

## The Effects of Minimum Wages on Employment

BY DAVID NEUMARK

The minimum wage has gained momentum among policymakers as a way to alleviate rising wage and income inequality. Much of the debate over this policy centers on whether raising the minimum wage causes job loss, as well as the potential magnitude of those losses. Recent research shows conflicting evidence on both sides of the issue. In general, the evidence suggests that it is appropriate to weigh the cost of potential job losses from a higher minimum wage against the benefits of wage increases for other workers.

It is easy to be confused about what effects minimum wages have on jobs for low-skilled workers. Researchers offer conflicting evidence on whether or not raising the minimum wage means fewer jobs for these workers. Some recent studies even suggest *overall* employment could be harmed. This *Letter* sheds light on the range of estimates and the different approaches in the research that might explain some of the conflicting results. It also presents some midrange estimates of the aggregate employment effects from recent minimum wage increases based on the research literature.

### The controversy begins with the theory

The standard model of competitive labor markets predicts that a higher minimum wage will lead to job loss among low-skilled workers. The simplest scenario considers a competitive labor market for a single type of labor. A “binding” minimum wage that is set higher than the competitive equilibrium wage reduces employment for two reasons. First, employers will substitute away from the low-skilled labor that is now more expensive towards other inputs, such as equipment or other capital. Second, the higher wage and new input mix implies higher prices, in turn reducing product and labor demand.

Of course, the labor market is more complicated. Most important, workers have varying skill levels, and a higher minimum wage will lead employers to hire fewer low-skilled workers and more high-skilled workers. This “labor-labor” substitution may not show up as job losses unless researchers focus on the least-skilled workers whose wages are directly pushed up by the minimum wage. Moreover, fewer jobs for the least-skilled are most important from a policy perspective, since they are the ones the minimum wage is intended to help.

In some alternative labor market models, worker mobility is limited and individual employers therefore have some discretion in setting wages. In such “monopsony” models, the effect of increasing the minimum wage becomes ambiguous. However, such models may be less applicable to labor markets for unskilled workers most affected by the minimum wage; these markets typically have many similar employers in close proximity to each other (think of a shopping mall) and high worker turnover. Nonetheless, the ultimate test is not theoretical conjecture, but evidence.

## Recent research on employment effects of minimum wages

The earliest studies of the employment effects of minimum wages used only national variation in the U.S. minimum wage. They found elasticities between  $-0.1$  and  $-0.3$  for teens ages 16–19, and between  $-0.1$  and  $-0.2$  for young adults ages 16–24. An elasticity of  $-0.1$  for teens, for example, means that a 10% increase in the wage floor reduces teen employment by 1%. Newer research used data from an increasing number of states raising their minimum wages above the federal minimum. The across-state variation allowed comparisons of changes in youth employment between states that did and did not raise their minimum wage. This made it easier to distinguish the effects of minimum wages from those of business cycle and other influences on aggregate low-skill employment. An extensive survey by Neumark and Wascher (2007) concluded that nearly two-thirds of the more than 100 newer minimum wage studies, and 85% of the most convincing ones, found consistent evidence of job loss effects on low-skilled workers.

Research since 2007, however, has reported conflicting findings. Some studies use “meta-analysis,” averaging across a set of studies to draw conclusions. For example, Doucouliagos and Stanley (2009) report an average elasticity across studies of  $-0.19$ , consistent with earlier conclusions, but argue that the true effect is closer to zero; they suggest that the biases of authors and journal editors make it more likely that studies with negative estimates will be published. However, without strong assumptions it is impossible to rule out an alternative interpretation—that peer review and publication lead to more evidence of negative estimates because the true effect is negative. In addition, meta-analyses do not assign more weight to the most compelling evidence. Indeed, they often downweight less precise estimates, even though the lower precision may be attributable to more compelling research strategies that ask more of the data. In short, meta-analysis is no substitute for critical evaluation of alternative studies.

