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Minimum Wages and Poverty: Will a $9.50 Federal Minimum Wage Really Help the Working Poor?

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Using data drawn from the March Current Population Survey, we find that state and federal minimum wage increases between 2003 and 2007 had no effect on state poverty rates. When we then simulate the effects of a proposed federal minimum wage increase from $7.25 to $9.50 per hour, we find that such an increase will be even more poorly targeted to the working poor than was the last federal increase from $5.15 to $7.25 per hour. Assuming no negative employment effects, only 11.3% of workers who will gain live in poor households, compared to 15.8% from the last increase. When we allow for negative employment effects, we find that the working poor face a disproportionate share of the job losses. Our results suggest that raising the federal minimum wage continues to be an inadequate way to help the working poor.

JEL Classification: J21, J31, J38

1. Introduction

Proposals to increase the minimum wage are politically popular because they are widely seen as an effective way to help the working poor (AP-AOL 2006). Former President Bill Clinton captured this majority view in his statement of support for an increase in the federal minimum wage when he said: "It's time to honor and reward people who work hard and play by the rules….No one who works full time and has children should be poor anymore" (Clinton and Gore 1992). The goal of helping the working poor was also an important motivation behind the most recent legislation to increase the federal minimum wage from $5.15 to $7.25 per hour in 2007, and it remains a key rationale for Senate Bill 2514, the Standing with Minimum Wage Earners Act of 2007, which would increase the federal minimum wage yet again from $7.25 to $9.50 per hour.[1]

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[1] Raising the federal minimum wage to $9.50 per hour has support among leading Democrats, including President Barack Obama (BarackObama.com 2008); the late Senator Edward Kennedy (Zappone 2007); former Senator John Edwards (Montanaro 2007); and Secretary of State Hillary Clinton (Zappone 2007), who as a senator introduced S.2514 in December 2007.

While reducing poverty among the working poor is a laudable policy goal, the evidence suggests that minimum wage increases have thus far provided little more than symbolic support to this population (Card and Krueger 1995; Neumark and Wascher 2002; Gundersen and Ziliak 2004; Burkhauser and Sabia 2007; Leigh 2007; Sabia 2008). Several explanations have been offered for this finding. Card and Krueger (1995) emphasize that minimum wages fail to reduce poverty because many poor Americans do not work. Others have argued that even among the working poor, the relationship between earning a low hourly wage rate and living in poverty is weak and has become weaker over time (Stigler 1946; Burkhauser, Couch, and Glenn 1996; Burkhauser and Sabia 2007). Moreover, even among affected workers, there is strong evidence that increases in the minimum wage reduce the employment of low-skilled workers (Neumark and Wascher 2008). While an increase in the minimum wage will lift out of poverty the families of some low-skilled workers who remain employed, other low-skilled workers will lose their jobs or have their hours significantly cut, reducing their income and dropping their families into poverty (Neumark and Wascher 2002; Neumark, Schweitzer, and Wascher 2004, 2005; Sabia 2008).

Despite evidence on the ineffectiveness of past increases, a new set of large state and federal minimum wage increases was initiated between 2003 and 2007, all with the promise of helping the working poor.[2] The newly proposed federal minimum wage increase to $9.50 per hour is also being justified as an important anti-poverty tool. Our article provides a first look at the effectiveness of these twenty-first century state and federal minimum wage increases in reducing poverty and compares the target efficiency of raising the federal minimum wage to $9.50 per hour with that of prior increases. Moreover, our work augments the static analysis of Burkhauser and Sabia (2007) by accounting for the likely *behavioral effects* of a new federal minimum wage increase in our simulations of its distributional consequences. Further, because there continues to be controversy over the size of employment effects of minimum wage increases, we estimate a ''break-even'' elasticity value where the proposed minimum wage hike will produce no net benefits for workers.

Using data drawn from the March Current Population Survey (CPS), we find no evidence that minimum wage increases between 2003 and 2007 lowered state poverty rates. Moreover, we find that the newly proposed federal minimum wage increase from $7.25 to $9.50 per hour, like the last increase from $5.15 to $7.25 per hour, is not well targeted to the working poor. Only 11.3% of workers who will gain from an increase in the federal minimum wage to $9.50 per hour live in poor households, an even smaller share than was the case with the last federal minimum wage increase (15.8%). Of those who will gain, 63.2% are second or third earners living in households with incomes twice the poverty line, and 42.3% live in households with incomes three times the poverty line, well above $50,233, the income of the median household in 2007.[3]

With an average employment elasticity of −0.6 for minimum wage workers aged 16–29 without a high school diploma and an elasticity of −0.2 for other minimum wage workers, we estimate that nearly 1.3 million jobs will be lost if the federal minimum wage is increased to $9.50 per hour, including 168,000 jobs currently held by the working poor. We estimate that

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[2] Between 2003 and 2007, 28 states raised their minimum wage above the federal level, and in 2007, the federal minimum wage rose from $5.15 to $5.85 per hour. For examples of proponents of these hikes, see Bernstein (2004), Hindery (2004), Kennedy (2005), Clinton (2006), Fiscal Policies Institute (2006), Wolfson (2006), and Bernstein (2007).

[3] In 2007, the poverty line for a family of four was $20,650. Three times the poverty threshold for a family this size is $61,950, well above the median household income of $50,233 in 2007 (DeNavas-Walt, Proctor, and Smith 2008).

average employment elasticities greater (in absolute value) than −0.86 will cause net monthly earnings *losses* to the set of low-skilled workers who are affected by this proposed minimum wage legislation. We conclude that further increases in the minimum wage will do little to reduce poverty and are a poor substitute for further expansions in the federal Earned Income Tax Credit (EITC) program as a mechanism for reducing poverty.

2. Literature Review

Poverty Effects of Minimum Wage Increases

Several recent studies have examined the income and poverty effects of minimum wage increases (see, for example, Card and Krueger 1995; Addison and Blackburn 1999; Neumark and Wascher 2002; Gundersen and Ziliak 2004; Neumark, Schweitzer, and Wascher 2004, 2005; Burkhauser and Sabia 2007; Sabia 2008), and all but one have found that past minimum wage hikes had no effect on poverty.[4] These studies have generally taken one of two approaches. The first approach uses matched CPS data and examines family income changes caused by minimum wage increases (Neumark and Wascher 2002; Neumark, Schweitzer, and Wascher 2004, 2005). These studies find that some low-skilled workers living in poor families who remain employed see their incomes rise and move out of poverty when the minimum wage increases. However, other low-skilled workers lose their jobs or have their hours substantially reduced as a result of minimum wage hikes, causing income losses and increased poverty. On net, Neumark and Wascher (2002) find that the families of low-skilled workers are no better off and may be made worse off by minimum wage hikes. Sabia (2008) finds a similar result for less-educated single mothers.

