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REPORT



REFORMING THE U.S. YOUTH MINIMUM WAGE

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Executive Summary

Unemployment among U.S. teenagers now stands at 16 percent. Raising the minimum wage, as many are advocating, will only make the situation worse. This report argues instead that a lower, “youth minimum wage,” or YMW, would result in a substantial number of new jobs for young workers.

While some economists have disputed the effect on overall employment of small minimum-wage increases, most of the existing empirical evidence shows that higher minimum wages disproportionately hurt employment opportunities for young workers (the effect on older workers is smaller and more ambiguous). Similarly, evidence from other countries that have lowered the minimum wage for young people has shown that doing so increases the number of jobs that they are offered.

The federal minimum wage is \$7.25. There is a federal YMW under which workers under age 20 may earn a wage of \$4.25 per hour, but only for the first 90 days on the job. However, not all states include similar provisions in their own labor codes; and when federal and state minimum-wage laws conflict, the more restrictive rule always applies. As a result, the federal YMW is not applicable in most states.

More specifically: 15 states have adopted the federal YMW, while 17 other states and the District of Columbia have some sort of youth exemption with additional restrictions on top of the federal ones. These restrictions may include such provisions as a lower eligibility age (18 or 19), a higher YMW than \$4.25, or a shorter time limit. The remaining 18 states have no YMW in their labor codes, which means that the minimum wage in the state applies across the board.¹

This report uses the results of a number of studies of the effects of minimum-wage changes on various age groups to estimate the number of jobs that would be offered to young people by moving to a uniform, national youth minimum wage.

The principal finding: if all states and the federal government adopted a youth minimum wage of \$4.25 for whom anyone aged 16–19 would be eligible, with no 90-day limit, the growth rate of employment for this group could increase by up to 8.9 percentage points, generating up to 456,200 additional jobs in the first year following enactment.

This estimate is contingent on an assumption (explained in greater detail below) that includes a low market-clearing wage rate for unskilled youth labor and an assumption about how the labor market reacts to time constraints placed on YMW work. Less generous assumptions yield lower job-creation estimates, which are included in the report. The estimates do not take into account any employer substitution of younger workers for older ones. While such substitution effects are difficult to quantify, previous evidence suggests they do not cancel out employment gains among younger workers. Moreover, an expansion of the Earned Income Tax Credit could mitigate such substitution effects.

REFORMING THE U.S. YOUTH MINIMUM WAGE

I. Introduction

President Obama has proposed raising the federal minimum wage from \$7.25 to \$12 per hour. Meanwhile, 29 states plus the District of Columbia already have a higher minimum wage for their residents.² California and New York are currently phasing in wage increases to \$15 per hour.

While some low-wage workers will see a raise from these policies, evidence shows that job opportunities will also disappear as firms face higher labor costs. This disemployment effect tends to disproportionately affect young people. According to a 2013 paper by economists Jonathan Meer and Jeremy West, a minimum-wage hike reduces employment growth for teenagers three times more than it does for workers in their early twenties and 11 times more than it does for middle-aged workers.³ This is not surprising; all other things being equal, businesses are less likely to offer jobs to young, unskilled workers if they must pay them the same as older, more experienced (and presumably more productive) workers.

Public policy has recognized the problem, to some extent. Amendments to the federal Fair Labor Standards Act in 1997 established a special youth minimum wage (YMW) under which workers under the age of 20 could earn \$4.25 per hour for their first 90 days of employment.⁴

However, many states do not include a similar exemption in their own minimum-wage codes—and when federal and state minimum-wage laws conflict, the higher and more restrictive rules always apply. A large number of young people, as a result, cannot take advantage of the federal YMW.

The 90-day limit may also dampen hiring. While some employers in high-turnover industries may not be affected by this, others may be reluctant to hire workers at a low wage if they must raise their pay at least 71 percent after a scant three months on the job.

This report seeks to answer the question of whether, and by how much, moving to a uniform, national youth minimum wage with more permissive rules could boost job creation among workers aged 16–19. Using elasticities of employment broken down by age estimated by Meer and West (2013),⁵ it finds that making the YMW universal among states at a rate of \$4.25, as well as removing the 90-day limit, could boost the growth rate of youth employment by up to 8.9 percentage points, generating up to 456,200 jobs in the first year.⁶

Would a national YMW, as proposed here, cause employers to substitute eligible workers instead of older ones? The available evidence indicates that a YMW would still result in more jobs overall. Still, expanding the earned income tax credit for adults (who are not eligible to receive the YMW) would make older low-skilled labor comparatively more attractive.

This report proceeds as follows. **Sections 2** and **3** review the economic evidence on minimum wages and youth minimum wages, respectively. **Section 4** lays out the history of the federal YMW. **Section 5** describes YMW law at the state level. **Section 6** discusses current YMW usage. **Section 7** describes the methods used to estimate the number of new jobs created by a YMW. **Section 8** reports results. **Section 9** discusses potential substitution effects. **Section 10** concludes. The **Appendix** provides more detail on individual state YMW laws.

II. Minimum Wage and Unemployment

Meer and West (2013) recently found that a 10 percent *increase* in the minimum wage reduces employment growth by 1.7 percentage points for 14- to 18-year-olds and 0.9 percentage points for 19- to 21-year-olds.⁷ However, these effects rapidly diminish with age and become statistically insignificant for individuals over 35. Meer and West also note that the employment effects often take time to show up, since minimum-wage increases tend to affect the rate of job growth rather than the level of employment.

An earlier review of the literature by David Neumark and William Wascher (2007) indicated that studies focusing on low-skilled groups (such as teenagers) found the most overwhelming evidence of the minimum wage's disemployment effects.⁸ An evaluation of other work by David Neumark, J. M. Ian Salas, and William Wascher (2014) settled on an employment elasticity of the minimum wage for teenagers of -0.2 .⁹

Most recently, Jeffrey Clemens and Michael Wither (2015) found that the federal minimum-wage hike from 2006 to 2009 reduced employment by 5.6 percentage points for young, low-skilled workers, accounting for 43 percent of this group's employment decline during the Great Recession.¹⁰ These employment losses are destructive: Clemens and Wither (2014), looking at individual-level panel data over several years, found that binding minimum-wage increases reduced the average monthly income of low-skilled workers by \$97 in the short run and \$153 in the medium run.¹¹ David Neumark and Olena Nizalova (2006) report similar findings: individuals who were exposed to higher minimum wages

when they were young tend to have lower earnings in their twenties.¹² This is because low-skilled workers have the most to gain from job experience.

III. Evidence on the Youth Minimum Wage

While the effect of raising the minimum wage has been studied extensively, less well documented is whether a youth minimum wage can mitigate the policy's disemployment effects on young people. Lawrence Katz and Alan Krueger (1992) examined the effect of a now-defunct federal YMW regime in Texas, and found that employers rarely used it.¹³ As discussed in Section 4, this is likely because of onerous requirements surrounding the first federal YMW, combined with the small (12 percent) wage reduction from the adult minimum wage.

David Neumark and William Wascher (1992) examined the effect of minimum-wage increases on youth employment, and found a negative effect that is diminished when states include subminimum wages for teenagers.¹⁴ (The study period was before the implementation of the first federal YMW.) Importantly, the authors found a significant reduction in teen disemployment effects only for age-based subminimum wages, and not for student or apprenticeship-based subminimum wages.

