The Minimum Wage and the Great Recession

Evidence of Effects on the Employment and Income Trajectories of Low-Skilled Workers

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Between July 23, 2007, and July 24, 2009, the federal minimum wage rose from $5.15 to $7.25 per hour. Over a similar time period, the employment-to-population ratio declined by 4 percentage points among adults aged 25 to 54 and by 8 percentage points among those aged 15 to 24. Both ratios recovered slowly following the recession's conclusion, and young-adult employment remains well below its pre-recession peak. The empirical literature is quite far from consensus, however, regarding the minimum wage's potential contribution to these employment changes (Card and Krueger, 1995; Neumark and Wascher, 2008; Dube, Lester, and Reich, 2010; Neumark, Salas, and Wascher, 2013; Meer and West, 2013). In our research, we analyze the minimum wage's effects on the employment and income trajectories of low-skilled workers during the Great Recession and subsequent recovery.

Our analysis harnesses the fact that the 2007 through 2009 increases in the federal minimum wage were differentially binding across states. Between December 2007 and July 2009, the effective minimum wage rose by $1.31 in the states we designate as "bound" and by $0.43 in the states

we designate as "unbound." Of the $0.88 differential, $0.58 took effect on July 24, 2009. We analyze the effects of these differentially binding minimum wage increases using monthly, individual-level panel data from the 2008 panel of the Survey of Income and Program Participation (SIPP). The SIPP allows us to use 12 months of individual-level wage data, from August 2008 through July 2009, to further divide low-skilled individuals into those whose wages were directly targeted by the new federal minimum and those whose wages were moderately above. These rich baseline data yield a number of advantages over the literature's standard approaches.

Our approach's main advantage is its capacity to describe the minimum wage's effects on a broad population of targeted workers. Past work focuses primarily on the minimum wage's effects on particular demographic groups, such as teenagers (Card, 1992a, b; Currie and Fallick, 1996), and/or specific industries, such as food service and retail (Katz and Krueger, 1992; Card and Krueger, 1994; Kim and Taylor, 1995; Dube, Lester, and Reich, 2010; Addison, Blackburn, and Cotti, 2013; Giuliano, 2013). While minimum and sub-minimum wage workers are disproportion-

ately represented among these groups, both are selected snapshots of the relevant population. Furthermore, it is primarily low-skilled adults, rather than teenage dependents, who are the intended beneficiaries of anti-poverty efforts (Burkhauser and Sabia, 2007; Sabia and Burkhauser, 2010). Assessing the minimum wage from an anti-poverty perspective thus requires characterizing its effects on the broader population of low-skilled workers, which we are able to do.

We begin by assessing the extent to which minimum wage increases affected the wage distributions of low-skilled workers. Among workers with average baseline wages less than $7.50 per hour, the probability of reporting a wage between $5.15 and $7.25 declined substantially. We find that the wage distributions of low-skilled workers in bound and unbound states fully converge along this dimension. Further, we estimate that the minimum wage's bite on our target group's wage distribution is nearly twice its bite for a comparison sample of food service workers and teenagers.

We next estimate the minimum wage's effects on employment. We find that increases in the minimum wage significantly reduced the employment of low-skilled workers. By the second year following the $7.25 minimum's implementation, we estimate that targeted workers' employment rates had fallen by 6 percentage points (8 percent) more in bound states than in unbound states.

We further analyze a sample of teenagers and food service workers to compare our approach with approaches commonly used in the literature. For this sample, we estimate an employment decline of just under 4 percentage points. The estimated employment effects thus scale roughly in proportion to the minimum wage's bite on these groups' wage distributions. All else equal, Sabia, Burkhauser, and Hansen (2012) note that estimates of the minimum wage's effects on employment will scale with the extent to which an analysis sample contains unaffected workers. Their insight thus points to a partial line of reconciliation between the disemployment effects we observe and the statistical null results found in some of the recent literature. The magnitude of our estimated employment effects also likely reflects the setting we analyze, namely the Great Recession and subsequent sluggish recovery.

The primary threat to our estimation framework is the possibility that low-skilled workers in the bound and unbound states were differentially affected by the Great Recession. We show that the housing crisis was more severe in unbound states, potentially biasing our estimates towards zero. In our baseline specification, we control directly for the severity of the crisis. As noted above, our use of monthly, individual-level panel data enables us to more systematically construct within-state control groups with baseline wages only moderately higher than the new federal minimum. Our initial results are robust to netting out changes in the employment of these slightly higher-skilled workers.

In addition to reducing employment, we find that binding minimum wage increases increased the likelihood that targeted individuals work without pay (by roughly 2 percentage points). This novel effect is concentrated among individuals with at least some college education. We take this as suggestive that such workers' entry level jobs are relatively easy to post as internships. For low-skilled, low-education workers, the entire change in the probability of having no earnings comes through unemployment.

We next estimate the effects of binding minimum wage increases on low-skilled workers' incomes and income trajectories. Our data provide a unique opportunity to investigate such effects, as the SIPP's monthly, individual-level panel extends for 3 years following the July 2009 increase in the federal minimum. To the best of our knowledge, this enables us to provide the first direct estimates of the minimum wage's effects on medium-run economic mobility. Given longstanding and widespread concern over developments in inequality (Katz and Murphy, 1992; Autor, Katz, and Kearney, 2008; Kopczuk, Saez, and Song, 2010), such effects may be of significant interest.

We find that this period's binding minimum wage increases reduced low-skilled individuals' average monthly incomes. Relative to low-skilled workers in unbound states, targeted workers' average incomes fell by $100 over the first year and by an additional $50 over the following 2 years. While surprising at first glance, we show that the short-run estimate follows directly from our estimated effects on employment and the likelihood of working without pay. The medium-run estimate reflects additional contributions from lost wage growth associated with lost experience. Because most minimum wage workers are on the steep portion of the wage-experience profile (Murphy and Welch, 1990; Smith and Vavrichek, 1992), this effect can be substantial. We directly estimate, for example, that targeted workers experienced a 5 percentage point decline in their medium-run probability of reaching earnings greater than $1500 per month. As with previous results, these estimates are robust to netting out the experience of workers with average baseline wages just above the new federal minimum. As in Kahn (2010) and Oreopoulos, von Wachter, and Heisz's (2012)

analyses of the effects of graduating during recessions, we thus find that early career opportunities have persistent effects.

We conclude by assessing our estimates' implications for the effects of this period's minimum wage increases on aggregate employment. During the last part of the previous decade, the average effective minimum wage rose by nearly 30 percent across the United States. Our best estimate is that these minimum wage increases reduced the employment-to-population ratio of working-age adults by 0.7 percentage points. This accounts for 14 percent of the total decline over the relevant time period.

NOTE

This research brief is based on 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," November 24, 2014, http://econweb. ucsd.edu/-mwither/pdfs/Effects%20of%20Min%20Wage%20 on%20Wages%20Employment%20and%20Earnings.pdf; all references are provided therein.