A second approach, taken by Card and Krueger (1995) and Burkhauser and Sabia (2007), estimates the effect of state minimum wage increases on state poverty rates. These studies also find no evidence that past minimum wage increases have significantly reduced poverty either among the families of all individuals or among the families of workers.

Employment and Hours Worked Effects of Minimum Wage Increases

Another explanation for the ineffectiveness of past minimum wage increases in reducing poverty is theory based and focuses on their adverse labor demand effects. Neoclassical economic theory suggests that minimum wage increases reduce the demand for low-skilled labor, thus reducing employment and hours worked (see Stigler 1946). Much of the literature examining the employment effects of minimum wage increases has focused on low-skilled workers, usually teenagers and high school dropouts, or on workers in low-skilled industries because these populations are more likely to be affected by such increases.

Neumark and Wascher (2007) review over 90 studies published since the iconoclastic Card and Krueger (1994, 1995) studies of the mid-1990s and conclude that there is overwhelming evidence that the least-skilled workers experience the strongest disemployment effects from

[4] The one exception is Addison and Blackburn (1999), who find that minimum wage increases reduce poverty among junior high school dropouts. However, as Neumark and Wascher (2008) note, junior high school dropouts are older and unlikely to have small children; whereas, most anti-poverty efforts focus on families with younger children.

minimum wage increases (see, for example, Neumark and Wascher 1992; Williams 1993; Deere, Murphy, and Welch 1995; Currie and Fallick 1996; Abowd et al. 1999; Partridge and Partridge 1999; Burkhauser, Couch, and Wittenburg 2000a, b; Couch and Wittenburg 2001; Neumark 2001; Neumark and Wascher 2002, 2004; Campolieti, Fang, and Gunderson 2005; Campolieti, Gunderson, and Riddell 2006; Sabia 2008, 2009a, b). Median employment elasticities range from -0.1 to -0.3, though a few studies have found employment elasticities that are larger (between -0.6 and -0.9) for less-educated single mothers (Sabia 2008) and younger high school dropouts (Burkhauser, Couch, and Wittenberg 2000b).

Recently, however, articles by Dube, Lester, and Reich (2008) and Addison, Blackburn, and Cotti (2008) have renewed this debate. These authors argue that the identification strategy used in many national panel studies is flawed due to unmeasured low-skilled employment trends across states. To better ensure common underlying trends across treatment and comparison states, they use variation in minimum wages in contiguous counties across borders for identification, finding no evidence of adverse employment effects across low-skilled sectors. But this finding is far from definitive. Other studies that have examined low-skilled workers across sectors have found evidence of adverse employment and welfare take-up effects even after controlling for unmeasured state trends (Page, Spetz, and Millar 2005; Sabia 2008; Sabia and Burkhauser 2008).

Examining only employment effects, however, may mask full labor demand effects. Firms may respond to minimum wage hikes by (i) reducing both employment and average hours worked by employed workers or (ii) increasing hours of retained workers to compensate for reduced employment (Couch and Wittenburg 2001; Neumark and Wascher 2007). The evidence on hours worked effects is mixed. Couch and Wittenburg (2001) and Sabia (2009b) find some evidence that employment effects alone understate full labor demand effects, but Zavodny (2000), Sabia (2008), and Sabia and Burkhauser (2008) find little evidence of conditional hours worked effects.

Simulations of Who Gains from Minimum Wage Increases

While lower labor force participation rates among the poor (Card and Krueger 1995) and adverse labor demand effects of minimum wages (Neumark and Wascher 2002; Neumark, Schweitzer, and Wascher 2004, 2005; Sabia 2008) may help to explain the ineffectiveness of past minimum wage increases in reducing poverty, another explanation may be the poor target efficiency of the minimum wage. A series of studies by Burkhauser and Finegan (1989); Burkhauser, Couch, and Glenn (1996); Burkhauser and Harrison (1999); and Burkhauser and Sabia (2007) have avoided the controversies surrounding the magnitude of employment and hours worked effects of past minimum wage increases and have instead focused on the target efficiency of proposed increases. These studies assume no behavioral effects of the minimum wage, giving proposed minimum wage increases their best chance to benefit affected workers. But even under the optimistic assumption of no employment or hours worked effects, the authors find that workers living in poor households received few of the benefits of past minimum wage increases because their hourly wages were already greater than the proposed state or federal minimum wages. Instead, most of the benefits went to second or third earners living in households well above the poverty line.

One important critique of these simulations is that they overstate the benefits of minimum wages to the working poor because they ignore employment effects. As the authors note,

because they assume zero employment elasticities, their simulations are likely to be upper-bound estimates of the benefits to workers (Burkhauser and Sabia 2007). And, in a recent case study of New York State, Sabia and Burkhauser (2008) find that when they account for the adverse labor demand effects of the minimum wage, workers in poor households receive an even smaller share of a shrinking pie of additional net wage earnings.

This article integrates and contributes to previous studies in the literature in several ways. First, we extend the work of Burkhauser and Sabia (2007) by estimating the effects of minimum wage increases from 2003 to 2007 on state poverty rates. No studies in the literature of which we are aware have estimated the effect of minimum wages on state poverty rates in the mid- to late 2000s, a period providing a rich new source of state-level identifying variation: 28 states increased their minimum wages above the federal level, and the federal minimum wage rose from $5.15 to $5.85 per hour. Second, we are the first to examine the target efficiency of the Standing with Minimum Wage Earners Act of 2007, which would raise the federal minimum wage from $7.25 to $9.50 per hour, and compare its target efficiency to the last federal minimum wage increase from $5.15 to $7.25 per hour. Finally, unlike previous studies' simulations of federal minimum wage increases that have assumed no behavioral effects of the minimum wage, we simulate the distribution of benefits from the proposed minimum wage increase using a range of employment elasticities estimated in the literature. We use these elasticities and workers' wage rates to estimate individual-specific probabilities of job loss and expected net benefits from the newly proposed minimum wage increase.

3. Data and Estimation Strategy

Our analysis uses data drawn from the outgoing rotation groups of the March CPS. We use the March CPS because it contains information not only on current employment and wage rates but also on household income and household size, which we use, together with household size–specific poverty thresholds, to calculate an income-to-needs ratio for each worker.[5] For example, in 2007, the poverty threshold for a household size of four was $20,650. Thus, a household of four with total household income of $41,300 would have an income-to-needs ratio of 2.0. Workers in households with income-to-needs ratios less than 1.0 are classified as "poor," and those with income-to-needs ratios between 1.0 and 1.5 are defined as "near poor."

Information on workers' individual wage rates and hours worked comes from the outgoing rotation group and are measured in the last week. For workers who report being paid hourly, their wage rate is directly reported from their current job. For those who are not paid hourly, wage rates are calculated as the ratio of weekly earnings to weekly hours in the past week. Information on household income comes from the previous calendar year, so mapping individual wages to the poverty status of the household requires the assumption that the income-to-needs ratio of the household was the same in 2007 as it was in March 2008 (see Burkhauser, Couch, and Glenn [1996] and Burkhauser and Sabia [2007] for a discussion of this issue).