A second strand of recent research that conflicts with earlier conclusions argues that geography matters. In other words, the only valid conclusions come from studies that compare changes among close or contiguous states or subareas of states (for example, Dube, Lester, and Reich 2010). A number of studies using narrow geographic comparisons find employment effects that are closer to zero and not statistically significant for both teenagers and restaurant workers. The studies argue that their results differ because comparisons between distant states confound actual minimum wage effects with other associated negative shocks to low-skill labor markets.

Some follow-up studies, however, suggest that limiting comparisons to geographically proximate areas generates misleading evidence of no job loss effects from minimum wages. Pointing to evidence that minimum wages tend to be raised when labor markets are tight, this research suggests that, among nearby states that are similar in other respects, minimum wage increases are more likely to be associated with positive shocks, obscuring the actual negative effects of minimum wages. Using better methods to pick appropriate comparison states, this research finds negative elasticities in the range of  $-0.1$  to  $-0.2$  for teenagers, and smaller elasticities for restaurant workers (see Neumark, Salas, and Wascher 2014a,b, and Allegretto et al. 2015 for a rebuttal). Other analyses that try to choose valid geographic comparisons estimate employment responses from as low as zero to as high as  $-0.50$  (Baskaya and Rubinstein 2012; Liu, Hyclak, and Regmi 2015; Powell 2015; Totty 2015).

Some new strategies in recent studies have also found generally stronger evidence of job loss for low-skilled workers. For example, Clemens and Wither (2014) compare job changes within states between workers who received federal minimum wage increases because of lower state minimums and others whose wages were low but not low enough to be directly affected. Meer and West (2015) found longer-term

dynamic effects of minimum wages on job growth; they suggest these longer-term effects arise because new firms are more able to choose labor-saving technology after a minimum wage increase than existing firms whose capital was “baked in.”

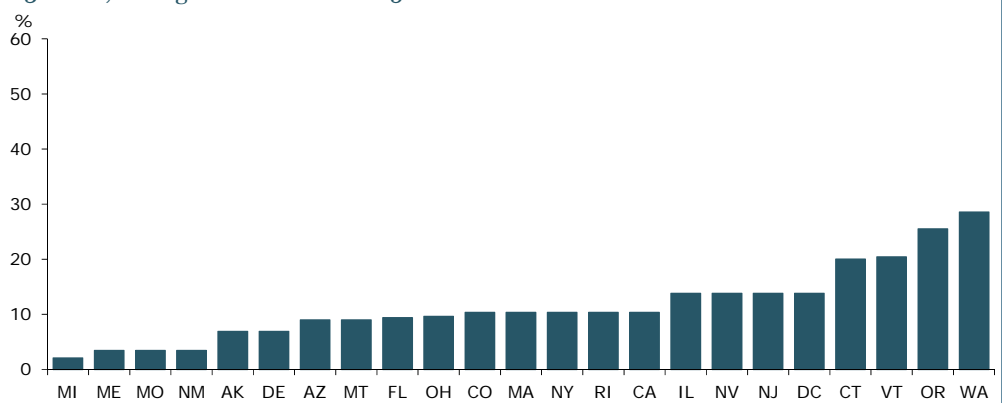
How do we summarize this evidence? Many studies over the years find that higher minimum wages reduce employment of teens and low-skilled workers more generally. Recent exceptions that find no employment effects typically use a particular version of estimation methods with close geographic controls that may obscure job losses. Recent research using a wider variety of methods to address the problem of comparison states tends to confirm earlier findings of job loss. Coupled with critiques of the methods that generate little evidence of job loss, the overall body of recent evidence suggests that the most credible conclusion is a higher minimum wage results in some job loss for the least-skilled workers—with possibly larger adverse effects than earlier research suggested.

