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The Minimum Wage and the Market for Low-Skilled Labor: Why a Decade Can Make a Difference

By *Jeff Clemens*

After decades of research, the minimum wage's effects on employment remain a matter of much dispute. Stagnation in low-skilled workers' wages has fueled substantial interest and debate among federal, state, and local policymakers. Hillary Clinton and Bernie Sanders have proposed increasing the federal minimum wage from \$7.25 per hour to \$12 and \$15, respectively. Many state minimum wage rates have risen modestly, while pathways to \$15 have been charted by several cities. At the same time, sluggishness at the labor market's lower end provides reason for pause.

The U.S. labor market continues its long, slow recovery following the Great Recession. For those with significant work experience and high education levels, the recovery following the Great Recession is almost complete. In 2015, the employment rate among those with at least some college education returned to within

2 percentage points of its level in 2006. By contrast, employment among teenagers and young high school dropouts remained 8 percentage points below pre-recession levels. Between 2006 and 2010, employment among these relatively low-skilled groups contracted by 2.5 million jobs. Less than one-third of these jobs have returned — and minimum wage increases are partially to blame.

Figure 1 illustrates young high school dropouts' labor market struggles. From 2006 to 2014, employment among dropouts ages 20 to 35 declined by 8 percentage points. The magnitude of this sustained employment change is remarkable when placed against almost any measuring stick. The figure further shows that this group's wages have been relatively stagnant in nominal terms. When the federal minimum wage rose

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About The Author

Jeff Clemens is a first sabbatical scholar at the Stanford Institute for Economic Policy Research. He comes to SIEPR from the University of California at San Diego, where he is an assistant professor of economics. His research interests include health care payment systems and the evolution of the U.S. labor market following the Great Recession. He has examined the U.S. Medicare program's effects on the care physicians provide to the elderly, on the development of new medical technologies, and on the payment models used by private health insurers. His research on the U.S. labor market has focused on the effects of recent minimum wage increases on the evolution of employment opportunities for individuals with low levels of experience and education. He is a faculty research fellow at the National Bureau of Economic Research.



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from \$5.15 in 2007 to \$7.25 in 2009, it affected a significant portion of this skill group's wage distribution. I refer to this significant and sustained relevance as the degree of the minimum wage increase's "bite."

In two recent papers (one joint with Michael Wither), I analyzed the extent to which this period's minimum wage increases contributed to the deep and prolonged decline in relatively low-skilled individuals' employment. To isolate the effects of minimum wage increases from other economic forces, I make use of the fact that this period's federal minimum wage increases had differential effects across states. Some states were fully bound to increase their minimum wage rates from \$5.15 to \$7.25. Other states, whose minimum wage rates were

above \$5.15 in 2006, experienced smaller increases. My estimates thus contrast employment changes in states that were fully bound by the federal increase with employment changes in states that were partially bound. I augment these comparisons with a variety of approaches to adjusting for differences in the Great Recession's underlying severity across states.

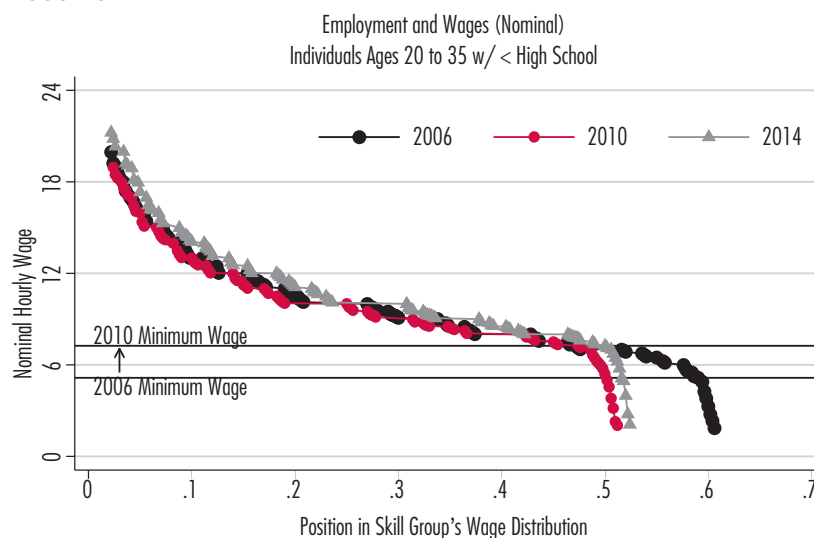
My analyses support the conclusion that this period's minimum wage increases had significant, negative effects on low-skilled individuals' employment. Figure 1 provides further evidence on this point. It shows that this period's minimum wage increases strongly bound the wage rates firms could offer the relatively unskilled. The people affected were not lifted to the new

minimum wage. Instead, they appear to have lost out on employment opportunities. This was true not only during the labor market's lows, but through 2014 as well. I estimate that this period's minimum wage increases reduced employment by 1 million jobs among people with low experience and low levels of education. While this estimate is quite large, it accounts for just two-fifths of the decline in employment among teenagers and young dropouts between 2006 and 2010.