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[5] These data also contain information on family income and family size, which can be used to construct poverty measures using the family unit, as has been done in the previous literature (Card and Krueger 1995; Burkhauser and Sabia 2007).

Poverty Effects of Minimum Wage Increases

To examine the effect of past minimum wage increases on state poverty rates, we pool data from the March 2004 through March 2008 CPS and estimate a fixed effects model similar to Card and Krueger (1995) and Burkhauser and Sabia (2007). To be consistent with this poverty literature, we follow these authors and use the family unit to calculate poverty status and estimate the following model:[6]

$$P_{st} = \alpha + \beta MW_{st} + X_{st}^{'}\delta + \theta_s + \tau_t + \varepsilon_{ist}, \quad (1)$$

where P_{st} is the natural log of the poverty rate in state s at time t; MW_{st} is the natural log of the higher of the state or federal minimum wage;[7] and X_{st} is a vector of state-specific, time-varying socioeconomic controls, including the unemployment rate for prime-age males aged 25–54, the average adult wage for working individuals aged 25–54, the share of older (aged 55–64) and younger (aged 16–24) individuals in the state population, a time-invariant state effect (θ_s), and a state-invariant time effect (τ_t). Because family income is measured in the previous year, the sample used in the regression corresponds to calendar years 2003–2007. The key parameter of interest in this model is β_1. Thus, much of the identifying variation is coming from state minimum wage increases.[8]

Simulations of Minimum Wage Increases

To simulate the employment and distributional consequences of the newly proposed federal minimum wage increase as well as the last federal minimum wage hike from \$5.15 to \$7.25 per hour,[9] we follow Baicker and Levy (2008), Burkhauser and Simon (2008), and Yelowitz (2008), who use estimates of employment elasticities from the minimum wage literature to simulate the effect of pay-or-play health insurance reforms. We use the household unit to link workers to the poverty status of their households, consistent with the income distribution literature and Burkhauser and Sabia (2007). This simulation approach uses the March CPS to identify the set of workers who are affected by a policy change. For the last federal minimum wage increase, we define these workers as those earning hourly wages between \$5.00 and \$7.24 per hour in the March 2007 CPS, and for the new federal minimum wage increase, these are workers earning between \$5.70 and \$9.49 per hour in the March 2008 CPS.[10]

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[6] The results are not sensitive to using the household unit to calculate poverty.

[7] If multiple minimum wages prevailed during the year, this variable is coded as the average minimum wage that prevailed during the year, weighted by the share of the year each wage was in effect.

[8] During this period, the following 28 states raised their minimum wage: Arizona, Arkansas, California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Hawaii, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Nevada, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, Rhode Island, Vermont, Washington, and Wisconsin. The federal minimum wage rose from \$5.15 to \$5.85 per hour on July 24, 2007.

[9] The federal minimum wage rose again from \$5.85 to \$6.55 per hour on July 24, 2008, and increased again to \$7.25 per hour in July 2009.

[10] As discussed below, the federal minimum wage in March 2008 was \$5.85 per hour. Thus, we are taking a conservative approach by assuming that workers earning hourly wages between \$5.70 and \$7.24 will be earning \$7.25 at the time the new minimum wage plan is considered. As in past simulations (see Burkhauser and Finegan 1989; Burkhauser, Couch, and Glenn 1996; Burkhauser and Sabia 2007), we assume that workers earning hourly wages less than \$0.15 below the current federal minimum wage are in the "uncovered" sector. Theoretically, workers earning wages greater than \$9.50 per hour could benefit from minimum wage increases if there are wage spillovers. But there is little empirical evidence that such spillovers exist (see, for example, Sabia and Burkhauser 2008).

For each simulation, we calculate an individual-specific probability of job loss:

$$p_i = \frac{(FMW - w_i)}{w_i}|e_i|, \tag{2}$$

where FMW is the federal minimum wage, w_i is worker i's current hourly wage rate, and e is the estimated employment elasticity that applies to worker i. The true employment elasticity that should be applied to each minimum wage worker is unknown. We use a range of elasticities for minimum wage workers from zero (Card and Krueger 1995; Addison, Blackburn, and Cotti 2008; Dube, Lester, and Reich 2008) to "consensus" elasticities of −0.1 to −0.3 (Neumark and Wascher 2007) to upper-bound estimates of −0.6 to −0.9 (Burkhauser, Couch, and Glenn 2000b; Sabia 2008; Sabia and Burkhauser 2008). Thus, the distribution of job loss by income-to-needs ratio of households will depend on (i) the share of minimum wage workers in each income-to-needs category, (ii) the magnitude of the gap between the worker's current wage and the new federal minimum wage, and (iii) the elasticity that should be applied to each worker. Total job loss is calculated by summing the product of the individual probabilities of job loss and the population weights attached to each worker.

To simulate the expected net benefits of the minimum wage increase to each minimum wage worker, we calculate expected monthly net benefits for each worker as follows:

$$EB_i = \left(1 - \frac{(FMW - w_i)}{w_i}|e_i|\right)(FMW - w_i)H_i \; - \; \left(\frac{(FMW - w_i)}{w_i}|e_i|\right)(w_i H_i - EUI_i), \tag{3}$$

where H_i is the usual monthly hours worked by worker i and EUI_i is the expected unemployment insurance benefits received by worker i. The first term on the right-hand side of Equation 3 is the expected monthly earnings gains from a federal minimum wage hike from a retained job. The second term on the right-hand side is the expected earnings losses from a job loss due to the minimum wage increase. Thus, three types of minimum wage workers are described in Equation 3: (i) those who keep their jobs, retain their hours, and get a wage boost from a minimum wage increase; (ii) those who become unemployed due to a minimum wage increase and lose their entire monthly earnings; and (iii) those who become unemployed due to a minimum wage increase and lose their monthly earnings but have some share of their earnings replaced by unemployment insurance for a portion of the month. We calculate total net benefits for workers in each income-to-needs category by aggregating individual net benefits using earnings weights.

A number of simplifying assumptions are needed to interpret the expression in Equation 3 as the expected net benefit to minimum wage workers. First, we assume that there are no wage spillovers to workers earning more than the federal minimum wage. This assumption is reasonable given that we find no evidence that minimum wage increases have important spillover effects (Burkhauser and Sabia 2007; Sabia 2008; Sabia and Burkhauser 2008). Second, as in the simulation of job loss, we must make assumptions about the employment elasticities that are applied to minimum wage workers. We apply a broad range of employment elasticities from the literature to estimate employment and distributional effects, and in our preferred models we assign different elasticities to different types of minimum wage workers. Third, we assume that minimum wages have no effect on hours worked by retained workers. Existing estimates in the literature tend to point to either no effects or only small negative effects (see, for example, Zavodny 2000; Sabia and Burkhauser 2008; Sabia 2009b); thus, we conservatively assume no adverse hours worked effects. Finally, we assume that if a worker is laid off, his

monthly earnings are zero, but he may receive unemployment benefits. We calculate expected monthly unemployment insurance payments as follows:

$$E\,UI_{is} = \theta r_s w_i \alpha H_i, \tag{4}$$

where θ is the probability of unemployment insurance uptake, r_s is a state-specific measure of earnings replacement rates for workers, and α is the share of the month during which the unemployed worker receives benefits.

