

# The Pitfalls and Flaws in “Impacts of Increasing Colorado’s Minimum Wage”

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This brief critiques a study produced by Eric Fruits, an economist hired by the Common Sense Policy Roundtable, a conservative and business-aligned organization in Colorado. Fruits’ study, “Impacts of Increasing Colorado’s Minimum Wage,” makes a variety of claims about the effects of increasing the minimum wage in Colorado to \$12 by 2020, including the assertion that it will result in 90,000 lost jobs.

Fruits’ claims have already been featured in news articles, though there has been no real analysis of the suppositions and assumptions in his study to counterbalance his larger argument against increasing the minimum wage.

In this brief, we carefully scrutinize these claims and show why they are dubious if not outright misleading.

## Introduction

The chief focus in minimum wage research literature is answering the question, “What impact do minimum wage increases have on the number of jobs?”<sup>1</sup> Economists answer that question by relying on metrics called *elasticities*. These elasticities show the relationship between an increase in the minimum wage and the corresponding change in the number of jobs.

For example, a minimum-wage employment elasticity of -0.1 means that a 10 percent increase in the minimum wage corresponds with a 1 percent decrease in jobs. Much of the research on the minimum wage tries to calculate this elasticity using instances when the minimum wage was increased in the past. This isn’t easy, however, because you must control for factors other than the minimum wage that could influence jobs, such as weather and global competition, among many others. Much of the dispute over the minimum wage’s impact on jobs comes from the statistical methods that are used to control for those other factors.<sup>2</sup> Some research reports moderate job losses associated with minimum wage increases, some say there are no job losses, and some research even indicates there are increases in jobs associated with minimum wage hikes.

The lack of complete consensus on the impact of minimum-wage increases on employment creates a ripe environment for minimum wage opponents to carefully select the research that shows the largest negative effect on jobs. Because of this, it is necessary to evaluate any research that makes assertions about the effect on jobs of Colorado’s proposal to raise the minimum wage to \$12 by 2020.

What follows is a summary of the serious deficiencies in the Fruits report.

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<sup>1</sup> Lately there has been an expansion in minimum wage research answering questions about hours worked, labor force participation, prices, profitability, school enrollment, to name a few factors.

<sup>2</sup> There is also debate about timing, i.e., how many years after a minimum wage increase will you see the employment affected?

**1. The report cites and uses for its calculations a large, negative employment elasticity which comes from the most notoriously negative studies of the minimum wage. These are not representative of the larger conclusions drawn from the minimum wage literature.**

In a 2014 qualitative review of minimum-wage research since 2000, researchers found that of the 40 U.S. data-based studies, 14 showed negative employment effects, 13 indicated there were no effects, one found positive effects and 12 had a mixture of both negative, positive and no effects.<sup>3</sup> A 2009 meta-analysis of the literature had a similar conclusion — that when you look at the employment effect from across the literature, the most precise research indicates at or near zero employment effects.<sup>4</sup> The report mischaracterizes this research by claiming there is a consensus that minimum wage increases have a negative effect on employment and does not point out the extent there are opposite views. It also does little to emphasize the recent advancements in minimum wage research and instead relies on an outdated approach that concludes large employment losses.

**2. The report fails to report the margins of error or statistical significance.**

The report provided no data to show whether the findings are statistically significant. In credible research, standard errors (along with R-values and confidence intervals and other Greek letters that make non-statisticians' eyes glaze over) are reported to show whether the calculations have any meaning. This is often where you hear researchers use the term *statistically significant or not*.

Fruits reports an elasticity of -0.03, but because the standard error is not reported we can't know if -0.03 is statistically different from zero. If the standard error were 0.04, that would mean the actual elasticity could fall somewhere between -0.07 and 0.1.

This is similar to public opinion polls where a candidate with a 2 percent lead in a poll with a 4 percent margin of error could be leading by 6 percent, behind by 2 percent or be somewhere in between. The margins of error could be so wide that Fruits' elasticities could actually be positive, which would mean an increase in the minimum wage would boost jobs. In fact, that's what some minimum wage studies show — that increasing the minimum wage actually boosts total employment because the extra spending by those workers who see a wage hike generates additional jobs. In addition, the data is not provided to allow others to replicate the analysis.