### Recent minimum wage increases and implications

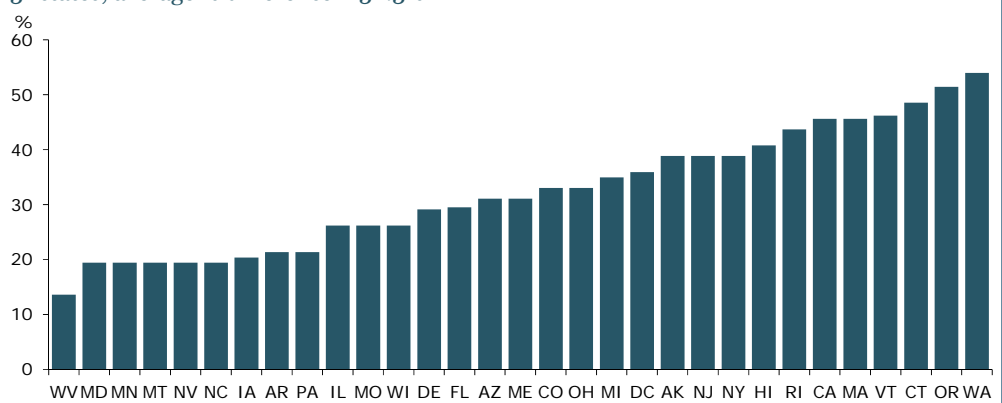
Despite the evidence of job loss, policymakers and the voting public have raised minimum wages frequently and sometimes substantially in recent years. Since the last federal increase in 2009, 23 states have raised their minimum wage. In these states, minimum wages in 2014 averaged 11.5% higher than the federal minimum (Figure 1). If these higher minimum wages have in fact lowered employment opportunities, this could have implications for changes in aggregate employment over this period.

Note that more states (31) had minimums above the federal level just before the Great Recession than do now (Figure 2). The average relative to the federal minimum was nearly three times as high at 32.3%. However, this is in part because the federal minimum wage has increased 41% since the beginning of 2007. To compare the average change across states between 2007 and 2014, I account for the smaller number of states with higher minimums in 2014 and their lower levels, and weight the states by their working-age population. I find that minimum wages were

**Figure 1**  
Percent difference between state and federal minimum wages, June 2014  
23 states; average % difference = 11.5%



**Figure 2**  
Percent difference between state and federal minimum wages, June 2007  
31 states; average % difference = 32.3%



roughly 20.6% higher in 2014 than in 2007, compared with a 16.5% increase in average hourly earnings over the same period. Thus, between the federal increases in 2007–09 and recent state increases, the minimum wage has grown only slightly faster than average wages in the economy—around 4.1% over the entire seven-year period.

From the research findings cited earlier, one can roughly translate these minimum wage increases into the overall job count. Among the studies that find job loss effects, estimated employment elasticities of  $-0.1$  to  $-0.2$  are at the lower range but are more defensible than the estimates of no employment effects. Some of the larger estimates are from studies that are likely to receive more scrutiny in the future.

Using a  $-0.1$  elasticity and applying it only to teenagers implies that higher minimum wages have reduced employment opportunities by about 18,600 jobs. An elasticity of  $-0.2$  doubles this number to around 37,300. If we instead use the larger 16–24 age group and apply the smaller elasticity to reflect that a smaller share of this group is affected, the crude estimate of missing jobs rises to about 75,600. Moreover, if some very low-skilled older adults also are affected (as suggested by Clemens and Wither 2014), the number could easily be twice as high, although there is much less evidence on older workers.

Thus, allowing for the possibility of larger job loss effects, based on other studies, and possible job losses among older low-skilled adults, a reasonable estimate based on the evidence is that current minimum wages have directly reduced the number of jobs nationally by about 100,000 to 200,000, relative to the period just before the Great Recession. This is a small drop in aggregate employment that should be weighed against increased earnings for still-employed workers because of higher minimum wages. Moreover, weighing employment losses against wage gains raises the broader question of how the minimum wage affects income inequality and poverty. This issue will be addressed in the next *Economic Letter*.

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