First, because the majority of unemployed workers do not apply for unemployment insurance (see Vroman 1991 for a discussion), we include the parameter θ and assume that it takes on a value less than 1. We experimented with a number of estimates of θ but use the national average in 2000, 0.35 (Wenger 2001).[11] Second, we generated state-specific estimates of earnings replacement rates (r_s). Wenger (2001) reports average unemployment insurance (UI) benefits received by unemployed minimum wage workers. Given that there is a fair amount of heterogeneity in earnings replacements across states, we use this information, along with state minimum wage levels, to calculate the implicit earnings replacement rate for each state. The most generous state in terms of replacing minimum wage earnings in our sample is Kentucky (0.68), and the least generous is North Dakota (0.41). Finally, unemployed workers do not receive unemployment insurance benefits immediately following a layoff; there is generally, at minimum, a one- to two-week waiting period (Wenger 2001). We assume that unemployed workers receive benefits for three weeks in their first unemployed month, which allows a one-and-a-half week delay until benefits.[12]

There are, of course, limitations to these simplifying assumptions. For instance, if consumers face higher prices as a result of higher costs of producing goods and services (Aaronson and French 2006, 2007) or if our employment estimates are underestimated due to a failure to capture full lagged effects of minimum wage increases (Baker, Benjamin, and Stranger 1999; Burkhauser, Couch, and Wittenburg 2000a; Neumark and Wascher 2004; Page, Spetz, and Millar 2005; Campolieti, Gunderson, and Riddell 2006), our estimates will overstate the true benefits of the minimum wage. Moreover, if there are heterogeneous effects of the minimum wage by poverty status or if unemployment insurance uptake rates differ by poverty status, our simulations may mask other distributional effects. Finally, while we assume that some unemployed workers will have a share of their earnings losses replaced by government-mandated unemployment insurance benefits, increased UI payments caused by minimum wage–induced job losses are not costless from a federal budget perspective. In sum, while our assumptions are imperfect, incorporating estimates of the behavioral consequences of past minimum wage increases will be an important improvement over past simulations.

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[11] We experimented with a number of values from 0.3 to 0.6 for θ, and the distributional results were substantively unchanged.

[12] Note that if we extended our period of analysis beyond one month, laid-off minimum wage workers who applied for and received unemployment insurance benefits would be eligible for such benefits in each week of subsequent months. However, if we extended the time horizon of our analysis beyond six months, we would have to account for the fact that UI benefits are generally limited to 26 weeks unless the federal government enacts an extension.

4. Results

Poverty Effects of Minimum Wage Increases

Table 1 presents fixed effects estimates of the effect of recent minimum wage increases on state poverty rates among 16–64-year-olds. In column 1, we find no evidence that minimum wage increases between 2003 and 2007 affected overall state poverty rates. While the sign on the estimate of β_1 is negative, the effect is not statistically different from zero and is, in fact, smaller than the estimate obtained by Burkhauser and Sabia (2007) in their examination of the 1988–2003 period (-0.052 in column 1 of Table 1 versus -0.082 in column 4 of table 7 of their article). When the sample is restricted to workers (column 2), which gives the minimum wage its best chance to reduce poverty by raising incomes of low-skilled workers, we still find no effect on poverty rates. In fact, the magnitude of the poverty elasticity (-0.020) is even smaller. Therefore, the absence of poverty-alleviating effects is not solely attributable to the fact that many individuals in poor families do not work, as suggested by Card and Krueger (1995).

The above findings are quite robust across definitions of poverty. When we define poverty more broadly—encompassing those with incomes falling below 125% of the poverty line—estimates remain statistically insignificant and small across all individuals (column 3) and workers (column 4). And finally, when we estimate poverty as those with family incomes below 150% of the poverty line (columns 5–6), the estimate of β_1 actually becomes positive, though still statistically indistinguishable from zero.

As noted previously, the models estimated in Table 1 include controls for the average private sector wage, the prime-age male unemployment rate, and the share of older and younger individuals in the state. We examined the robustness of the results in Table 1 along several lines. First, we redefine the minimum wage variable as a Kaitz-type index, the ratio of the state minimum wage to the average state private sector wage (see Table A1 in the Appendix). This allows us to measure the effect of the minimum wage relative to its position in the state wage distribution. In these specifications, we continue to find no effect of the minimum wage on poverty rates of all individuals or of workers.

We also experiment with additional state-specific, time-varying controls: the prime-age female unemployment rate, the youth (aged 16–24) unemployment rate, the high school graduation rate, and the college graduation rate. Models including these controls produce results that are substantively similar (see Table A2 in the Appendix).[13]

Taken together, the estimates in Table 1 suggest that recent minimum wage increases enacted between 2003 and 2007 had no effect on state poverty rates. While lower labor force participation rates among poor, as compared to non-poor, workers is one explanation for the lack of poverty effects among all individuals (Card and Krueger 1995), the fact that the minimum wage has no effect on poverty rates of working individuals suggests that this is not the only explanation. Alternative explanations include the adverse labor demand effects of the minimum wage and its poor target efficiency. Keeping these explanations in mind, we now

[13] We also experiment with controlling for the share of individuals who were employed rather than the unemployment rate. In Appendix Table A3, we include as controls employment ratios rather than unemployment rates, defined as the share of all individuals in a particular age group who are working. The results are unchanged. In the specifications in Appendix Table A4, we include the same set of controls as in Appendix Table A3 but use the ratio of the state minimum wage to the average state wage rate as our minimum wage measure. Again, we find no evidence that state minimum wage hikes reduce poverty among all individuals or workers.