The job losses I estimate are larger than one would infer from research on minimum wage increases enacted during earlier time periods. Consequently, the results raise the question of how we should expect the minimum wage's effects to vary with the conditions of the labor market and of the broader macro economy. Thinking in these terms is important for understanding what we can learn from historical episodes. Beyond this, it is essential for gauging the future applicability of past lessons learned.

Over the remainder of this brief, I contrast the conditions of the mid-1990s, when the federal minimum wage rose from \$4.25 to \$5.15, to the conditions of the late-2000s. I emphasize that key differences between these historical episodes include both cyclical and structural factors. While the relevance of cyclical factors should fade, structural factors retain relevance for future minimum wage increases. This suggests that the effects of future minimum wage increases will

Figure 1
Employment and Wages among Young High School Dropouts:
2006-2014



Source: Author's calculations using data from the Current Population Survey



fall between my estimates and those from past research.

How the economic environment can shape a minimum wage increase's effects

It is helpful to take a step back to consider what economic forces will tend to mediate the minimum wage's effects and why. I emphasize the relevance of inflation, productivity growth, and factors specific to employers' demand for the skill sets common among low-skilled workers.

A first relevant factor is inflation. The federal minimum wage and most state minimum wage rates are fixed in nominal terms. As the price level rises, the minimum wage's real value thus tends to erode. The overall inflation rate determines how quickly this erosion occurs. During episodes of low inflation, a fixed value of the minimum wage retains its bite and may thus shape firms' employment and investment decisions, over relatively long time horizons. Low inflation may make firms more inclined, for example, to respond to a minimum wage increase by substituting capital for low-skilled labor.

A second key factor involves economy-wide advances in productivity. The minimum wage's bite depends in large part on the value of what workers are able to produce. Productivity, or output per hour, is central to that value. When productivity rises, the minimum wage's bite declines. Periods of high productivity growth will thus be periods during which a

fixed minimum wage's impact declines rapidly. Like times of low inflation, periods of low productivity growth will be periods during which a fixed minimum wage retains its bite for many years.

A third set of factors involves employers' demand for the skills that are most common among relatively low-skilled workers. Technological change, for example, may either complement or substitute for these workers' skills. International trade similarly shapes demand for domestic labor; importing and offshoring provide alternatives to domestic labor as links in the supply chains that bring goods to American consumers. I save a fuller discussion of trade and technology, which can have long-run, structural implications, for later.

Comparing the minimum wage increases of the mid-1990s and late-2000s

Between early 1996 and late 1997, the federal minimum wage rose from \$4.25 to \$5.15, or 21 percent. Between early 2007 and late 2009 it rose from \$5.15 to \$7.25, or 41 percent. In this section, I catalog differences across these periods in inflation, productivity, and the demand for low-skilled workers' skill sets. The dispositions of these factors differed markedly across these historical episodes. The data, which are summarized in Table 1, suggest that the most recent minimum wage increases should, in retrospect, have been expected to have more significant effects on low-skilled

workers' employment than increases from earlier periods.

By historical standards, inflation has been low since the late-2000s increases in the federal minimum wage. From 2006 to 2014, growth in the all-items Consumer Price Index (CPI) averaged 1.8 percent. Core CPI, meaning the CPI excluding its relatively volatile food and energy components, averaged 1.9 percent growth over this period. By contrast, both the all-items and core CPI averaged 2.4 percent growth between 1994 and 2002. Cumulatively, these numbers imply that the minimum wage's real value eroded 5 percent less over the more recent period than over the earlier period.

When comparing the mid-1990s with the late-2000s, differences in average productivity growth were more dramatic than differences in inflation. From 2006 to 2014, growth in overall output per hour, as estimated by the Bureau of Labor Statistics, averaged 1.3 percent. By contrast, productivity growth averaged 2.7 percent between 1994 and 2002. Cumulatively, the average worker's output per hour rose by 13 percent more from 1994 through 2002 than from 2006 through 2014.

During the 1990s, productivity gains were shared broadly across workers with high and low education levels. Research by David Autor, Lawrence Katz, and Melissa Kearney, for example, documents that the real wages of high school dropouts grew only modestly more slowly

than the wages of more highly educated people from the mid-1990s through the early 2000s. More recently this has not been the case. Real wages appear, if anything, to have declined among those with low experience and education levels while rising modestly among other workers.