**3. The report makes assertions about Colorado's minimum wage proposal in order to amplify a large job loss figure.**

The report uses an employment elasticity figure from the CBO study<sup>5</sup> that investigates the minimum wage increase at the federal level then amplifies the size of the impact when applying it to Colorado, arguing that state-level job losses would be greater since jobs would move to other neighboring states. When you look at the jobs that would be influenced by Colorado's minimum wage, many of those jobs are not exportable — such as fast food workers, home healthcare workers and child care workers. How would a worker in Kansas replace a home healthcare nurse in Denver? The report also claims that the effects of the minimum wage increase compound over time without citing research or any other evidence to support that claim.

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<sup>3</sup> Belman and Wolfson (2014) What Does the Minimum Wage Do?

<sup>4</sup> See Hristos Doucouliagos and T. D. Stanley (2009) in which the authors conducted a meta-study of 64 minimum-wage studies published between 1972 and 2007 measuring the impact of minimum wages on teenage employment in the United States.

<sup>5</sup> Congressional Budget Office (2014) "The Effects of a Minimum-Wage Increase on Employment and Family Income"

**4. The estimates of job loss are far in excess of those made by others that claim there are job losses associated with minimum wage increases.**

The CBO study that Fruits cites determined that increasing the federal minimum wage to \$10.10 over three years would have resulted in the loss of 500,000 jobs nationwide. That would amount to about 0.3 of a percent of the overall 145 million nonfarm employees in the U.S. By contrast, Fruits argues that the proposed increase will result in a loss of 90,000 jobs in Colorado alone over the next five years. This is almost 20 percent of CBO's estimates for the entire nation.

**5. The report conflates reduction in hours with job losses.**

A 10 percent increase in the minimum wage that is associated with a 0.2 percent decrease in *hours worked* is different than a 0.2 percent decrease in the *number of jobs*. Common sense would tell you that a minimum wage worker might see their hours trimmed a bit, but the net benefit of an extra dollar or two an hour will outweigh the potential loss of an hour or two of work per week. The report applies those elasticities entirely to jobs and tries to play up the destruction of job loss.

**6. The Fruits report selectively picks comments and ideas from other cited studies while the same sources contradict other conclusions that the report reaches.**

The report cherry picks data from other sources while ignoring the fact that the same source reached an entirely opposite conclusion. For example, the Fruits paper grabs the median elasticity of -0.05 from a book that looked at 400 employment studies. That same source ultimately concludes that there were no statistically and economically meaningful employment losses associated with the minimum wage. The same source also concludes that “modest minimum wage increases raise wages for the working poor without substantially affecting employment or work hours, providing solid benefits with small costs.” (Belman and Wolfson, 2014). As another example, the Fruits paper cites the CBO study elasticities while ignoring other parts of the paper that conclude raising the minimum wage would increase demand for goods and services because it shifts money from business owners and other consumers to low-wage workers who generally spend a larger share of each dollar they earn in the local economy.

**7. The finding that workers would actually lose income is completely inconsistent with other research in this area.**

All the past research on the minimum wage, even the studies that paint a more negative view of the effects on employment, concluded that total wages and salary income increases as a result of the minimum wage. The CBO study, which analyzed the increase in the federal minimum wage to \$10.10 over three years, would have increased net income of all families by \$2 billion and net income of low- and middle-income families by \$19 billion. Fruits' own math doesn't even support this claim. The report claims that employment will be 19,000 lower in 2018. If you tally up the income lost from losing 19,000 jobs, it still doesn't overpower the benefit of the other 350,000 workers in low-wage jobs making an extra dollar or so an hour.