Another study by the same authors (2004) looked at a cross-section of 17 member countries of the Organisation for Economic Co-operation and Development.¹⁵ It showed a clear negative effect of minimum wages on youth employment; but this effect, again, was mitigated in those countries with strong subminimum-wage provisions. Notably, the authors decided that the U.S. YMW was too limited in scope to be classified as a subminimum wage for the purposes of their analysis.

There is other international evidence about the effects of a youth minimum wage. In the United Kingdom, the minimum wage for individuals aged 17 and younger is 42 percent below the standard minimum wage (comparable with the difference in the U.S.). A report commissioned by the U.K. government showed that freezing the country's youth minimum wage in 2011, while the adult minimum wage increased, had a positive effect on youth employment.¹⁶ Like many others, however, this study uses individuals in their early twenties as a control group for teenagers, even though the two groups are not directly comparable.¹⁷ This is a weakness that runs throughout most of the international evidence.

Dean Hyslop and Steven Stillman (2004) examined reforms that increased the restrictiveness of New Zealand's YMW.¹⁸ They found no effect in the period immediately after the reforms took effect. However, a later study (in 2011) by the same authors found a significant, negative effect of another round of YMW tightening on youth employment in later years, equivalent to a loss of 4,500 to 9,000 jobs over a two-year period.¹⁹ Scaled for population, the employment losses from such a policy in the United States would be between 300,000 and 600,000 jobs.²⁰ This finding is consistent with evidence from the United States showing that the negative effects of the minimum wage occur with a lag.

The existing literature generally shows that minimum wages have strong negative effects on the employment of teenagers and young adults. Evidence on the effects of a youth minimum wage suggests a boost to employment for affected age groups, which becomes stronger when the YMW is set reasonably low and does not come with burdensome additional restrictions.

IV. History of the U.S. Youth Minimum Wage

The Fair Labor Standards Amendments of 1989 established the first federal-level youth minimum wage. It took effect in

1990, expired in 1993, and was widely regarded as a failure.²¹ The YMW was set at \$3.35 when the full minimum wage was \$3.80, was limited to workers under age 20 for a period not to exceed 90 days, and limited the number of hours that YMW employees could work.

The first YMW contained onerous requirements that deterred employers from taking advantage of it. Employers were required to offer an approved program of on-the-job training while paying the YMW and to provide written copies of the training program to employees. Employees on the YMW were also required to provide proof of previous employment to the Labor Department.

Michael Hurst, then-chairman of the National Restaurant Association, wrote in the *New York Times* in 1991: "The qualifications and contingencies connected with the subminimum [read: youth minimum] wage are so convoluted that no food service company, large or small, is likely to use it."²² He cited a survey showing that only 9 percent of restaurants (not workers) took advantage of the YMW during this period.

Economic evidence confirmed this. Katz and Krueger (1992) found that only 2 percent of fast-food restaurants in Texas used the YMW, a share that grew to 5 percent after the standard minimum wage was hiked in 1991. Notably, about one-third of managers in their sample were unaware that the YMW was even an option. Others cited the difficulty of applying for permission to pay the YMW.²³



The second and current YMW was introduced on September 1, 1997, as part of the Small Business Job Protection Act of 1996, which also increased the regular minimum wage.²⁴ The rate for workers under the age of 20 was, and still is, \$4.25 and can be paid only for their first 90 days on the job. The paperwork and other requirements are much less burdensome. The only requirement other than the 90-day limit is a provision prohibiting employers from displacing other workers in order to hire someone at the YMW (though this is difficult to enforce in practice).

Other subminimum-wage programs in the federal labor code should not be confused with the YMW. Employees who receive tips may be paid a minimum wage of \$2.13 per hour, as long as the tips bring the employee’s earnings up to the standard minimum wage.²⁵ Another exemption is the Full-Time Student Program, which allows eligible individuals who are employed in certain places (such as in the agricultural industry or at colleges) to earn 85 percent of the standard minimum.²⁶ Similarly, the Student-Learner Program allows high-school students enrolled in vocational education to earn 75 percent of the standard minimum, as long as the vocational courses are certified by the Department of Labor.²⁷

Several states have programs that mirror these federal exemptions. Unlike these other subminimum-wage programs, the YMW is universal, meaning that an individual does not have to work in a certain job to receive the exemption and that an employer does not need to apply for special certification to use it.

V. State Youth Minimum Wages

Fifteen states adopt the federal YMW of \$4.25 per hour. This includes five states, all in the South, which do not have minimum-wage laws and thus defer to the federal standard. (See the Appendix to this report, which catalogs and describes the youth minimum-wage laws in all 50 states and the District of Columbia.)

Eighteen states have no general exemption from the minimum wage for younger workers, and because their laws are more restrictive, the federal YMW does not apply to them. Some of these states do have targeted exemptions—in Rhode Island, for instance, full-time students 19 years of age or younger working at certain nonprofit organizations can earn 10 percent below the standard state minimum wage. However, I do not take these targeted exemptions into account in this descriptive section or the empirical analysis

to follow. Evidence suggests that targeted exemptions do not have a significant effect on youth employment, while a broad YMW does.²⁸

Five states have a minimum-wage exemption for younger workers but set it above the standard federal minimum of \$7.25, meaning that the federal YMW does not apply. However, the exemption in these states can be meaningful if the state’s own minimum wages are higher than \$7.25.

The remaining 13 states have a youth minimum wage but include additional restrictions that take precedence over the federal YMW. These restrictions may include a YMW rate higher than \$4.25, an eligibility cutoff lower than 20 years of age, or other stipulations. Alaska, for example, limits employees on the YMW to 30 hours of work per week.

In summary, approximately one-third of states adopt the federal YMW, one-third allow no exemption from the adult minimum wage, and the remainder are somewhere in between (**Figure 1** and **Figure 2**).

State Youth Minimum Wages

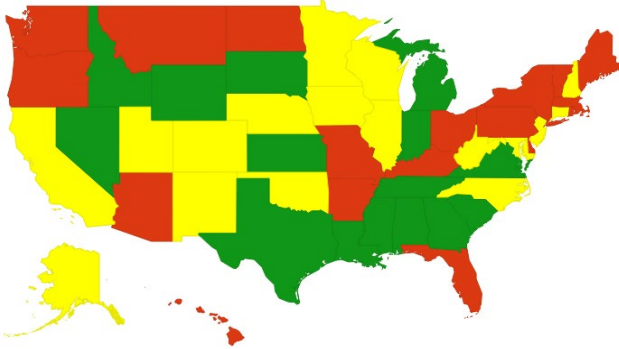
FIGURE 1.

Category	States
Adopts Federal YMW	Alabama, Georgia, Idaho, Indiana, Kansas, Louisiana, Michigan, Mississippi, Nevada, South Carolina, South Dakota, Tennessee, Texas, Virginia, Wyoming
Has YMW but with Additional Restrictions	Alaska, Colorado, District of Columbia, Iowa, Nebraska, New Hampshire, New Jersey, New Mexico, North Carolina, Oklahoma, Utah, West Virginia, Wisconsin
Has YMW but Set Above \$7.25	California, Connecticut, Illinois, Maryland, Minnesota
No YMW	Arizona, Arkansas, Delaware, Florida, Hawaii, Kentucky, Maine, Massachusetts, Missouri, Montana, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, Vermont, Washington

It is hard to know if many employers are even aware of their state’s YMW. Some states clearly lay out their policies on government websites; but in others, the picture is murkier. Nevada, for example, buries its exemption deep in the state labor codes. In Georgia, information was not online, and it took calls to four different state government offices before I

FIGURE 2.

