. Total government payments	$4.2 million
11. Total farm-related income	$74.0 million
12. Total sales, government payments, and income	$577.6 million
13. Total labor expenditures/total sales, payments, and income	32.3% (=row 6/row 13)
14. Cost increase due to OT as % of as a % of revenue	1.6% (=row 3 x row 14)

Source: 2017 COA.
Note: All dollar figures are in 2020 dollars.

Cost Increases by Farm Size

I next turn to the question of whether the increase in labor costs, due to expanding overtime protections to cover all farmworkers, varies by farm size. An inspection of labor expenditures and revenue, by farm acreage, indicates that the relative burden of this labor cost increase does not vary substantially by farm size. I can see this by looking at two dimensions of farm operations by farm size.

First, larger farms tend to spend more on labor as a share of their operating expenditures. As Figure 1 shows, labor costs as a share of operating expenditures rise with farm acreage. This means, in turn, that expanding the requirement of overtime premium pay rates to all farmworkers can be expected to have a greater impact on the operating expenditures of larger farms relative to smaller farms.

Figure 1. Labor Expenses as a Percent of Total Operating Expenses, By Farm Size
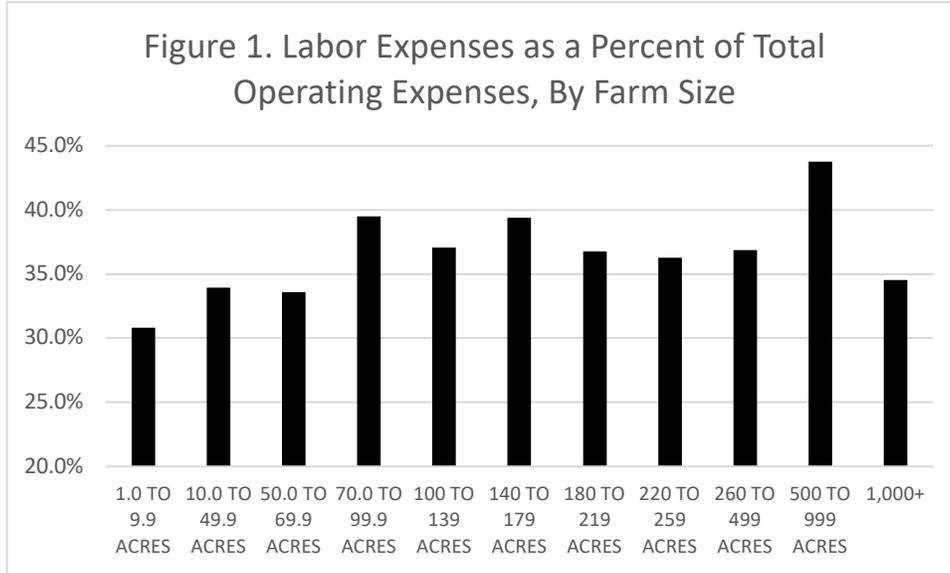
Source: 2017 COA.