Table 1. Estimates of Relationship between the Minimum Wage and Log of State Poverty Rates, 2003–2007

	Poverty Rate (INR < 1.0)		Poverty Rate (INR < 1.25)		Poverty Rate (INR < 1.5)	
	Overall (1)	Workers (2)	Overall (3)	Workers (4)	Overall (5)	Workers (6)
Log (minimum wage)	−0.052 (0.146)	−0.020 (0.203)	−0.016 (0.104)	−0.013 (0.186)	0.004 (0.132)	0.045 (0.196)
Prime-age male unemployment rate	1.71 (0.754)**	1.52 (0.901)*	1.52 (0.025)**	1.59 (0.779)**	0.748 (0.599)	0.560 (0.658)
Log (average adult wage rate)	−0.103 (0.121)	−0.025 (0.155)	−0.072 (0.101)	−0.010 (0.136)	−0.21 (0.090)	0.013 (0.107)
Percentage of individuals aged 54–64	0.558 (1.00)	0.059 (1.11)	0.013 (0.780)	−0.933 (1.06)	0.447 (0.645)	−0.487 (0.836)
Percentage of individuals aged 16–24	2.18 (0.681)***	3.49 (1.26)***	1.23 (0.672)*	2.20 (1.03)**	0.529 (0.540)	0.989 (0.695)
State Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Year Effects?	Yes	Yes	Yes	Yes	Yes	Yes
Mean of dependent variable	0.108	0.059	0.144	0.067	0.183	0.093
N	225	255	255	255	255	255

Source: Computed by the authors.

The poverty rate is calculated using family income and the family size–adjusted poverty line. Adult wage measures and unemployment rates are calculated for those aged 25–54. All regressions are weighted by the relevant population of workers, and standard errors are corrected for clustering on the state.

***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

focus on who will gain from the newly proposed federal minimum wage increase to $9.50 per hour; how this population compares to those who gained from the last increase; and whether they are, in the main, poor.

Who Will Benefit?

Table 2 shows cross-tabulations of the wage distribution of non-self-employed 16–64-year-olds by the income-to-needs ratio of their households using the March 2008 CPS. Each column shows a different wage category, and each row shows the income-to-needs ratio of workers' households. Workers who are expected to be directly affected by the proposed increase are those who earn between $7.25 and $9.49 per hour. However, in March 2008, when wage rates of workers are measured, the federal minimum wage was $5.85 per hour. The federal minimum wage was increased to $6.55 on July 24, 2008, and increased again to $7.25 on July 24, 2009. We take a conservative approach and assume that workers earning between $5.70 and $9.49 in March 2008 will be affected by the newly proposed federal minimum wage increase.[14] We treat those who earned less than $5.70 per hour as uncovered by the federal minimum wage.[15]

We see from Table 2 that a minority of workers will be affected by the newly proposed federal minimum wage increase. Approximately 17.7% of all workers in the United States earn hourly wages between $5.70 and $9.49 per hour and stand to be directly affected by the increase, while 80.3% of all workers earn hourly wages of $9.50 per hour or more.

To assess how well the proposed federal minimum wage hike will target the working poor, we first examine the share of workers living in poor households who will be affected by the new federal minimum wage increase. While 4.4% of all workers live in poor households, not all of them will be affected by this minimum wage increase because 48.9% already earn wages greater than $9.50 per hour.

In the final column of Table 2, we show the distribution of workers who earn between $5.70 per hour and $9.50 per hour by the income-to-needs ratios of their households. We find that 11.3% of these minimum wage workers live in poor households. When workers living in near-poor households are also included (households with income-to-needs ratios between 1.0 and 1.5), this number rises to 23.4%. However, 63.2% of minimum wage workers live in households with incomes over twice the poverty line, and 42.3% live in households with incomes over three times the poverty line ($61,950 for a four-person household).

One concern with the sample examined in Table 2 is that it consists of both hourly and non-hourly workers. Recent work by Bollinger and Chandra (2005) suggests that imputing hourly wages from reported earnings may introduce substantial measurement error. Thus, it may be that some workers we assume are in the uncovered sector (those reporting hourly wages

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[14] Following Burkhauser and Finegan (1989); Burkhauser, Couch, and Glenn (1996); and Burkhauser and Sabia (2007), we assume that workers earning $0.15 below the federal minimum wage—in this case, those earning hourly wages between $5.70 and $5.84 per hour in March 2008—are working in jobs covered by the federal minimum wage and their wages simply reflect reporting error.

[15] The reported occupations of these workers suggest that many are tipped workers or those working in the informal sector, and thus they will be uncovered by the $9.50 federal minimum wage. For the full worker sample, we find that 34% of these workers were food service workers, 12% were home health care or other personal service workers, 12% were retail or other service workers, and 7% were in education services. In the sample of workers who report being paid hourly, 56% were food service workers, 11% were home health care or other personal service workers, 4% were in retail, and 3.5% were in education services.

Table 2. Wage Distribution of All Workers in 2008 by Income-to-Needs Ratio of Their Household

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percentage of All Workers	Percentage of Workers Earning More than $5.70 and Less than $9.49
	$0.01 to $5.69	$5.70 to $7.24	$7.25 to $9.49	$9.50 to $11.99	$12.00 to $15.99	$16.00 and Over	Total		
Less than 1.00	5.7	12.7	32.7	19.5	15.5	13.9	100.0	4.4	11.3
1.00 to 1.24	2.3	10.1	32.1	22.1	19.7	13.8	100.0	2.6	6.2
1.25 to 1.49	6.1	10.4	30.7	22.5	19.2	11.2	100.0	2.5	5.9
1.50 to 1.99	3.6	6.7	30.0	20.2	21.7	17.8	100.0	6.4	13.4
2.00 to 2.99	2.8	5.4	17.2	19.6	28.2	26.7	100.0	16.3	20.9
3.00 or above	1.4	2.8	8.2	8.9	17.6	61.1	100.0	67.8	42.3
Whole category share[b]	2.1	4.3	13.3	12.5	19.6	48.2	100.0	100.0	100.0

Source: Estimated from the outgoing rotation group of the Current Population Survey, March 2008.

[a] For hourly workers, wage rates are based on a direct question concerning earnings per hour on their current primary job; for non-hourly workers, wages are calculated as the ratio of reported weekly earnings to weekly hours worked. All household income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 2008 dollars.

[b] Share of all workers with wage earnings in each category.

less than $5.70 per hour) are, in fact, covered, and other workers we assume are unaffected by the minimum wage increase (those reporting hourly wages greater than $9.49 per hour) are affected.

To explore whether measurement error in wages is affecting our results, we take the approach of Bollinger and Chandra (2005) and present separate results for hourly workers and non-hourly workers. These findings are presented in Tables A5 and A6, respectively, in the Appendix. While hourly workers are more likely to be poor than are non-hourly workers, the final column of Appendix Table A5 shows that just 11.6% of hourly paid minimum wage workers live in poor households (compared to 11.3% of minimum wage workers in the full worker sample), while 42.6% live in households with incomes over three times the poverty line (compared to 42.3% of minimum wage workers in the full worker sample). We find a similar pattern of results for non-hourly minimum wage workers: The vast majority do not live in poor households, but instead live in households with incomes two or three times the poverty line.

In summary, the descriptive evidence in Table 2 suggests that raising the federal minimum wage to $9.50 per hour will not be a target-efficient anti-poverty tool because (i) many poor and near-poor workers already earn hourly wages greater than $9.50 per hour and (ii) most workers who will benefit are not poor.