State Youth Minimum Wages



found someone who was familiar with state law. In Texas, two different government offices gave conflicting answers when I asked about its YMW. (The correct answer was found by a close reading of the state labor code.)

VI. Usage of the Youth Minimum Wage

The Current Population Survey (CPS) includes the Outgoing Rotation Group Earner Study, which asks respondents about their hourly wages.²⁹ I looked at these data for the subset of individuals aged 16–19 employed in nonagricultural industries and paid by the hour to get a rough picture of the extent to which employers use the youth minimum wage. Because the earner group sample is smaller than the full CPS sample, I used four years of data (2012–15) in order to augment the sample size.

The data indicate that among this group, 5.2 percent earn between the YMW rate of \$4.25 and the federal standard minimum wage of \$7.25, representing nearly 200,000 workers. Unfortunately, the survey does not ask why an individual earns below minimum wage, meaning that many workers in this group might not be taking advantage of the youth minimum wage, but might instead be earning a tipped wage or an apprenticeship wage.

Excluding workers in the food-service industry, who are most likely to receive tips, reduces the proportion of workers in the “potential YMW” range to 4.8 percent. However, this leaves

workers who might earn below the minimum wage due to other subminimum-wage programs besides the YMW.³⁰

Another strategy is to compare states that have adopted the federal YMW with states that have no YMW whatsoever. The findings here are counterintuitive: in states that adopt the federal YMW, 4 percent earn a wage within the “potential YMW” range of \$4.25 to \$7.24. However, in states with no YMW law, 6.3 percent earn within this range.³¹ This difference is significant at the 10 percent level. Were employers widely using the YMW in its current form, we would expect the former group of states to have a much higher proportion of young workers in this range. The fact that the opposite is occurring provides strong evidence that most teenagers who earn below the standard minimum wage do so for other reasons.

Additionally, there is very little difference between YMW and non-YMW states in terms of youth employment. States that adopt the federal YMW have an average youth (16–19) employment-population ratio of 29.3 percent, while states that do not adopt the federal YMW have a ratio of 30.3 percent, only slightly higher. The labor-force participation-rate divergence is even narrower—the rate is 35.6 percent for federal-YMW states and 35.8 percent for non-YMW states. The gap in unemployment rates is wider: 18.0 percent for federal YMW states and 15.6 percent for non-YMW states, but the gap runs in the opposite direction of what we would expect, were the current YMW widely used. These statistics are only descriptive, of course, but they do indicate that the YMW in its current form is not a major driver of trends in youth employment. If it were, we would expect the youth employment situation to look much more favorable (i.e., higher employment-population ratios and labor-force participation, as well as lower unemployment) in states with an unrestrictive YMW law.

One final piece of evidence is in order: the wage distribution of young workers sees a spike at the standard minimum wage of \$7.25. In fact, more young workers earn exactly \$7.25 (9.9 percent) than earn below \$7.25 (7.1 percent). Were the YMW widely utilized, we would not expect to see such a spike, as employees would not be bound by this lower limit on their wages.

Thus, there is good reason to conclude that current take-up of the YMW is quite limited, even in states with an unrestrictive YMW law. However, the data also indicate an appetite in the labor market for hiring youth workers at rates below \$7.25 an hour. The fact that such hiring does not take place is likely due to the 90-day limit. A youth minimum wage without this limit might generate substantially higher take-up.

VII. Estimating the Job-Creating Potential of an Expanded YMW: Methodology

The way in which minimum-wage *increases* affect the labor market is still being understood. For several years, studies on the minimum wage used the short-term level of employment as the dependent variable. Several of these studies, such as Card and Krueger’s (1994), did not find any significant effect of the minimum wage on employment.³²

Meer and West (2013) challenged this framework by using job-growth rates as the dependent variable, which implicitly estimates long-term minimum-wage effects.³³ The logic was that small increases in labor costs may not cause employers to seriously alter their current business models by firing workers—instead, employers may raise prices to cover the higher minimum wage. However, the higher labor costs mean that fewer jobs and businesses will be created in the future. Thus, the level of employment may not show any significant change because the effects of the minimum wage take time to show themselves. The rate of job growth is a clearer indicator of the effect of raising the minimum wage.

Meer and West (2013) found that a 10 percent increase in the minimum wage reduces annual employment growth by 0.4 percentage points. Different age groups do not share this burden equally: a 10 percent minimum-wage hike reduces annual employment growth among 14- to 18-year-olds by 1.7 percentage points, 19- to 21-year-olds by 0.9 percentage points, and 22- to 24-year-olds by 0.5 percentage points.³⁴ These age-specific elasticities allow us to estimate the effect of, for example, an expansion of the YMW.

In this report, I used the Meer and West (2013) elasticities to estimate the effect of universalizing the federal YMW in each of the 50 states, plus the District of Columbia, at a rate of \$4.25, with an age cap of 20 years in each state but with no 90-day employment limit and no other state-level restrictions. I multiplied each change in the effective minimum wage by the applicable elasticity to arrive at the change in the rate of employment growth for each age group in each state.³⁵ Finally, I apply the employment-growth estimates to the current level of employment in each state-age group to estimate the number of jobs gained by expanding the YMW.

The current level of employment in each state is shown in Current Population Survey (CPS) data from the University

of Minnesota’s Integrated Public Use Microdata Series.³⁶ Self-employed individuals and those employed in the agricultural industry are excluded. One problem is that margins of error can become very large when using state-level data broken into specific age groups. To get around this problem, I take a four-year average (2012–15) for each state-age group’s employment level, which increases the sample size and more accurately approximates the true level of employment. It should be noted that the Meer and West elasticities reflect the number of jobs, whereas my calculations use the level of employment, due to data-availability constraints.³⁷ These numbers are comparable but not perfect substitutes, and the reader should keep this caveat in mind.

One issue is the treatment of the current 90-day limit on how long employers can pay a worker the YMW.³⁸ Evidence is scarce on how this limit affects employment. I thus produce two estimates. My low estimate assumes that the 90-day limit has no effect on employers’ hiring decisions. My high estimate assumes that because of the 90-day limit, no employer takes advantage of the current YMW—meaning that the effective minimum wage for young people is the standard one.³⁹ The answer is probably somewhere in the middle (though I believe that it lies closer to the higher estimate).⁴⁰ I have also reported averages of the two estimates.

The analysis ignores other subminimum-wage programs, such as the Student-Learner Program (see Section 4). However, the existence of these programs is likely already priced in to the Meer and West elasticities, so not much is lost by excluding them.

Another potential effect of the YMW not modeled here is that individuals might gain job experience on the YMW, boosting their future employment prospects. This effect is suggested by Clemens and Wither (2014).⁴¹ However, it is ignored because the analysis covers only one year, in which such long-term effects would likely be negligible.