The contrast between the 1990s and 2000s can be seen quite directly by comparing

Figure 2 with Figure 1. Both figures present employment and wage data for high school dropouts between 20 and 35 years old. Figure 2 shows these data for 1994, 1998, and 2002 while Figure 1 does so for 2006, 2010, and 2014. The effects of higher inflation and rapid, broadly shared, productivity growth are quite readily apparent. While high school dropouts' wages were

stagnant during the late-2000s, they rose significantly during the 1990s. Consequently, the minimum wage's mid-1990s rise affected the wage rates of far fewer workers than one might have initially imagined. By 2002, the wages for all but a small portion of this skill group's wage distribution exceeded the \$5.15 federal minimum by more than 50 cents.

Looking ahead

Policymakers do not share researchers' luxury of dwelling on the past. When debating minimum wage increases, the key question they face is how we should expect the minimum wage's effects to unfold going forward. This brief considers several economic factors that may mediate the minimum wage's impacts. I showed why these factors made the minimum wage's effects on employment more substantial during the late-2000s than during the mid-1990s. I conclude by considering what these historical lessons may and may not tell us about the future.

Following the minimum wage increases of the late-2000s, inflation was low and productivity growth was weak. The Federal Reserve's 2 percent target for core inflation would lead future price inflation to erode the minimum wage's bite at rates modestly faster than those that prevailed following the late-2000s federal increases. Productivity growth's long-run average lies between the 2.7 and 1.3 percent averages over the time periods described in Table 1.

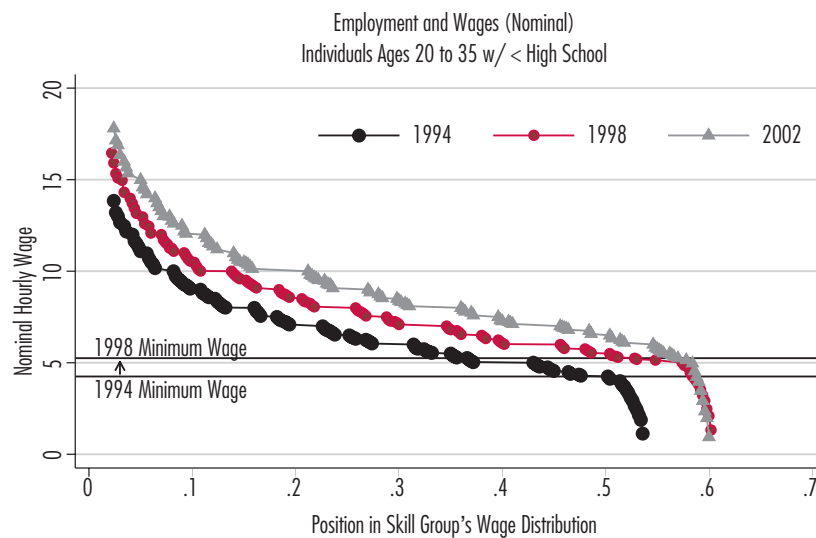
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Table 1
Macroeconomic Variables Relevant to the Minimum Wage's Bite

	1994 to 2002	2006 to 2014
Average growth in the All-Items CPI	2.4	1.9
Average growth in the Core CPI	2.4	1.8
Average productivity growth	2.7	1.3

Source: Author's Calculations using data from the Bureau of Labor Statistics.

Figure 2
Employment and Wages among Young High School Dropouts: 1994-2002



Source: Author's calculations using data from the Current Population Survey

Future productivity growth is likely a source of much greater uncertainty than core inflation, in particular over short- and medium-run time horizons.

By contrast with short-run inflation and productivity growth, the effects of technology and trade on the demand for low-skilled workers' skill sets are relatively permanent. Recent research by David Autor, David Dorn, and Gordon Hanson, for example, shows that expansions in trade with China have had surprisingly large and long-lasting effects. They find that labor markets that compete most directly with Chinese imports have seen slow wage growth and an erosion of employment opportunities. Adjustments to these shocks have taken longer than many economists might previously have predicted. While China's growth may wax and wane, its prominent position on global markets will remain. India may be similarly poised for a rise in global prominence. The competitive pressures that trade places on the returns to low-skilled workers' skill sets thus appear here to stay. The same can be said for the effects of broad-based technological change.

Designing policies to improve economic prospects for low-skilled workers requires understanding the economic forces underlying their current outcomes. In recent decades,

the evolution of trade and technology has reduced employers' demand for many low-skilled individuals' skills. This suggests that effective policy responses must aid in either improving upon or directly subsidizing their skills. Their economic prospects might be better bolstered by a combination of tax credits, skills training, and education than through minimum wage regulation. The Earned Income Tax Credit's (EITC) record of increasing employment and supplementing incomes, as documented by Hilary Hoynes and other researchers, argues for maintaining its prominent place in fighting poverty.

Low-skilled individuals' employment has proved fragile in recent years. Substantial minimum wage increases risk exacerbating this fragility by making low-skilled individuals more expensive for firms to hire. Policies like the EITC, which supplements incomes without imposing costs on employers, may have superior prospects for attaining short- and long-run poverty reduction goals.

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