Second, large farms also have a greater capacity to absorb these cost increases relative to small farms. This is because large farms tend to bring in greater revenue relative to their labor expenses. I show this pattern in Figure 2. As Figure 2 shows, labor expenses, as a share of overall revenue, falls with farm size. Therefore, even while labor costs as a share of total operating expenditures increases with farm size, the opposite is true with regard to labor costs as a share of total revenue.
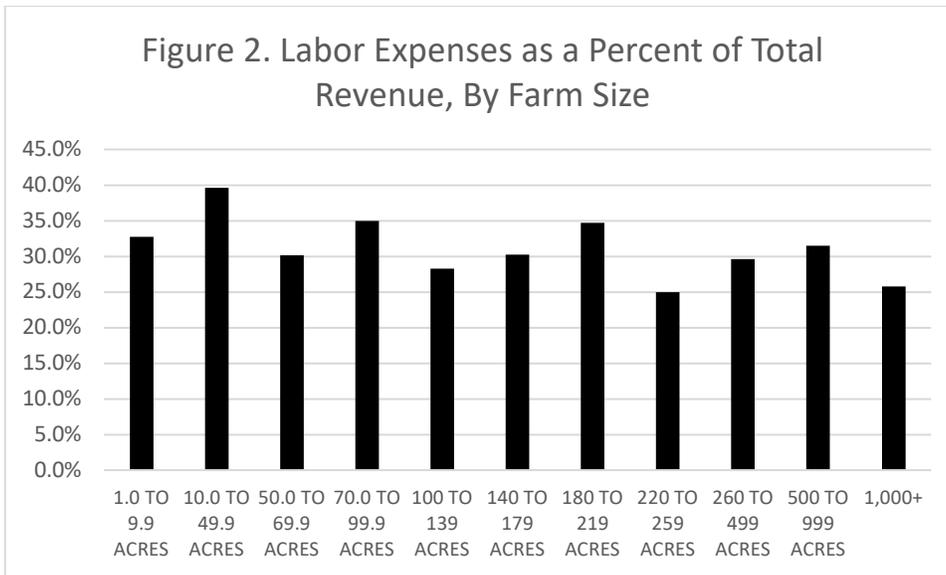
Figure 2. Labor Expenses as a Percent of Total Revenue, By Farm Size
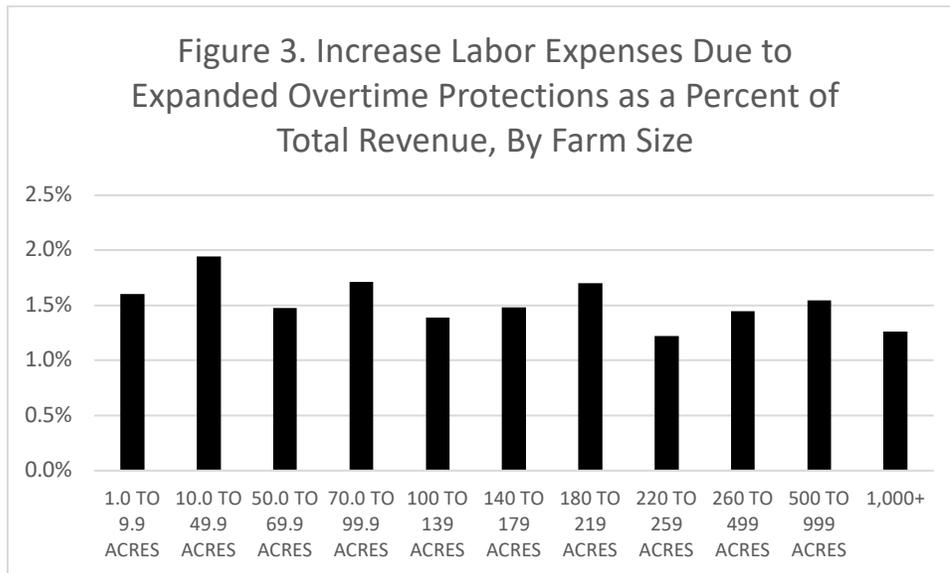
Note: Overall revenue includes total sales, government payments, and farm-related income.
Source: 2017 COA.

The net result of these two patterns is that a five percent increase in labor expenditures—the approximate increase in wages due to expanded overtime protections—as a share of overall

revenue declines modestly with farm size. I show this pattern in Figure 3. For example, the labor cost increase due to expanded overtime protections for the four smallest farm sizes (1 to 9.9 acres, 10 to 49.9 acres, 50 to 69.9 acres, 70 to 99.9 acres) is between 1.5 percent and 2 percent of overall revenue. In comparison, the labor cost increase for the three largest farm sizes (220 to 259 acres, 260 to 499 acres, 500 to 999 acres, and 1,000 or more acres) is between 1 percent and 1.5 percent of overall revenue.

Figure 3. Increase Labor Expenses Due to Expanded Overtime Protections as a Percent of Total Revenue, By Farm Size

Note: Overall revenue includes total sales, government payments, and farm-related income.
Source: 2017 COA.

Overall, regardless of farm size, the labor cost increase due to expanding overtime protections to all farmworkers ranges between one and two percent of total revenue.

In sum, for the average Massachusetts farm owner, the requirement that farm owners pay farmworkers a time-and-one-half rate for hours worked in excess of 40 hours weekly will increase labor costs by about 1.6 percent of the average farm's overall revenue. This cost increase varies only modestly by farm size.

Can Farms Adjust to the Cost Increase Associated with Expanded Overtime Protections?

In this section, I assess whether Massachusetts farm owners can be expected to absorb a labor cost increase in the range of two percent of overall revenue. That is, how likely is it that Massachusetts farm owners could continue to successfully operate their farms while absorbing an increase in their labor expenditures in the range of 2 percent of revenue? To answer this, I consider the potential adjustment channels that farm owners may use.

