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From: Professor Michael Reich, Chair, Center on Wage and Employment Dynamics  
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To: Governor Phil Murphy, Senate President Stephen Sweeney, Assembly Speaker Craig  
Coughlin, Assembly Member John McKeon and Members of the New Jersey Legislature

Re: Advice Letter on the Effects of a \$15 Minimum Wage on New Jersey Agriculture

Date: February 6, 2018

I write here in response to a request from Assembly Member McKeon for expert advice on how New Jersey farmers and farm workers would be affected if the state's minimum wage was increased gradually from its current level of \$8.60 to \$15.10 by January 1, 2023. More specifically, my comments address the desirability of exempting farm workers who are now covered by New Jersey law, but who are exempt from the federal Fair Labor Standards Act of 1938, as amended in 1978 to include protections for farmworkers.

New Jersey currently offers the same protections to farm workers as to other New Jersey workers. New York and California, the two states that have already adopted a \$15 minimum wage law, do the same. I will address the revocation of these protections by comparing current policy to an alternative policy that would increase these farmworkers' minimum wage to \$10.10 by 2023.

I discuss in turn below the affected sectors of New Jersey agriculture, how the policy would affect the pay of New Jersey's agricultural workers, the payroll costs of New Jersey growers and the effects on prices and sales of agricultural products and profits of agricultural producers. I then compare the benefits to the workers to the costs for the growers.

***I find that much of the costs of the agricultural minimum wage will be absorbed by consumers, that the effect on growers will be negative but vanishingly small, and that the effect on farm workers will be positive and large.***

***My background and expertise on minimum wages*** I received a Ph.D. in Economics from Harvard University in 1974 and I have been a Professor of Economics at the University of California, Berkeley ever since. From 2004-15 I was the Director of the Institute for Research on Labor and Employment at UC Berkeley and I currently serve as the Chair of its Center on Wage

and Employment Dynamics. I have published 17 books and well over 100 articles, mainly on labor economics topics.

My recent and current research focuses on minimum wage policies. I have conducted prospective studies of minimum wage effects up to \$15 for numerous California cities, for the agricultural county of Fresno, California and as well for the State of California and New York State. My studies monitoring the actual causal effects of minimum wages have been published in top economics journals and have been influential in changing the view of the economics profession.

I have also testified in numerous local, state and federal hearings, including in California, New York, Massachusetts and in the U.S. House of Representatives and the U.S. Senate. My work was cited by President Obama and Vice President Biden as well as by the President's Council of Economic Advisors.

My remarks here draw upon this expertise, especially on my prospective analysis of the effects of a \$15 minimum wage on agriculture in Fresno County, California. I draw my data from official government statistics and reports. I have benefited from the helpful suggestions of Professor Philip Martin, an expert on farm labor at the University of California, Davis.

***The affected sectors in New Jersey agriculture*** New Jersey's agricultural production is dominated by fresh berries, vegetables (especially fresh tomatoes), and nurseries and horticultural products. In 2016 the U.S. Bureau of Labor Statistics' Quarterly Census of Employment and Wages (QCEW) counted an annual average of 7,681 employees working in New Jersey's crops, nurseries and greenhouses. These workers constituted 70 percent of all agricultural employment in the state and 0.1 percent of all of New Jersey's employment. This pattern is not surprising as U.S. consumption of fresh berries per person has been increasing rapidly in the past fifteen years, doubling for strawberries and quadrupling for blueberries.

These crops are generally highly labor-intensive, as much of the work must be done by hand. As a result, worker pay in this sector tends to be lower than in other sectors of the New Jersey economy. Other agricultural sectors, such as field crops (wheat, corn) or livestock and dairy are highly mechanized and are affected much less by minimum wage increases. In what follows I will focus mainly upon this segment of the industry.