One last caveat: Meer and West analyzed the effects of an *increase* in the minimum wage, while this analysis extrapolates their estimates to examine a *decrease*. While it is reasonable to assume that the demand curve for youth labor has a constant elasticity (meaning that the effects of a 10 percent increase in the minimum wage would mirror the effects of a 10 percent decrease), it is possible that lowering the youth minimum wage by a significant amount would cause the new YMW to fall below the market-clearing wage level for youth labor. Essentially, the demand for unskilled young workers may equal supply at a wage rate above \$4.25 but below \$7.25.



Since there is no reliable way to determine the market-clearing wage level for young workers, this study provides a range of estimates. I first analyze the effects of creating a universal YMW at the rate of \$4.25 but where the market-clearing wage rate is \$7.25 (or equal to the current minimum). Under this assumption, there is not much room for additional job creation, since the standard and youth minimum wages in most states are already close to (or below) the market-clearing wage rate.

I then analyze the employment effects for progressively lower market-clearing wage rates, and end with the rate equal to my proposed YMW level of \$4.25.⁴² As we assume lower and lower market-clearing wage rates, it becomes less and less likely that they will remain above the actual market-clearing level. Therefore, we have less confidence in the estimates when assuming a lower market-clearing wage.

While there is no hard evidence to determine the market-clearing rate for inexperienced young workers, international comparisons do suggest that it is \$4.25 or below. In the United Kingdom, for example, average wages for young apprentices are 63 percent of the adult minimum-wage rate.⁴³ This mirrors the ratio in the U.S.: the YMW rate of \$4.25 is 59 percent of the standard minimum-wage rate of \$7.25. In Germany, first-year apprentices earn 39 percent, on average, of the adult minimum wage.⁴⁴ These international comparisons suggest that there would be young people willing to take jobs at the YMW rate of \$4.25, were they available. For this reason, I recommend assuming the lowest market-clearing wage rate (\$4.25) when interpreting the following results.

VIII. Results

The full results of the methodology used in this paper are in **Figure 3** (for the low estimate), **Figure 4** (for the high estimate), and **Figure 5** (for averages). Four possible market-clearing wage rates are listed in the leftmost column of each figure. (These represent different possible values of the market-clearing wage rate, not different YMW rates.) Employment-growth estimates are listed by age group. Lower market-clearing wage rates yield higher estimates of job creation. The most generous assumption, that the market-clearing wage rate is \$4.25 or below, yields an average first-year job-creation estimate of approximately 376,500 new jobs for workers aged 16–19. The low job-creation estimate is 296,700, and the high estimate is 456,200.

In relative terms, this represents a boost to employment-growth rates of between 5.8 and 8.9 percentage points, with an average estimate of 7.3 percentage points. Note that these figures refer to employment growth among the affected 16- to 19-year-old age group, and not to employment growth overall, which means that they do not take into account substitution. (See Section 9 for additional discussion.)

Less generous assumptions yield smaller job-creation estimates. For instance, an assumed market-clearing wage of \$5.25 shows employment growth for the 16- to 19-year-old age group of between 194,300 and 303,700, with an average of 249,000. At even higher assumed market-clearing wage rates, estimated employment growth for this age group shrinks dramatically, to a 144,800 average estimate for a market-clearing rate of \$6.25 and just 59,800 for a market-clearing rate of \$7.25.

Estimated Number of Jobs Created by Age Group and Value of Market-Clearing Wage, First Year of Enactment (Low Estimate)

FIGURE 3.

Market-Clearing Wage	Ages 16–17	Ages 18–19	Total, Ages 16–19
\$7.25	15,900	32,900	48,800
\$6.25	37,500	74,300	111,800
\$5.25	66,700	127,600	194,300
\$4.25	103,300	193,400	296,700

Estimated Number of Jobs Created by Age Group and Value of Market-Clearing Wage, First Year of Enactment (High Estimate)

FIGURE 4.

Market-Clearing Wage	Ages 16–17	Ages 18–19	Total, Ages 16–19
\$7.25	21,200	49,600	70,800
\$6.25	61,400	116,400	177,800
\$5.25	108,700	195,000	303,700
\$4.25	166,000	290,200	456,200

Estimated Number of Jobs Created by Age Group and Value of Market-Clearing Wage, First Year of Enactment (Average)

FIGURE 5.

Market-Clearing Wage	Ages 16–17	Ages 18–19	Total, Ages 16–19
\$7.25	18,600	41,300	59,800
\$6.25	49,500	95,400	144,800
\$5.25	87,700	161,300	249,000
\$4.25	134,700	241,800	376,500

Results for different states are in **Figure 6**, assuming a market-clearing rate of \$4.25 or below.⁴⁵ Estimated job gains from an expansion of the YMW are not spread equally across different regions. States with very high minimum wages, such as Vermont and Massachusetts, would see up to a 12 percentage-point increase in employment-growth rates for young people (using the average estimate). Meanwhile, states with low minimum wages and/or an existing YMW law might see employment-growth boosts of closer to 4 or 5 percentage points. On average, states without a YMW would see a youth employment-growth boost of 9.4 percentage points, compared with 4 percentage points for states that already have the least restrictive YMW allowed by federal law.

Job-Growth Estimates by State (Ages 16–19), Assuming Market-Clearing Wage Less than or Equal to \$4.25

FIGURE 6.

State	Low Estimate	High Estimate	Average	Job Growth
Alabama	-	4,800	2,400	3.6%
Alaska	1,000	1,500	1,200	8.1%
Arizona	11,400	11,400	11,400	9.0%
Arkansas	4,700	4,700	4,700	9.1%
California	41,700	51,400	46,500	10.3%
Colorado	8,600	8,800	8,700	8.3%
Connecticut	6,500	7,200	6,800	11.5%
Delaware	1,600	1,600	1,600	9.5%
District of Columbia	300	400	300	11.0%
Florida	22,500	22,500	22,500	8.6%
Georgia	-	8,700	4,300	3.7%
Hawaii	1,900	1,900	1,900	9.3%
Idaho	-	2,600	1,300	3.9%
Illinois	18,200	19,400	18,800	8.8%
Indiana	-	10,100	5,000	3.9%
Iowa	5,100	6,700	5,900	7.2%
Kansas	-	5,500	2,700	3.9%
Kentucky	5,500	5,500	5,500	7.2%
Louisiana	-	5,100	2,600	3.9%
Maine	2,100	2,100	2,100	8.3%
Maryland	7,200	9,200	8,200	9.3%
Massachusetts	15,300	15,300	15,300	12.1%
Michigan	-	16,400	8,200	4.4%
Minnesota	9,900	12,100	11,000	8.8%
Mississippi	-	3,600	1,800	3.5%
Missouri	10,000	10,000	10,000	8.7%
Montana	2,100	2,100	2,100	9.1%
Nebraska	3,600	5,800	4,700	9.1%
Nevada	-	3,700	1,900	4.4%
New Hampshire	1,300	2,800	2,000	5.8%
New Jersey	8,000	11,700	9,800	7.2%
New Mexico	1,600	2,400	2,000	6.6%
New York	22,900	22,900	22,900	10.4%
North Carolina	8,300	10,500	9,400	6.7%
North Dakota	1,400	1,400	1,400	7.8%
Ohio	19,300	19,300	19,300	8.9%
Oklahoma	3,000	5,100	4,100	6.1%

State	Low Estimate	High Estimate	Average	Job Growth
Oregon	5,700	5,700	5,700	10.8%
Pennsylvania	18,000	18,000	18,000	7.8%
Rhode Island	2,500	2,500	2,500	11.4%
South Carolina	-	4,700	2,300	3.8%
South Dakota	-	2,000	1,000	5.3%
Tennessee	-	8,900	4,400	3.8%
Texas	-	34,200	17,100	3.7%
Utah	2,700	5,800	4,300	5.9%
Vermont	900	1,400	1,200	9.4%
Virginia	-	8,600	4,300	3.8%
Washington	13,600	13,600	13,600	11.3%
West Virginia	1,300	2,400	1,900	8.4%
Wisconsin	6,900	11,300	9,100	6.4%
Wyoming	-	1,000	500	3.8%

Source: Appendix

Teenagers in northeastern states would see the largest increase in employment growth, with the average state seeing around a 9.3 percentage-point increase in youth employment (again, using the average estimate). Southern states, which largely have less restrictive minimum-wage laws, would see an average gain of 5.0 percentage points. Those in the West (7.8 percentage points) and the Midwest (7.1) would also see gains.