How does the target efficiency of the new federal minimum wage proposal compare to that of the last increase from $5.15 to $7.25? Table 3 replicates Appendix Table A3 from Burkhauser and Sabia (2007) using the March 2007 Current Population Survey.[16] As we saw in Table 2, not all of the working poor would gain from an increase in the federal minimum wage to $9.50 per hour because 48.9% already have an hourly wage that is greater than $9.50. This was an even bigger problem with respect to the last federal minimum wage increase from $5.15 to $7.25 per hour because an even larger percentage (71%) of the working poor already earned more than $7.25 per hour. Nonetheless, the percentage of workers who will gain from an increase in the minimum wage to $9.50 (11.3% —see the last column of Table 3) is still less than the percentage who gained from the previous increase in the minimum wage to $7.25 per hour (15.8% —see the next-to-last column of Table 3). Like the last increase, the current proposal will largely affect workers living in non-poor households with incomes that are over two or three times the poverty line.[17]

But how do these facts square with the image of a minimum wage worker often invoked by advocates of minimum wage increases—a single mother struggling to support her children?[18] As Table 4 shows, only 11.1% of those who will gain from the proposed increase in the minimum wage to $9.50 per hour are single mothers, down from 12.0% from the last federal increase, but even the stereotype that the minimum wage earner is the primary earner in the household is misleading. Only about one-half of those who would gain from the minimum wage increase to $9.50 are the primary earners in their household, up from 43.4% from the last federal increase, but this difference is mainly because more of the gainers are living in one-person households or in households without children.[19]

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[16] Burkhauser and Sabia (2007) use the March 2003 CPS. The March 2007 CPS is the latest annual March CPS available when all workers faced a federal minimum wage of $5.15 per hour.

[17] These results for the last federal minimum wage increase are robust across the samples of hourly and non-hourly workers (see Appendix Tables A7 and A8, respectively).

[18] See, for example, Hindery (2004), Kennedy (2005), and Clinton (2006).

[19] Appendix Table A9 shows that these demographic characteristics are generally similar across hourly and non-hourly workers.

Table 3. Wage Distribution of All Workers in 2007 by Income-to-Needs Ratio of Their Household

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percentage of All Workers	Percentage of Workers Earning More Than $4.99 and Less Than $7.25	Percentage of Workers Earning More Than $5.70 and Less Than $9.49 in 2008
	$0.01 to $4.99	$5.00 to $5.14	$5.15 to $7.24	$7.25 to $8.99	$9.00 to $14.99	$15.00 and Over	Total			
Less than 1.00	6.0	1.2	21.9	23.6	37.1	10.3	100.0	4.6	15.8	11.3
1.00 to 1.24	3.4	1.1	14.3	24.6	48.3	8.3	100.0	2.3	5.4	6.2
1.25 to 1.49	1.7	0.9	16.0	20.3	44.5	16.6	100.0	2.7	6.9	5.9
1.50 to 1.99	3.0	0.5	10.2	15.5	46.0	24.8	100.0	7.0	11.2	13.4
2.00 to 2.99	1.0	0.5	8.1	11.8	43.6	35.0	100.0	16.6	21.4	20.9
3.00 or above	0.9	0.2	3.8	6.0	24.8	64.4	100.0	66.8	39.4	42.3
Whole category share[b]	1.4	0.3	6.4	9.3	31.1	51.6	100.0	100.0	100.0	100.0

Source: Estimated from the outgoing rotation group of the Current Population Survey, March 2007.

[a] For hourly workers, wage rates are based on a direct question concerning earnings per hour on their current primary job; for non-hourly workers, wages are calculated as the ratio of reported weekly earnings to weekly hours worked. All household income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 2007 dollars.

[b] Share of all workers with wage earnings in each category.

Table 4. Demographic Characteristics of Workers Affected by Past and Future Increases in the Federal Minimum Wage: Family Type and Gender[a]

	New Proposal			Last Federal Increase		
Family Type	Total (%)	Male (%)	Female (%)	Total (%)	Male (%)	Female (%)
Not highest earner in family	50.2	20.0	30.2	56.6	23.9	32.7
Highest earner, unmarried female, children under 18 years old in family	11.1	—	11.1	12.0	—	12.0
Highest earner, unmarried male, children under 18 years old in family	5.8	5.8	—	5.8	5.8	—
Highest earner, married with children under 18 years old in family	9.3	5.1	4.2	6.7	2.8	3.9
Highest earner, family size greater than 1, no children	10.5	4.7	5.9	7.5	3.4	5.1
Highest earner, family size equal to 1	12.9	6.4	6.5	10.3	5.5	4.8
Whole category share	100.0	42.1	57.9	100	41.5	58.5

[a] The first three columns (''New Proposal'') consists of a weighted sample of workers that includes all non-military, non-self-employed workers who earned between $5.70 and $9.49 per hour in March 2008, based on the March 2008 Current Population Survey (CPS) outgoing rotation group. The final three columns (''Last Federal Increase'') consists of a weighted sample of workers that includes all non-military, non-self-employed workers who earned between $5.00 and $7.24 per hour in March 2007, based on the March 2007 CPS outgoing rotation group.

Taken together, the results in Tables 2 and 4 suggest that, like past state and federal minimum wage hikes (Tables 1 and 3), the current proposal to raise the federal minimum wage to $9.50 per hour will not be well targeted to poor workers and, in fact, may be even less target efficient than the last federal increase. This finding is consistent with Stigler's (1946) claim that the relationship between earning a low wage and living in poverty is ''fuzzy'' and has become fuzzier over time.

Simulations

Poor target efficiency is one important reason why minimum wage increases are ineffective at reducing poverty among workers; adverse labor demand effects are another. In Table 5, we simulate expected job losses from the proposed federal minimum wage increase. We estimate that the proposed hike to $9.50 per hour will affect over 21 million workers (final row, column 2), including 2.41 million workers living in poor households and 2.56 million living in near-poor households. To estimate job losses, we calculate individual probabilities of job loss as described in Equation 2 using a range of employment elasticities from the literature. Columns 3 and 4 present estimates of job losses by income-to-needs ratios of households using the range of ''consensus'' estimates in the literature (Neumark and Wascher 2007), while columns 5 and 6 present simulations using upper-bound estimates of -0.6 and -0.86 (Burkhauser, Couch, and Wittenberg 2000b; Sabia 2008; Sabia and Burkhauser 2008). Lower-bound elasticity estimates imply job losses of 467,000 to 1.40 million, while upper-bound estimates imply job losses of approximately 3 million to 4 million.