Possible Channels of Adjustment for Farm Owners

What are the possible adjustment channels that farm owners may use to absorb rising labor costs of this magnitude? To guide this discussion, I draw on the body of research that has

developed around the impact of increasing minimum wage rates. This literature is particularly useful for this discussion because past minimum wage rate increases have similar features to the expansion of overtime protections for farmworkers.

First, both labor standards are features of the Massachusetts Minimum Fair Wage law and impact the overall wage structure in broadly similar ways. Both entail establishing stronger state-level labor standards, as compared to federal labor standards, for some of the lowest paid workers in the state. In the case of the minimum wage rate feature of Massachusetts Minimum Fair Wage law, the labor standard insures that the large majority of the lowest paid workers in the state are paid, at minimum, $12.75 per hour rather than $7.25 federal rate. In the case of the overtime feature of Massachusetts' law, the MSJC ruling establishes that some agricultural laborers are entitled to overtime pay, expanding the overtime protections established by federal law.

Second, each of these labor standards directly affects industries that pay a large share of their workers low wages. In the case of minimum wage rates, a large share of workers in the labor-intensive restaurant industry earn minimum or near-minimum wage rates.[32] Moreover, the restaurant industry is labor intensive. This industry tends to use at least 26 percent or more of sales revenue to cover labor costs.[33, 34] Likewise, as noted above, the Massachusetts farm owners use a relatively large share of overall revenue to cover labor expenditures (32 percent) and pays farmworkers near minimum wage rates, i.e., near the state-wide minimum wage rate of $12.75.

Third, the increase in labor costs for farm owners due to expanding overtime protections to all farmworkers is similar in magnitude to the increase in labor costs that low-wage, labor-intensive employers have experienced from past state and federal minimum wage hikes. Again, take for example, the impact of past minimum wage hikes on the food service industry. Past state and federal minimum wage hikes have increased costs to the fast food and restaurant industry in the range of 1 and 3 percent of revenue.[35] In other words, the experience of how other labor-intensive, low-wage employers have adjusted to past minimum wage hikes should be instructive with regard to how farm owners may adjust to labor cost increases that are in the range of two percent of their total revenue.

I next discuss four main adjustment channels that employers may consider to adjust to a mandated increase in their labor costs: (1) adjustments in employment, (2) cost savings from reduced worker turnover, (3) price increases, and the (4) redistribution of revenue.

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[32] See: https://www.bls.gov/opub/reports/minimum-wage/2019/home.htm.

[33] See, "US Industry (NAICS) Report 72211B: Single Location Full-Service Restaurants in the US," by Thi Le (IBISWorld, April 2020; "US Industry (NAICS) Report 72221A: Fast Food Restaurants in the US," by Rachel Hyland, (IBISWorld, April 2020); and "US Industry (NAICS) Report 72211A: Chain Restaurants in the US," by Jacqueline Hiner (IBISWorld, April 2020). Wages as a share of revenue for these industries are: 37.7 percent, 26.0 percent, and 38.0 percent, respectively. I expect the statewide figures to be in line with these national figures.

[34] See "A $15 U.S. Minimum Wage: How the Fast-Food Industry Could Adjust Without Shedding Jobs," by Robert Pollin and Jeannette Wicks-Lim, *Journal of Economic Issues*, 50:3, 716-744, 2016.

[35] See the discussion on p. 17 of, "Combining Minimum Wage and EITC Policies to Guarantee a Decent Living Standard to All U.S. Workers," by Jeannette Wicks-Lim and Jeffrey Thompson (PERI, October 2010).

Adjustments to Employment. One channel by which farm owners may adjust to an expansion in overtime protections is to alter their workforce levels and work schedules to reduce overtime hours. Based on the work schedules presented above, this would mean, for example, that in the summer and fall seasons that Massachusetts farm owners would need to hire in the range of 10 percent more workers in order to avoid any farmworkers working more than 40 hours weekly.[36]

It is unclear whether farms could actually expand their labor force to this extent. Trends in the use of H-2A workers suggest that such a workforce expansion may be difficult. H-2A workers are temporary, foreign, agricultural workers whose employment is regulated by the U.S. Labor Department's H-2A program. This program requires that in order for farm owners to hire temporary, foreign, agricultural workers, they must demonstrate in a petition that, "..there are not sufficient U.S. workers qualified and available to perform the labor involved in the petition and that the employment of the foreign worker will not have an adverse effect on the wages and working conditions of similarly employed U.S. workers."[37] As a result, the level of certifications of H-2A workers hired by Massachusetts farm owners can serve as an indicator of whether there exists a relative surplus or shortage of farmworkers for hire. In the extreme case, i.e., if Massachusetts farm owners faced a large supply of domestic farmworkers, the number of H-2A certified workers would presumably be zero.