### **Fruits' Projections Are Opposite of What Happened in Colorado in 2007**

To determine how accurate Fruits' model might be in projecting the effects of future increases, we analyzed how well it would have predicted what happened in Colorado as a result of the 2006 increase when Colorado's minimum wage was increased by 33 percent from \$5.15 to \$6.85 effective Jan. 1, 2007. The lack of data provided in the Fruits study showing how the author calculated the employment effects makes this a bit challenging. Fruits estimates that there is a wage employment elasticity of -0.03 — meaning that for every 10 percent increase in the minimum wage employment would decline by three-tenths of 1 percent (-0.3 percent)

over the short run. He argues that the effects compound over time and that the longer term elasticity is -0.067, although we are not sure exactly how he calculated this estimate.<sup>6</sup>

To replicate Fruits' analysis, we assumed a first year elasticity of -0.03 and a second year elasticity of -0.067. Based on a 33 percent increase in the minimum wage (as Colorado jumped from \$5.15 to \$6.85), the first year loss of jobs would equal -.99 (-0.03 times .33) and the second year loss of jobs would equal -2.21 percent (-0.067 times .33). This means that Fruits' model predicts that Colorado would have lost .99 percent of the jobs from the baseline in 2007 and a 2.21 percent loss compared to the baseline in 2008.<sup>7</sup>

We applied these elasticities to the employment estimates for 2007 and 2008 from the Legislative Council Staff's 2006 Economic and Revenue Forecast. We use the estimates because we want to know how the number of jobs actually created compares to the number expected. We then compared Fruits' estimates with the actual number of jobs in Colorado in 2007 and 2008.<sup>8</sup>

As figure 1 shows, Fruits' model projects that Colorado would have lost 23,000 jobs in 2007 and 52,000 jobs in 2008 compared to the estimate. Did Colorado see 23,000 jobs lost in 2007? No; actual employment in 2007 came in 7,000 more than projected. Did we see 52,000 fewer jobs in 2008 as Fruits model predicts? No; the actual employment was only 6,600 jobs below projections.

The bottom line is Fruits' model predicted much higher job losses compared to the projections than actually occurred. In fact, the Colorado economy added 71,200 jobs in the two years following a 33 percent increase in the minimum wage.

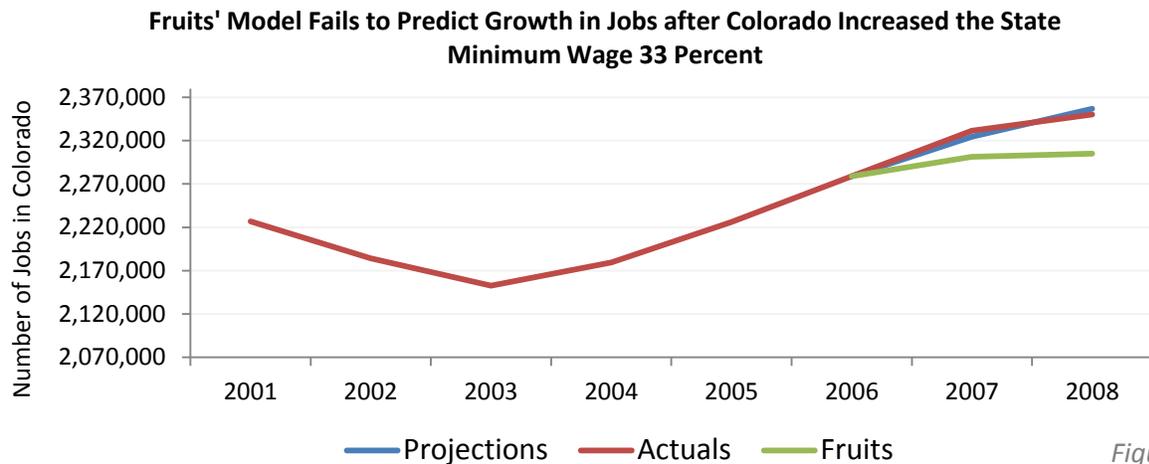


Figure 1

<sup>6</sup> See page 12 of Fruits (2016) "Impacts of Increasing Colorado's Minimum Wage." Our calculations are most likely conservative compared to Fruits' "compounding effects."

<sup>7</sup> Special thanks to Rich Jones at the Bell Policy Center for helping gather data and calculate this number according to Fruits' own math.

<sup>8</sup> It's hard to draw definitive proof from one "natural experiment;" particularly since the timing of Colorado's minimum wage increase came just before the Great Recession. Nevertheless, it is instructive to see just how off Fruits' predictions were.

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