It is worth considering the results state by state, since even if the federal YMW law were relaxed, there is no guarantee that all states would follow suit. The aggregate numbers in Figures 3-5 assume that all states do follow the federal government's lead.

IX. Substitution Effects

One objection to expanding the youth minimum wage is that older workers (especially single mothers) who are not covered by the YMW might see their employment rates drop as businesses shift to hiring younger workers. The best evidence on the substitution effect comes from Neumark and Wascher (1992), who analyzed a series of changes in the minimum wage and various state subminimum wages from 1974 to 1989.⁴⁶ The YMWs that they analyzed affected teenagers aged 16–19, but the authors estimated the effects on both the 16- to 19-year-old and the 20- to 24-year-old age groups, the latter of which was not covered by the YMWs.⁴⁷

Depending on the specification of their model, Neumark and Wascher found that a gap of a certain size⁴⁸ between the standard minimum wage and the YMW would increase the employment-population ratio of the affected (16–19) age group by between 0.27 percentage points (statistically insignificant) and 0.44 percentage points (significant). Simultaneously, the effect on the employment-population ratio of the uncovered (20–24) age group would range between an increase of 0.08 percentage points to a decrease of 0.23 percentage points. However, these estimates are not significantly different from zero.

Using estimates of civilian noninstitutional population levels for these age groups from the 1978–89 study period, I can roughly estimate the *net* effect on job creation of my proposed YMW expansion.⁴⁹ Depending on the specification of the Neumark and

Wascher model, the substitution effects range from negligible to 0.68 jobs lost to substitution for every one created. This translates to a net gain of 125,500 to 376,500 jobs.⁵⁰ Since most of the coefficients from Neumark and Wascher are not statistically significant, particularly for the 20- to 24-year-old age group, these estimates ought to be interpreted with extreme caution.

The main conclusion here is that while substitution effects due to YMWs may exist, the introduction of a youth minimum wage will lead to an overall increase in employment. This is because young workers and slightly older workers are not perfect substitutes. A 16-year-old worker who has never held a job before will need to spend some time learning specific and general job skills, while a 22-year-old with months or years of experience will be more immediately valuable to the employer, despite a higher wage. Even if some older workers are directly substitutable for young, entry-level workers, most won't be.

Moreover, the youth minimum wage may lead to better outcomes for young adults in the long run. In an individual's first years of working, his wage-experience profile is very steep—in other words, a year of working at the start of one's career predicts a much larger boost to wages than it does later in one's career.⁵¹ Most YMW earners will likely be able to command wages much higher than the adult minimum wage once they reach the age of 20, having had months or years of experience under their belt.

It is important to note that the risk of substitution would increase were the standard minimum wage raised, since the differential between that and the YMW would widen. This would raise the incentive for employers to substitute young, unskilled labor for older, more skilled labor. In the context of avoiding potential substitution, a moderate standard minimum wage makes sense.

The earned income tax credit (EITC) can address the substitution effect of a youth minimum wage. The EITC is a type of employment subsidy for which benefits are skewed toward households with children.⁵² According to theory and evidence laid out by David Neumark and William Wascher, single adult women with children see a boost to employment and earnings due to the EITC. The employment effects rest on the assumption that these individuals command wages slightly above the standard minimum wage—which makes sense, as adults tend to have more experience and higher reservation wages than teenagers. Since credit benefits overwhelmingly flow to parents (and their employers, who might be able to lower the wages of

these individuals down to the minimum—or, in any event, not need to raise them—in order to retain their work), childless and teenage workers see lower employment with a generous EITC and a higher minimum wage, due to substitution.⁵³

It follows, then, that policymakers could blunt any substitution effects caused by the YMW if they were to expand the EITC to entitle all low-wage workers over the age of 20 (i.e., above the YMW eligibility age) to full benefits, instead of just low-wage workers with children. While the YMW would make teenage labor more attractive to employers, the EITC would simultaneously make low-skilled adult labor more attractive. Balancing an EITC expansion with a YMW expansion could eliminate most of the substitution effect, and most YMW hiring would thus represent economic activity that would not otherwise have taken place.

X. Conclusion

This paper has examined the youth minimum wage on the federal and state levels. The federal government's YMW is relatively more generous than in many states, but even so, the 90-day time limit blunts its effectiveness. Expanding the YMW and universalizing it among all states could raise employment among 16- to 19-year-olds by up to 456,200 in the first year.

At the federal level, Congress could, and should, expand the federal YMW by lifting the 90-day limit. Even if states take no action, such a change would have real effects. That's because 15 states, including a big one, Texas, base their state minimum-wage laws directly on the federal Fair Labor Standards Act.

At the state level, I recommend that all states adopt the federal YMW of \$4.25 per hour, with an age cap of 20 years. Employers are more likely to take a chance on hiring young, unskilled workers when labor costs are lower, and young people can gain skills and work habits that would enable them to command higher wages later on.

If the federal government does not act, states can still loosen their own youth minimum-wage laws to be in line with the federal government's \$4.25 per hour. However, they will not be able to go beyond it—say, by raising the age cap or lengthening the 90-day limit—because the more stringent federal standard will still apply. Therefore, the employment gains may be limited if states act but the federal government does nothing.

Appendix

Under federal law, employers may hire an individual under the age of 20 for \$4.25 per hour (the adult minimum wage is \$7.25). This wage can be paid only for the first 90 days of employment. The federal YMW applies unless a state applies a more restrictive standard. All workers hired under a YMW are bound by the federal 90-day limit, even if the state does not prescribe a time limit.⁵⁴

In the appendix below, states that have not enacted a youth minimum-wage law (which means that workers under the age of 20 must be paid the adult minimum wage) are labeled “no exemption.” States with minimum-wage exemptions that mirror the federal YMW law are labeled “federal standards apply.” Not included in this section are other subminimum wages such as student-learner wages and certified apprenticeship wages, industry-specific exemptions (such as those for agricultural workers), or subminimum wages that apply only to individuals under the age of 16.

* * *

Alabama: No minimum-wage law. Federal standards apply.