In recent years, from 2017 to 2019, the number of H-2A workers certified for Massachusetts farm owners increased from 443 to 483 workers. Prior to that, from 2012 to 2017, the number of H-2A certified workers hovered around 450.[38] These data suggest that Massachusetts farm owners face a relative *shortage* of available farmworkers, and that this shortage may be rising. This would be consistent with the national trend of increasing farm labor scarcity. According to the U.S. Department of Agriculture:

> One of the clearest indicators of the scarcity of farm labor is the fact that the number of H-2A positions requested and approved has increased fivefold in the past 14 years, from just over 48,000 positions certified in Fiscal [Year] 2005 to nearly 258,000 in Fiscal Year (FY) 2019.[39]

These data indicate that it is unlikely that Massachusetts farm owners could adjust to the expansion of overtime protections to all farmworkers by expanding their workforce.

Reduced Labor Turnover. The large body of research on the economic impact of minimum wage hikes has demonstrated that increases in the pay rates of low-wage workers has the beneficial, cost-saving effect of lowering worker turnover rates. That is, the wage raises

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[36] This ten percent is based on the assumption that the 20 overtime hours, on average, currently covered by each of 2,000 farmworkers in the summer season would need to be covered by newly hired workers. 20 overtime hours for 2,000 workers is a total 40,000 work hours. These work hours could be covered by a minimum of 1,000 workers working 40 hours weekly. I do not assume that the 8,000 workers currently working, on average, 30 hours weekly would absorb any of these 40,000 hours since, presumably, there are other factors that limit their weekly hours to below full-time.

[37] https://www.dol.gov/agencies/whd/fact-sheets/26-H2A.

[38] These data are from the Office of Foreign Labor Certification of the U.S. Labor Department, see: https://foreignlaborcert.doleta.gov/performancedata.cfm.

[39] See: https://www.ers.usda.gov/topics/farm-economy/farm-labor/#h2a.

associated with increases in the minimum wage rate has the effect of reducing the number of workers that employers need to replace due to workers quitting or being fired from their jobs. This is because the higher pay rates cause workers to feel more satisfied with their jobs and/or to value their jobs more. And, as a result, workers remain at their jobs for longer period of time.[40] These lower turnover rates represent cost-savings to employers because they are able to spend less on recruiting and training new workers.

At the same time, the savings employers experience from lower turnover rates tend to only partly offset their increased labor costs. In other words, the pay raises associated with minimum wage hikes do not fully pay for themselves. This helps to explain why employers may not raise their workers' wages in the absence of a minimum wage mandate.

Using this past minimum wage related research as a guide, it is reasonable to assume that about one-fifth of the labor cost increase associated with the expansion of overtime protections could be offset by lower turnover among farmworkers.[41] This would reduce the size of the labor cost increase relative to total revenue from roughly 1.6 percent to 1.3 percent.

Price Increases. A third channel that employers may use to absorb the increase in labor costs due to expanded overtime protections is through raising prices. By raising their prices, farm owners could potentially generate the additional revenue they need to cover their higher labor costs.

Again, past research on minimum wage hikes has documented that price increases have served as an effective adjustment channel for impacted businesses.[42] This is due, in part, because the price hikes necessary to offset the higher labor costs from minimum wage hikes have been relatively modest. As a result, the price hikes do not appear to significantly affect the demand for the products and services of affected businesses. The modest increase in prices therefore has the effect of increasing their overall revenue.