In our preferred estimates, we allow employment elasticities to differ by characteristics of the minimum wage worker. Because larger employment elasticities have been found for younger high school dropouts, we assign an employment elasticity of -0.6 to minimum wage

Table 5. Simulated Employment Losses of Proposed Federal Minimum Wage Increase to $9.50 per Hour, by Household Income-to-Needs Ratio[ab]

Income-to-Needs Ratio	Percentage of Workers Earning More Than $5.70 and Less Than $9.49[ab] (1)	Number of Workers (000s) (2)	Job Losses (000s) ($e = -0.1$)[c] (3)	Job Losses (000s) ($e = -0.3$)[c] (4)	Job Losses (000s) ($e = -0.6$)[d] (5)	Job Losses (000s) ($e = -0.86$)[d] (6)	Percentage of Total Job Loss (7)	Job Losses (000s) ($e = -0.6$ Young Dropouts; $e = -0.2$ Others) (8)	Percentage of Total Job Loss (Column 8) (9)
Less than 1.00	11.3	2,413	57.5	172.5	344.9	496.5	12.3	168.4	12.8
1.00 to 1.24	6.2	1,316	28.7	86.2	172.4	247.5	6.1	78.8	6.0
1.25 to 1.49	5.9	1,255	28.4	85.3	170.7	245.5	6.1	70.0	5.4
1.50 to 1.99	13.4	2,851	57.5	172.5	345.0	496.2	12.3	147.1	11.2
2.00 to 2.99	20.9	4,453	96.5	289.5	579.0	833.8	20.6	282.5	21.5
3.00 or above	42.3	9,015	198.8	596.5	1,193	1,716	42.5	566.0	43.1
Total	100.0	21,303	467.5	1,402.0	2,805.0	4,034.0	100.0	1,313.0	100.0

[a] For hourly workers, wage rates are based on a direct question concerning earnings per hour on their current primary job; for non-hourly workers, wages are calculated as the ratio of reported weekly earnings to weekly hours worked. All household income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in nominal dollars. Sample restricted to 16–64-year-olds who report positive weeks and weekly hours worked in the previous year.

[b] This wage category corresponds to March 2008.

[c] Consensus estimates in minimum wage literature (see Neumark and Wascher 2007).

[d] Upper-bound estimates found in new minimum wage literature (see Burkhauser, Couch, and Wittenberg 2000b; Sabia 2008; Sabia and Burkhauser 2008).

Table 6. Simulated Employment Losses from the Last Federal Minimum Wage Increase to $7.25 per Hour, by Household Income-to-Needs Ratio[ab]

Income-to-Needs Ratio	Percentage of Workers Earning More Than $5.00 and Less Than $7.25 in 2007[ab] (1)	Number of Workers (000s) (2)	Job Losses (000s) ($e = -0.6$ Young Dropouts; $e = -0.2$ Others) (3)	Percentage of Total Job Loss (4)
Less than 1.00	15.8	1274	51.5	13.7
1.00 to 1.24	5.4	431.2	25.4	6.8
1.25 to 1.49	6.9	552.7	18.7	5.0
1.50 to 1.99	11.2	897.7	44.6	14.8
2.00 to 2.99	21.4	1718	79.4	21.2
3.00 or above	39.4	3169	155.3	40.8
Total	100.0	8042.0	374.9	100.0

[a] For hourly workers, wage rates are based on a direct question concerning earnings per hour on their current primary job; for non-hourly workers, wages are calculated as the ratio of reported weekly earnings to weekly hours worked. All household income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in nominal dollars. Sample restricted to 16–64-year-olds who report positive weeks and weekly hours worked in the previous year.

[b] This wage category corresponds to March 2007.

workers aged 16–29 without a high school diploma (representing over one-quarter of the sample) and an elasticity of -0.2 to other minimum wage workers. In this simulation, we estimate 1.3 million jobs lost.

Importantly, the share of job losses experienced by workers in poor households (12.8%; column 9, row 1) is larger than that experienced by the share of minimum wage workers who are poor (11.3%). This is because their hourly wage rates were on average lower than were those of affected workers living in many non-poor households, thus leading to a higher probability of job loss. But our estimate of job losses borne by poor workers is likely to understate the actual difference between workers living in poor and non-poor households, since the demand for these workers may be more elastic than that of non-poor workers as a group (see, for example, Sabia 2008).

The magnitude of simulated job losses from the current proposal is much larger than that from the last increase because the last increase affected far fewer workers (see Table 6). Using our preferred employment elasticities, our simulation indicates that the last federal minimum wage hike from $5.15 to $7.25 will, when fully implemented, reduce employment by approximately 374,900 jobs. However, in contrast to the current proposal, the last increase did not yield higher percentage job losses among the working poor.

While job losses are certainly possible, and even probable given the consensus of existing empirical evidence (Neumark and Wascher 2008), net income gains are still possible if adverse employment effects are sufficiently small. But are the gains from minimum wage increases received, in the main, by working poor, as proponents expect? In Table 7, we simulate the expected monthly benefits from the proposed federal minimum wage hike to $9.50 per hour. Column 1 shows the distribution of monthly benefits assuming no behavioral effects of the minimum wage, as was assumed by Burkhauser and Finegan (1989); Burkhauser, Couch, and Glenn (1996); and Burkhauser and Sabia (2007). If no minimum wage workers are laid off or have their hours reduced, the minimum wage increase is simulated to yield $4.0 billion in monthly benefits. This estimate can be considered an upper-bound estimate of benefits, given our optimistic behavioral assumptions. However, even under these assumptions, just 10.9%

Table 7. Simulated Monthly Net Benefits from Proposed Federal Minimum Wage Increase to $9.50, by Household Income-to-Needs Ratio[ab]

Income-to-Needs Ratio	Net Benefits in Billions $ ($e = 0$) (1)	% Net Benefits ($e = 0$) (2)	Net Benefits in Billions $ ($e = -0.1$) (3)	Net Benefits in Billions $ ($e = -0.3$) (4)	Net Benefits in Billions $ ($e = -0.6$) (5)	Net Benefits in Billions $ ($e = -0.86$)[c] (6)	% Net Benefits (7)	Net Benefits in Billions $ ($e = -0.6$ for 16–29-Year-Old Dropouts; $e = -0.2$ for Others) (8)	% Net Benefits (Column 6) (9)
Less than 1.00	0.439	10.9	0.389	0.287	0.135	0.001	10.9	0.298	10.5
1.00 to 1.24	0.282	7.0	0.249	0.184	0.086	0.000	7.0	0.201	7.1
1.25 to 1.49	0.270	6.7	0.239	0.177	0.084	0.003	6.8	0.195	6.9
1.50 to 1.99	0.566	14.0	0.502	0.374	0.183	0.014	14.9	0.413	14.5
2.00 to 2.99	0.832	20.6	0.734	0.539	0.245	−0.012	19.9	0.565	19.9
3.00 or above	1.64	40.7	1.45	1.07	0.495	−0.006	40.2	1.17	41.2
Total	4.03	100.0	3.56	2.63	1.23	0.000	100.0	2.84	100.0

[a] Expected benefits are calculated as the weighted sum of $(1 - p)(\$9.50 - w)H - pwH + pUI$ for each minimum wage worker, where p is the probability of job loss from the minimum wage hike, $[(\$9.50 - w)/w]e$; w is the worker's hourly wage rate; H is monthly hours worked; UI is the expected unemployment insurance benefit; and e is the employment elasticity.