Since many crops are seasonal, agricultural employment numbers vary considerably over a year. For example the blueberry harvesting season in New Jersey is limited to June and July, and temporary harvest workers swell the employment estimates. In 2016 the QCEW employment numbers in crops ranged from about 4,000 workers in winter months to 14,000 during the summer harvest season. The lower figure has a higher percentage of workers in higher-paid occupations. Clearly, many temporary workers are recruited during the summer months, implying that they need to find housing during the harvest season. However, the estimates I generate in this memo are not affected by employment

seasonality or by the exact size of the industry. On the other hand, competition with neighboring states that pay more for temporary workers is a recruitment issue.

***How economies adjust to minimum wage increases*** The minimum wage research literature has found that economies absorb higher minimum wages through a variety of mechanisms, especially through more mechanization and higher prices in the most-affected sectors, and through increased consumer demand from workers with increased purchasing power. Indeed, credibly-designed studies find little or no adverse effects upon employment, even at minimum wages up to \$13 (Allegretto et al. forthcoming). In the case of agriculture, large-scale increases in mechanization would have to draw upon available or new technologies. Indications from California agriculture, where the minimum wage is \$11 and on a path to \$15, suggest that such technologies currently are not available or not likely to become available soon, at least for the harvesting of more fragile crops (Goodhue and Martin forthcoming).

***Wages in New Jersey crop production relative to the minimum wage*** Wage rates for berries, tomato crops and nursery and horticultural workers are low relative to other industries. Moreover, according to QCEW data, over the past decade they have increased at about 2 percent per year, the same rate as inflation.

We expect that these workers' wages will vary across states with different minimum wage standards. These differences are indeed apparent when I compare New Jersey wages in these occupations to those in its neighboring states, Pennsylvania and New York. According to data from the U.S. Bureau of Labor Statistics' Occupational Employment Survey (OES), the *median* hourly wage in 2016 among New Jersey's crop, nursery and greenhouse farm workers and laborers was \$11.54, while the state's minimum wage was \$8.38. The comparable figure for Pennsylvania, where the minimum wage was \$7.25, was somewhat lower: \$10.92, while the comparable figure in New York State, where the minimum wage was \$9.75, was somewhat higher: \$11.86. These comparisons indicate that many of the lowest-paid agricultural workers are already paid well above the current minimum wage in each state.

***How actual wages adjust to higher minimum wage standards*** The above patterns suggest that minimum wage policies affect wages of crop workers, but by far less than the statutory differences. For example, the difference between the New York and New Jersey minimum wages was \$1.37, yet the actual median wage differential was only thirty cents. In other words, the actual median wage difference between these two states amounted to about 23 percent of the statutory minimum wage difference. And while the difference between the New Jersey and Pennsylvania minimum wages was \$1.13, the actual median wage differential was sixty cents, or a bit less than half of the statutory difference.

These patterns make sense because only a small proportion of workers are paid exactly the old minimum wage and because a substantial portion is already paid above the new minimum wage. Indeed, numerous credible minimum wage studies find that a \$1 increase in the statutory minimum wage increases average wages in low-wage sectors-- such as

food services-- by about 20 cents. In my calculations below, and to be conservative, I will adopt a higher ratio-- that a minimum wage increase of \$1 in New Jersey agriculture will increase actual median wages by *25 percent*.

***Labor share of operating costs in New Jersey's leading agricultural products*** Based on detailed studies of fresh berries and fresh tomato production conducted in California, labor costs account for about *30 percent* of operating costs in this sector, slightly lower in tomatoes and slightly higher in berries (Goodhue and Martin forthcoming). To provide some perspective, the labor share of operating costs in restaurants is also about 30 percent) The largest berry producers, such as Driscoll's, operate in both New Jersey and California and use similar farming methods in both states.

There are no studies of the labor share in operating costs for nursery and horticultural products; however it seems safe to assume that they are not higher than the share in berry production.

**The policy increase under alternative baselines** Current law will increase today's \$8.60 minimum wage annually with increases in the consumer price index. Using the Congressional Budget Office's forecast of 2.2 percent annual price increases until 2013, the \$8.60 minimum wage would increase to about \$9.60 by 2023. If the baseline for comparison increases the agricultural minimum wage to \$10.10 by 2023, then \$15.10 represents a *50 percent* statutory increase.