Based on the calculations above, the average Massachusetts farm owner would need to raise their prices by about 1.3 percent to fully pass on the higher labor costs due to paying overtime premium rates—now accounting for the cost-savings the farm owner would experience due to lower labor turnover. A cost increase on the order of 1.3 percent of revenue is arguably a modest increase. With regard to whether a price increase in farm products of this size would have any negative impact on consumer demand, the answer is clearly no. This is because a price increase

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[40] See for example, "A $15 U.S. Minimum Wage: How the Fast-Food Industry Could Adjust Without Shedding Jobs," by Robert Pollin and Jeannette Wicks-Lim, *Journal of Economic Issues*, 50:3, 716-744, 2016; "Minimum Wage Shocks, Employment Flows and Labor Market Frictions," by Arindrajit, T. Dube, William Lester, and Michael Reich, *Journal of Labor Economics*, 34(3):663-704, July 2016; and "Minimum Wage Channels of Adjustment," by Barry T. Hirsch, Bruce E. Kaufman, and Tatyana Zelenska, *Industrial Relations*, 54: 199-239, March 2015.

[41] For a discussion of past research on the cost-savings due to lower turnover that low-wage employers experience from higher minimum wage rates, see Pollin and Wicks-Lim (2016), pp. 729-730.

[42] See for example, "Are Local Minimum Wages Absorbed by Price Increases? Estimates from Internet-Based Restaurant Menus," by Sylvia Allegretto and Michael Reich, *ILR Review*, 71(1), 35–63, 2018; and "The Minimum Wage, Restaurant Prices, and Labor Market Structure," by Daniel Aaronson, Eric French, and James MacDonald, *Journal of Human Resources* 43:3, 688-720, 2008.

by farms on their products of 1.3 percent translates into a nearly imperceptible price increase to the consumer.

To explain why, consider first, that the price received by farms for their agricultural products represents only a share of the final retail price that consumers pay. Take for example, fresh vegetables, one of the top five farm products in Massachusetts, in terms of market value.[43] According to the latest figures available from the United States Department of Agriculture, the value paid to farmers, as a share of the final retail price, for fresh vegetables is 26 percent. This means that if the cost increase that Massachusetts farm owners experience due to the new overtime rule is passed on fully to the consumer, this would result in a retail price increase equal to less than one-half of one percent (26 percent x 1.3 percent=0.3 percent). The corresponding increase in retail prices for dairy products and fresh fruit is between 0.5 percent and 0.7 percent.

To illustrate the magnitude of these price increases more concretely, consider the following examples. If the cost increases for Massachusetts farm owners associated with paying their farmworkers overtime premium rates is passed on fully to the consumer, then:

- The price of an average gallon of milk would increase from $3.50 to $3.52.
- The price of a pound of asparagus would increase from $2.50 to $2.51.
- The price of a pint a blueberries would increase from $3.00 to $3.02.[44]

Determining the extent to which Massachusetts farm owners *could* pass on their cost increases to consumers is beyond the scope of this report. However, I do recognize that Massachusetts farm owners do not primarily sell directly to consumers. What is clear from this analysis, however, is that the size of the price increase necessary to cover farm owners' higher labor costs would be minimal. Massachusetts farm owners may consider whether they could leverage the higher, statewide, agricultural labor standards in Massachusetts to differentiate their agricultural products from agricultural products from other areas with weaker labor standards.

Such product differentiation could be similar to the marketing tool of "fair trade" certifications that has been growing over the past decade. Past studies indicate that consumers are willing to pay more for food products that are identified as providing farmers with stronger labor and environmental standards with better-than-average economic terms. Take for example, a 2015 study by researchers at the Stanford University School of Business. These researchers set up a controlled experiment that compared how consumers' purchasing behavior responded to price increases for the same coffee product with, and without, a fair trade label. These researchers found that raising the price of the fair-trade-labelled coffee by as much as 8 percent had no negative effect on consumer demand. In fact, consumer demand for the product increased slightly. For the coffee without a fair trade label, the same price increase was associated with a decline in consumer demand of about 30 percent.[45]

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[43] See: https://ag.umass.edu/resources/massachusetts-agricultural-data/top-five-types-of-massachusetts-farms.
[44] See: https://www.marketnews.usda.gov/mnp/fv-home;
https://www.ams.usda.gov/sites/default/files/media/RetailMilkPrices2018.pdf
[45] "Consumer Demand for Fair Trade: Evidence from a Multistore Field Experiment," by Jens Hainmueller, Michael J. Hiscox, Sandra Sequeira, *MIT Press Journals*, June 24, 2014. For an overview of this topic, see "The Economics

   Redistribution of Revenue. Finally, a fourth channel of adjustment farm owners could use to adjust to their increased labor costs is to redistribute revenue within their business operations. For example, farm owners could redistribute revenue from their profits toward their wage bill. In 2017, Massachusetts farm owners earned $59.0 million in net income (i.e., total revenue minus total operating costs in 2020 dollars). That is, after these farm owners covered their $517.7 million in operating expenses with $577.6 million in overall revenue (see rows 6 and 12 from Table 6), they retained $59.0 million of their total revenue as profits, or 10.2 percent of total revenue ($59.0 million/$577.6 million). Therefore, farm owners could cover their increase in labor expenses due to an expansion of overtime protections to all farmworkers by reducing the share of total revenue that farm owners keep as net income.