Alaska: There is an exemption for individuals under the age of 18, so long as they do not work more than 30 hours per week. The state (adult) minimum wage is \$9.75.⁵⁵

Arizona: No exemption. The state minimum wage is \$8.05.⁵⁶

Arkansas: No exemption. The state minimum wage is \$8.00.⁵⁷

California: No exemption. However, the state does have a subminimum wage for “learners” equal to 85 percent of the adult minimum wage, or \$8.50. This is applicable only during the worker’s first 160 hours of employment (four weeks of full-time work). Since it applies to young people (though not exclusively), this “learner wage” counts as a YMW, for our purposes. The state minimum wage is \$10.00.⁵⁸

Colorado: Individuals under the age of 18 can earn 85 percent of the state minimum, or \$7.06. The state minimum wage is \$8.31.⁵⁹

Connecticut: Individuals under 18 can earn 85 percent of the state minimum, or \$8.16. However, this exemption is limited to the first 200 hours of employment, or five weeks of full-time work. The state minimum wage is \$9.60.⁶⁰

Delaware: No exemption. The state minimum wage is \$8.25.⁶¹

District of Columbia: Individuals under 18 are eligible for the federal exemption. However, 18- and 19-year-olds must be paid the District minimum wage of \$10.50 per hour.⁶²

Florida: No exemption. The state minimum wage is \$8.05.⁶³

Georgia: Federal standards apply.⁶⁴

Hawaii: No exemption. The state minimum wage is \$8.50.⁶⁵

Idaho: Federal standards apply.⁶⁶

Illinois: Individuals under the age of 18 may earn a minimum wage of \$7.75 per hour. Illinois also allows workers of all ages to receive \$7.75 for their first 90 days of employment. The state minimum wage is \$8.25.⁶⁷

Indiana: Federal standards apply.⁶⁸

Iowa: Employers can pay an “initial employment wage” of \$6.35 per hour to workers under 20. The state minimum wage is \$7.25.⁶⁹

Kansas: Federal standards apply.⁷⁰

Kentucky: No exemption. The state minimum wage is \$7.25.⁷¹

Louisiana: No minimum-wage law. Federal standards apply.

Maine: No exemption. The state minimum wage is \$7.50.⁷²

Maryland: Employees under 20 may earn 85 percent of the state minimum, or \$7.44, for their first six months of employment. Since Maryland’s YMW is higher than the full federal minimum of \$7.25, the six-month period is not superseded by the federal government’s lower 90-day limit. The state minimum wage is \$8.75.⁷³

Massachusetts: No exemption. The state minimum wage is \$10.00.⁷⁴

Michigan: Employees under 20 may earn \$4.25 per hour for their first 90 days of employment. In addition, individuals under 18 may earn \$7.25 per hour indefinitely. The state minimum wage is \$8.50.⁷⁵

Minnesota: Employees under 20 may earn \$7.25 per hour for their first 90 days of employment. In addition, individuals under 18 may earn \$7.25 per hour indefinitely. The state adult minimum wage is \$9.00.⁷⁶

Mississippi: No minimum-wage law. Federal standards apply.

Montana: No exemption. The state minimum wage is \$8.05.⁷⁷

Nebraska: Individuals under 20 may earn 75 percent of the federal minimum, or \$5.44, for their first 90 days of employment. The state minimum wage is \$9.00.⁷⁸

Nevada: Federal standards apply. The state minimum wage is \$8.25.⁷⁹

New Hampshire: Employees who have been on the job for less than six months may be paid 75 percent of the applicable minimum wage, or \$5.44. However, in practice, this applies only to workers under 20 for their first 90 days on the job, since federal law states that all workers 20 and older must be paid \$7.25 per hour, regardless of what New Hampshire state law says. The state minimum wage is \$7.25.⁸⁰

New Jersey: The federal YMW of \$4.25 applies to individuals under 18, unless they are enrolled in a vocational program, for which different state standards apply. The state minimum wage is \$8.38.⁸¹

New Mexico: Individuals under 18 may earn the federal YMW of \$4.25, unless they have graduated from high school. The state minimum wage is \$7.50.⁸²

New York: No exemption. The state minimum wage is \$9.00.⁸³

North Carolina: Individuals under 20 can earn 90 percent of the state minimum, or \$6.50. The state minimum wage is \$7.25.⁸⁴

North Dakota: No exemption. The state minimum wage is \$7.25.⁸⁵

Ohio: No exemption. The state minimum wage is \$8.10.⁸⁶

Oklahoma: The federal YMW applies but only to individuals under 18 who have not graduated high school. The state minimum wage is \$7.25.⁸⁷

Oregon: No exemption. The state minimum wage is \$9.25.⁸⁸

Pennsylvania: No exemption. The state minimum wage is \$7.25.⁸⁹

Rhode Island: No exemption. The state minimum wage is \$9.60.⁹⁰

South Carolina: No minimum-wage law. Federal standards apply.

South Dakota: Federal standards apply. South Dakota has a second youth exemption—workers under 18 may earn an hourly wage of \$7.50 or more for an indefinite period.⁹¹ The state minimum wage is \$8.55.⁹²

Tennessee: No minimum-wage law. Federal standards apply.

Texas: Federal standards apply.⁹³

Utah: The federal YMW applies but only to individuals under the age of 18. The state minimum wage is \$7.25.⁹⁴

Vermont: No exemption. The state minimum wage is \$9.60.⁹⁵

Virginia: Federal standards apply.⁹⁶

Washington: No exemption. The state minimum wage is \$9.47.⁹⁷

West Virginia: Employers may pay employees under 20 a minimum wage of \$6.40 for their first 90 days of employment. The state minimum wage is \$8.75.⁹⁸

Wisconsin: Employers may pay employees under 20 a minimum wage of \$5.90 for their first 90 days of employment. The state minimum wage is \$7.25.⁹⁹