***Effects on payroll costs and operating expenses*** If, as estimated above, the actual wage increase in New Jersey crops will equal 25 percent of the fifty percent statutory increase, minimum wage-generated increases in payroll costs in 2023 would be:  $.25 \times .50 = 12.5$  percent.

Using 30 percent as the average labor share of operating costs in the leading crops (blueberries, cranberries, tomatoes, etc.) and assuming conservatively the same ratio applies in nursery and greenhouse products, the increase in operating costs in 2023 would  $.3 \times 12.5 = 3.8$  percent.

***Effects on prices*** The minimum wage research literature finds that operating costs increases in restaurants are fully passed forward to consumer as higher prices. This finding suggests that minimum wage increases by 2023 would increase the price of, say a package of blueberries, by 3.8 percent. However, in contrast to restaurants, farmers do not receive the full retail price. They receive about 35 percent of the retail price of berries and vegetables (Goodhue and Martin forthcoming). Other costs include haulage, marketing and profits of wholesalers and retailers. The retail price increase would be smaller insofar as downstream labor expenses, such as for truck transport drivers, would not increase. A conservative estimate suggests that retail prices would increase by 3 percent or 0.75 percent over the four years to 2023.

A 6 ounce package of fresh blueberries in New Jersey retails today for about \$3. As a result of the four-year minimum wage phase-in, the price of the same package would increase by 3 percent, or an additional *nine cents over four years*. By comparison, food prices in the past decade have increased on average about 2 percent a year, although the increases are volatile from one year to the next. In the case of fresh berries, the seasonal variation in their availability also induces price swings of 100 percent within a given year.

***Effects on agricultural sales*** How much would such a price increase affect sales of New Jersey's leading agricultural products? According to a University of Arkansas study that drew on data for numerous markets across the U.S., each one percent increase in fresh berry prices would reduce consumer sales by *0.7 percent* (Sobevka et al. 2013).

To ascertain the net effect of the policy on sales, we also need to consider how a higher minimum wage would increase consumer demand. Consumer demand is likely to increase because low-wage workers spend a higher share of their income than do more affluent workers. A recent paper (Cooper, Luengo-Prado and Parker 2017) has demonstrated this increased spending and found that much of it is focused on food items.

According to a careful study, raising the minimum wage to \$15 by 2023 would generate \$4 billion in increased pay among low-wage New Jerseyans (McKoy and Cooper 2017). Without the minimum wage increase, total wages and salaries among private sector New Jersey workers are likely to reach \$220 billion (calculated using the U.S. Bureau of Economic Analysis Regional Accounts). In other words, the minimum wage increase would add  $4/220$  or about *2 percent* to New Jerseyans' spendable incomes. Assuming that spending allocations by item remain roughly the same, the increased purchasing power because of the higher minimum wage would have a positive 2 percent effect on sales of the state's agricultural products.

Adding together the positive effect from the projected income increases and the negative effect from the projected price increase yields a net effect of  $2.0 - 3 \times 0.7 = 0.1$  percent on incomes of New Jersey growers and employment of New Jersey's agricultural workers by 2023.

This result, like all forecasts is subject both to measurement error inherent in the underlying data and to future uncertainties that cannot be predicted. The magnitude of these measurement errors and forecasting uncertainties are likely to be larger than the forecast itself. In particular, we cannot be confident that the estimate differs from zero.

***Effects on low-wage agricultural workers*** According to McKoy and Cooper (2017), the pay increase among New Jersey workers who receive an increase would average about \$4,000 per year, which translates into an increase of approximately 20 percent annually.

***Conclusion: The above analysis suggests that the benefits to New Jersey's agricultural workers will be substantial—on the order of a 20 percent increase in annual income, while the effects on agricultural employers will be extremely small. New Jersey***

*consumers in the aggregate, and especially more affluent consumers, will pay for almost all of the costs of continuing to include agricultural workers in New Jersey's minimum wage policy. The average individual consumer would experience price increases of less than three cents a year, for a \$3 package of blueberries by 2023.*

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