   Such a redistribution in revenue would entail a reduction in net income for farm owners from 10.2 percent of revenue to 8.9 percent of revenue. This is based on the assumption that part of the farm owners' increased labor expense—i.e., 1.6 percent of revenue—would be offset by the savings from lower worker turnover noted above.

   This reduction in the share of revenue that farm owners take in as profit could be made even smaller if revenue within the farm is redistributed in another way: part of the increased costs for overtime pay could be covered by compressing the pay scale at the top—i.e., by reducing the wages of high-wage workers.

Conclusion

   Two major conclusions can be drawn from this analysis about the potential costs and benefits of expanding overtime protections to agricultural workers engaged in the "preparation for market, delivery to storage or to market or to carriers for transportation to market of agricultural, floricultural and horticultural commodities," as well as agricultural workers engaged in "the growing and harvesting of agricultural, floricultural and horticultural commodities."

   First, for the average Massachusetts' farmworker, current pay rates are inadequate to support a decent standard of living. The available data indicate that Massachusetts farmworkers currently have rates of poverty and near-poverty that are more than twice that of the average worker state-wide. Moreover, the average farmworker earning $13.75 per hour and working 33 to 36 weekly hours could not support one adult at a decent living standard even with year-round employment. The part-year employment typical of the average farmworker helps explain these relatively high rates of poverty and near-poverty as compared to the average Massachusetts worker.

   Second, the cost increase to farm owners from the expansion in overtime protections that I consider in this brief is likely to be modest. Correspondingly, the adjustments that farm owners would need to make in response can likewise be expected to be modest. The estimates from this analysis suggest that expanding overtime protections to all farmworkers would entail a cost increase for farm owners in the range of 1-2 percent of overall revenue. A cost increase of this size is in line with what other businesses that employ large numbers of low-wage workers, such

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of Fair Trade," by Raluca E. Dragusanu, Daniele Giovannucci, and Nathan Nunn, *NBER Working Paper 20357*, July 2014 (http://www.nber.org/papers/w20357).

as low-wage, labor-intensive restaurants, have experienced due to increases in state minimum wage rates. These businesses have found measured ways to adjust to their increased costs that have not involved any significant changes to their employment levels.[46] This is an important consideration, as the benefits to farmworkers from an expansion of overtime pay rate eligibility depends, in part, on maintaining their employment opportunities.

Overall, these two findings indicate that entitling overtime pay rates to Massachusetts farmworkers will have the desired public policy consequence of improving the living standards of farmworkers without being overly burdensome to the farm owners who employ these workers. These are encouraging findings, especially in the current context of the COVID-19 pandemic. Farmworkers provide essential work, and their work entails putting their health, the health of their families, and the health of the communities they live in, at risk. At the same time, their current pay rates are inadequate for supporting their families at a decent standard of living. These features of their employment, especially under the current conditions, heighten the need to find ways to improve their working conditions such as by expanding overtime protections. Of course, if Massachusetts adopts such a policy, it will be an important matter of public policy to monitor how Massachusetts farm owners adjust, and to monitor the employment conditions of farmworkers. This type of monitoring activity will help inform policymakers about how to insure that the policy produces its intended positive consequences, and avoids any negative unintended consequences.

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[46] The question of whether minimum wage laws have a negative effect on employment is one of the most contested questions in the labor economics field. However, two systematic meta-analyses of the numerous empirical studies conducted to answer this question have both concluded that minimum wages have basically no effect on employment. See: *What Does the Minimum Wage Do?* by Dale Belman and Paul J. Wolfson (W.E. Upjohn Institute for Employment Research, 2014) and "Publication Selection Bias in Minimum-Wage Research? A Meta-Regression Analysis," by H. Doucouliagos and T.D. Stanley, T.D., *British Journal of Industrial Relations,* 47(2), 406-428, 2009.