Wyoming: Federal standards apply.¹⁰⁰

Endnotes

- ¹ With some exceptions that will be explained below.
- ² See “Minimum Wage Laws in the States,” U.S. Department of Labor, January 1, 2016. <http://www.dol.gov/whd/minwage/america.htm>.
- ³ Jonathan Meer and Jeremy West, “Effects of the Minimum Wage on Employment Dynamics,” NBER Working Paper no. 19262, December 2013. http://economics.cornell.edu/sites/default/files/files/events/Meer_West_Minimum_Wage.pdf. Referred to hereafter as Meer and West (2013).
- ⁴ 29 U.S. Code Sec. 206(g). <https://www.law.cornell.edu/uscode/text/29/206>.
- ⁵ See n. 3 above.
- ⁶ Should the market-clearing wage be higher than \$4.25, fewer teenagers would be hired, as will be explained below.
- ⁷ Meer and West (2013) reported quarterly estimates (–0.46 percentage points for 14–18-year-olds, –0.24 percentage points for 19–21-year-olds, and –0.14 for 22–24-year-olds). I have annualized these estimates.
- Arindrajit Dube (“Minimum Wages and Aggregate Job Growth: Causal Effect or Statistical Artifact?,” IZA Discussion Paper no. 7674, October 2013. <http://ftp.iza.org/dp7674.pdf>) criticized Meer and West (2013), arguing that the authors did not sufficiently control for ways in which states that raised their minimum wages might be fundamentally different from states that did not. Meer and West responded by showing that such differences were controlled for by their fixed-effects model. See their “Supplemental Appendix for Effects of the Minimum Wage on Employment Dynamics,” NBER Working Paper no. 19262, December 2013. https://arindube.files.wordpress.com/2013/10/dube_minwagejobgrowth.pdf.
- A much-cited study by David Card and Alan Krueger found no disemployment effect from a small increase in the minimum wage. See their “Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania,” *American Economic Review* 84, no. 4 (September 1994). <http://davidcard.berkeley.edu/papers/njmin-aer.pdf>. However, their study, as well as others like it, generally differs from Meer and West (2013) in that they do not examine the rate of job growth but the level of employment, potentially masking longer-term disemployment effects.
- ⁸ See David Neumark and William Wascher, “Minimum Wages and Employment,” IZA Discussion Paper no. 2570, January 2007. <http://ftp.iza.org/dp2570.pdf>.
- ⁹ See David Neumark, J. M. Ian Salas, and William Wascher, “More on Recent Evidence on the Effects of Minimum Wages in the United States,” NBER Working Paper no. 20619, October 2014. <http://papers.nber.org/tmp/1162-w20619.pdf>.
- Some studies looking at teenagers specifically have failed to find major employment responses to the minimum wage. See Madeline Zavodny, “The Effect of the Minimum Wage on Employment and Hours,” *Labour Economics* 7 (2000). http://ecademy.agnesscott.edu/~mzavodny/documents/LabourEconomics_minwage_000.pdf. This study found that minimum wages have only a weak negative effect on employment and no negative effect on hours worked. However, Zavodny examined only a 12-month period.
- ¹⁰ See Jeffrey Clemens and Michael Wither, “The Minimum Wage and the Great Recession: Evidence from the Current Population Survey,” NBER Working Paper no. 21830, December 2015. <http://www.nber.org/papers/w21830>.
- ¹¹ See Jeffrey Clemens and Michael Wither, “The Minimum Wage and the Great Recession: Evidence of Effects on the Employment and Income Trajectories of Low-Skilled Workers,” NBER Working Paper no. 20724, December 2014. <http://www.nber.org/papers/w20724>.
- ¹² See David Neumark and Olena Nizalova, “Minimum Wage Effects in the Longer Run,” *Journal of Human Resources* (August 2006). <http://jhr.uwpress.org/content/XLII/2/435.abstract>.
- ¹³ See Lawrence Katz and Alan Krueger, “The Effect of the Minimum Wage on the Fast-Food Industry,” *Industrial and Labor Relations Review* 46, no. 1 (October 1992): 6–21. <http://marbles.sonoma.edu/users/c/cuellar/econ421/katzkrueger.pdf>.
- ¹⁴ See David Neumark and William Wascher, “Employment Effects of Minimum and Subminimum Wages: Panel Data on State Minimum Wage Laws,” *Industrial and Labor Relations Review* 46, no. 1 (October 1992): 55–81. <http://www.uh.edu/~adkugler/Neumark%26Wascher.pdf>.
- ¹⁵ See David Neumark and William Wascher, “Minimum Wages, Labor Market Institutions, and Youth Employment: A Cross-National Analysis,” *Industrial and Labor Relations Review* 57, no. 2 (2004). <http://www.federalreserve.gov/pubs/feds/2003/200323/200323pap.pdf>.
- ¹⁶ Gavan Conlon et al., “The Impact of the Minimum Wage on Young People: Final Report to the Low Pay Commission,” *London Economics* (January 2015). https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/520379/London_Economics_Report_Impact_of_the_minimum_wage_on_young_people_2015.pdf.
- ¹⁷ For instance, postsecondary school might be less attractive to older individuals as an alternative to employment. Additionally, older individuals might be far more qualified in employers’ eyes than their younger counterparts, even if they have only one or two extra years of experience.
- ¹⁸ The reforms involved two main changes. First, the eligibility threshold was lowered to 18 from 20. Second, the YMW was raised to 80 percent of the standard minimum from 60 percent. Combined, these reforms resulted in a 41 percent minimum-wage increase for 16- and 17-year-olds and a 69 percent increase for 18- and 19-year-olds. See Dean Hyslop and Steven Stillman, “Youth Minimum Wage Reform and the Labor Market,” New Zealand Treasury Working Paper 04/03, March 2004. <http://www.treasury.govt.nz/publications/research-policy/wvp/2004/04-03/twp04-03.pdf>.
- ¹⁹ These changes resulted in a 28 percent increase in the real youth minimum wage for 16- and 17-year olds. See Dean Hyslop and Steven Stillman, “The Impact of the 2008 Youth Minimum Wage Reform,” Labour and Immigration Research Centre, August 2011. <http://www.mbie.govt.nz/publications-research/publications/employment-and-skills/Impact%20of%20the%202008%20Youth%20Minimum%20Wage%20Reform.pdf/view> of the 2008 Youth Minimum Wage Reform.pdf.
- ²⁰ This figure is the same share of the current U.S. population that 4,500 to 9,000 was of the New Zealand population in 2008. This is higher than the two-year estimates for the comparable age groups yielded by my empirical approach in Section 8 below. In that framework, 16- and 17-year-old employment increases by 134,700 in the first year after a 61 percent average reduction in the effective minimum wage (assuming a market-clearing rate of \$4.25 or below and using the average of estimates). Therefore, my estimates are conservative compared with those in Hyslop and Stillman (2011).

- ²¹ Fair Labor Standards Amendments of 1989 (Sec. 6), H.R. 2710, 101st Cong. (1989). <https://www.govtrack.us/congress/bills/101/hr2710/text>.
- ²² See Michael Hurst, "Minimum Wage Rise Hurt Restaurants," *New York Times*, January 3, 1991. <http://www.nytimes.com/1991/01/15/opinion/l-minimum-wage-rise-hurt-restaurants-400091.html>.
- ²³ See n. 13 above.
- ²⁴ Small Business Job Protection Act of 1996 (Section 2105(c)), H.R. 3448, 104th Cong. (1996). <https://www.gpo.gov/fdsys/pkg/PLAW-104publ188/pdf/PLAW-104publ188.pdf>.
- ²⁵ "Minimum Wages for Tipped Employees," U.S. Department of Labor, January 1, 2016. <http://www.dol.gov/whd/state/tipped.htm>.
- ²⁶ "Full-Time Student Program," U.S. Department of Labor, accessed February 22, 2016. <http://webapps.dol.gov/elaws/whd/flsa/docs/ftsplink.asp>.
- ²⁷ "Student-Learner Program," U.S. Department of Labor, accessed February 22, 2016. <http://webapps.dol.gov/elaws/whd/flsa/docs/splink.asp>.
- ²⁸ Neumark and Wascher, "Employment Effects of Minimum and Subminimum Wages" (see n. 14 above).
- ²⁹ Sarah Flood et al., "Integrated Public Use Microdata Series, Current Population Survey: Version 4.0" (machine-readable database), University of Minnesota, 2015. <https://cps.ipums.org/cps>.
- ³⁰ Misreporting is a potential issue. Six individuals surveyed—representing a weighted 0.4 percent of the sample—reported a wage of less than \$2.13 an hour, the lowest allowable federal tipped minimum wage. Since five of these six individuals worked in the food-service industry, this raises the suspicion that the wages that they reported are not accurate. Other individuals' misreporting of their wages is a possibility, but there is no way to confirm this.
- ³¹ These figures include food-service workers. Excluding food-service workers, states that adopt the federal YMW have 2.9 percent of teenage workers in the "potential YMW" range, while states with no YMW law have 5.7 percent in this range.
- ³² See n. 7 above.
- ³³ Meer and West revised their study in 2015. See Jonathan Meer and Jeremy West, "Effects of the Minimum Wage on Employment Dynamics," *Journal of Human Resources* (August 2015). http://econweb.tamu.edu/jmeer/Meer_West_MinimumWage_JHR-final.pdf. However, the revised version did not include coefficients broken out by age group, so I used the earlier version.
- ³⁴ Figure 5. Estimates have been annualized. See Meer and West (2013).
- ³⁵ The age groups are: 16–17 years of age, 18, 19, 20–21, 22–24.
- ³⁶ See n. 29 above.
- ³⁷ Meer and West estimated age-based elasticities using the Quarterly Workforce Indicators, which break down employees into age bands of 14–18, 19–21, and 22–24. However, this analysis requires different age brackets, since the federal YMW uses a cutoff of 20 years of age. For such narrowly defined state-age groups, using Current Population Survey data was necessary.
- ³⁸ As well as shorter limits that apply in some states, such as California.
- ³⁹ E.g., Alabama adopts the federal YMW of \$4.25 per hour for anyone under 20, as well as the federal minimum wage of \$7.25 for anyone not covered by the YMW law. Under the low estimate, there is no reduction in the minimum wage for 16–19-year-olds. Under the high estimate, the reduction is calculated as the difference between the natural log of \$7.25 and the natural log of \$4.25, or 0.53. Therefore, under the low estimates for states that currently adopt the federal YMW, my proposed policy change has no effect on employment.
- ⁴⁰ According to my analysis of data from the Current Population Survey, there is very low utilization of the current federal YMW—implying that the time limit is a major deterrent. See Section 6 for additional explanation.
- ⁴¹ Clemens and Wither, "The Minimum Wage and the Great Recession: Evidence of Effects on the Employment and Income Trajectories of Low-Skilled Workers," (see n. 11 above).
- ⁴² For the low estimates, I assume that states with a YMW already below the wage rate analyzed do not raise their YMW rates. Since all starting YMW rates for the high estimates are \$7.25 or above, this assumption is not needed.
- ⁴³ Gavan Conlon et al., "An International Comparison of Apprentice Pay," *London Economics* (October 2013). https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/289425/London_Economics_Apprentice_Pay_FINAL.pdf.
- ⁴⁴ *Ibid.*
- ⁴⁵ Among the 15 states that already adopt the federal YMW of \$4.25 per hour, estimated job growth has a lower bound of zero. This is because the only change to existing YMW law in these states would be removing the 90-day employment limit; under the low estimate, such time limits are assumed not to matter.
- ⁴⁶ See Neumark and Wascher, "Employment Effects of Minimum and Subminimum Wages" (see n. 14 above).
- ⁴⁷ Some states had lower eligibility ages for their respective YMWs. Therefore, the estimated effects on the employment-population ratio of the 16–19-year-old age group are likely to be conservative.
- ⁴⁸ Defined in the paper as: "25 percent of the state minimum wage level, multiplied by state coverage (i.e., the proportion of workers covered by the state minimum wage, but not the FLSA), divided by the mean wage; for observations with minimum wage levels greater than the federal level, this is added to the smaller of either 25% of the state minimum wage level or the difference between the state and federal minimum wage level, multiplied by federal coverage, divided by the mean wage."

- ⁴⁹ The average civilian noninstitutional population for the study period was 15.4 million for 16–19-year-olds and 19.9 million for 20–24-year-olds. To find the net effect on job creation, I multiply the coefficient for each age group by the civilian noninstitutional population level to get the job creation and/or destruction numbers for each one-unit increase in the minimum wage–YMW gap. I then divide the job-destruction numbers for the 20–24-year-old age group by the job-creation numbers for the 16–19-year-old age group to find the ratio of jobs destroyed to jobs created. Finally, I apply this ratio to my estimated job-creation numbers from Section 8 to estimate the number of jobs destroyed for each specification of the Neumark and Wascher (1992) model, and subtract from the original job-creation number to arrive at the net job-creation number.
- ⁵⁰ Assuming a market-clearing wage of \$4.25 or below and using my average estimates of job creation.
- ⁵¹ See David Lagakos et al., “Life-Cycle Wage Growth Across Countries,” invited for submission at *Journal of Political Economy* (May 2016). <http://www.princeton.edu/~moll/LCWG.pdf>.
- ⁵² The maximum credit amount for a childless worker is \$506, whereas the maximum amount for families (single or married) with one child is \$3,373. For families with two children, the maximum credit amount is \$5,572. See “2016 EITC Income Limits, Maximum Credit Amounts and Tax Law Updates,” Internal Revenue Service, accessed May 10, 2015. <https://www.irs.gov/Credits-&Deductions/Individuals/Earned-Income-Tax-Credit/EITC-Income-Limits-Maximum-Credit-Amounts-Next-Year>.
- ⁵³ See David Neumark and William Wascher, “Does a Higher Minimum Wage Enhance the Effectiveness of the Earned Income Tax Credit?,” *Industrial and Labor Relations Review* 64, no. 4 (July 2011), article 5. <http://www.economics.uci.edu/~dneumark/MW%20EITC%20ILRR.pdf>.
- ⁵⁴ 29 U.S. Code Sec. 206(g). <https://www.law.cornell.edu/uscode/text/29/206>.
- ⁵⁵ “Minimum Wage Standard and Overtime Hours,” Alaska Division of Labor Standards and Safety, accessed February 22, 2016. <http://labor.alaska.gov/lss/whact.htm>.
- ⁵⁶ “Frequently Asked Questions About Minimum Wage,” Industrial Commission of Arizona, accessed February 22, 2016. http://www.ica.state.az.us/labor/Labor_MinWag_FAQs_English.aspx.
- ⁵⁷ Arkansas Code Sec. 010.14-102. <http://www.labor.ar.gov/divisions/Documents/May%2029%20MinWage%20Regs2.pdf>.
- ⁵⁸ “Minimum Wage,” State of California Department of Industrial Relations, accessed February 22, 2016. http://www.dir.ca.gov/dlse/faq_minimumwage.htm.
- ⁵⁹ “Colorado Minimum Wage Order Number 32,” Colorado Department of Labor and Employment, accessed February 22, 2016. <https://www.colorado.gov/pacific/sites/default/files/7%20CCR%201103-1%20Minimum%20Wage%20Order%2032.pdf>.
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Abstract

Unemployment among U.S. teenagers now stands at 16 percent. Raising the minimum wage, as many are advocating, will only make the situation worse.

Key Findings

1. There is a federal “youth minimum wage,” or YMW, under which workers up to age 20 may earn a wage of \$4.25 per hour for the first 90 days on the job; but not all states include similar provisions in their own labor codes, and as a result, the federal YMW is not applicable in most states.
2. Only 15 states have adopted the federal YMW; 17 other states and the District of Columbia have some sort of youth exemption with additional restrictions on top of the federal ones; and the remaining 18 states have no YMW in their labor codes, which means that the adult minimum wage in the state applies across the board.
3. If all states and the federal government adopted a YMW of \$4.25 for individuals aged 16–19, with no 90-day limit, the growth rate of employment for this group could increase by up to 8.9 percentage points, generating up to 456,200 additional jobs in the first year following enactment.