[b] The analysis uses data from the outgoing rotation groups of the March 2008 CPS. A minimum wage worker is defined as earning between $5.70 and $9.49 per hour in March 2008. Sample restricted to 16–64-year-olds who report positive weeks and weekly hours worked in previous year.

[c] The break-even elasticity is −0.863.

($439 million) of these benefits will be received by the working poor (column 2), and 24.6% of the benefits will be received by workers living in poor or near-poor households. Nearly 62% of the benefits will be received by workers in households with incomes over twice the poverty line, and 40.7% will be received by workers in households with incomes over three times the poverty line. Thus, even under optimistic assumptions of zero employment elasticities (Card 1992; Card and Krueger 1994, 1995; Addison, Blackburn, and Cotti 2008; Dube, Lester, and Reich 2008), only a small share of the benefits will be received by the working poor.

In columns 3–8, we improve on the previous literature's simulations by allowing for behavioral effects of the federal minimum wage increase. At a conservative employment elasticity of −0.1, the total net benefits from the minimum wage fall by 11.7%, to $3.56 billion, but the distribution of benefits remains similar to that when no employment effects were assumed: Approximately 10.9% of benefits are received by workers living in poor households.

At higher employment elasticities, net benefits fall substantially. An employment elasticity of −0.3 reduces net benefits by 34.7%, to $2.63 billion (column 4), and an elasticity of −0.6 reduces net benefits by 69.5%, to $1.23 billion (column 5). We estimate the break-even employment elasticity, where Equation 4 equals zero, to be −.086 (column 6). While an employment elasticity of −0.86 is large relative to the consensus estimates in the literature, a few studies have found estimates as large for less-educated single mothers (Sabia 2009b) and young high school dropouts (Burkhauser, Couch, and Wittenberg 2000b; Sabia and Burkhauser 2008). Thus, it is not implausible to imagine that the benefits of a minimum wage increase to $9.50 to the working poor would be quite small, or even negative. Using our preferred estimates, which assume a −0.6 employment elasticity for younger dropouts and a −0.2 elasticity for other workers, we find that the net benefits are $2.84 billion, with just 10.5% of these benefits received by poor workers.

When we compare the distribution of benefits from the current proposal at our preferred employment elasticities (Table 8, columns 1–2) to the distribution of benefits of the last increase (Table 8, columns 3–4), we find that the benefits from the new proposal are even less well targeted than are those from the last increase. Approximately 15.5% of the simulated monthly net benefits of the last increase went to workers living in poor households, compared to 10.5% of the benefits from an increase to $9.50 per hour. The break-even elasticity of the last federal minimum wage increase is −0.91 (column 5), somewhat higher than for the current proposal.

Again, our estimates of benefits to workers from the minimum wage increase include unemployment insurance benefits, which are, in fact, costly to the federal government and are only a partial short-run remedy for unemployed workers. Moreover, the vast majority of these unemployment insurance benefits are received by non-poor workers, who comprise 87.2% of minimum wage workers who lose their jobs. If we exclude unemployment insurance benefits from the above benefit simulations, the break-even employment elasticity of the current minimum wage proposal falls to −0.77.

5. Conclusions

This study first examines the effect of recent minimum wage increases on state poverty rates and then compares the target efficiency of the last federal minimum wage increase from $5.15 to $7.25 per hour to the target efficiency of a newly proposed hike from $7.25 to $9.50 per

Table 8. Comparison of Simulated Monthly Net Benefits from Proposed Federal Minimum Wage Increase to the Last Federal Minimum Wage Increase, by Household Income-to-Needs Ratio[a,b]

Income-to-Needs Ratio	Net Benefits in Billions $ from New Proposal ($e = -0.6$ for 16–29-Year-Old Dropouts; $e = -0.2$ for Others) (1)	% Net Benefits from New Proposal (Column 1) (2)	Net Benefits in Billions $ from Last Federal Increase ($e = -0.6$ for 16–29-Year-Old Dropouts; $e = -0.2$ for Others) (3)	% Net Benefits from Last Federal Increase (Column 3) (4)	Net Benefits in Billions $ from Last Federal Increase ($e = -0.91$)[c] (5)
Less than 1.00	0.298	10.5	0.086	15.5	0.002
1.00 to 1.24	0.201	7.1	0.026	4.7	−0.000
1.25 to 1.49	0.195	6.9	0.038	6.8	−0.000
1.50 to 1.99	0.413	14.5	0.075	13.5	−0.001
2.00 to 2.99	0.565	19.9	0.122	21.9	0.002
3.00 or above	1.170	41.2	0.211	37.9	−0.004
Total	2.840	100.0	0.556	100.0	0.000

[a] Expected benefits from last federal minimum wage increase are calculated as the weighted sum of $(1 - p)(\$7.25 - w)H - pwH + pUI$ for each minimum wage worker, where p is the probability of job loss from the minimum wage hike, $[(\$7.25 - w)/w]e$; w is the worker's hourly wage rate; H is monthly hours worked; UI is expected unemployment insurance benefits; and e is the employment elasticity.

[b] The analysis uses data from the outgoing rotation groups of the March 2007 CPS. A minimum wage worker is defined as earning between $5.00 and $7.24 per hour in March 2007. Sample restricted to 16–64-year-olds who report positive weeks and weekly hours worked in previous year.

[c] The break-even elasticity is −0.912.

hour. Our results show that recent minimum wage increases between 2003 and 2007 had no effect on state poverty rates. Moreover, the proposal to raise the federal minimum wage to $9.50 per hour is unlikely to be any better at reducing poverty because (i) most workers (89.0%) who are affected are not poor, (ii) many poor workers (48.9%) already earn hourly wages greater than $9.50 per hour, and (iii) the minimum wage increase is likely to cause adverse employment effects for the working poor. Our evidence also suggests that the target efficiency of federal minimum wage increases is not improving, and it may actually be worsening. When compared to the last federal increase, the current proposal appears even less target efficient; 15.5% of the benefits of the last increase were received by the working poor, compared to 10.5% from the current proposal. At an employment elasticity of −0.6 for minimum wage workers who are young dropouts and −0.2 for others, we forecast that approximately 1.3 million low-skilled workers will lose their jobs if the federal minimum wage is raised to $9.50 per hour, including 168,000 jobs held by the working poor. And at employment elasticities greater than −0.86, we estimate that net monthly benefits from the minimum wage increase will actually become negative.

While raising the federal minimum wage is an increasingly ineffective anti-poverty strategy, expansions in the EITC program may be a promising alternative for several reasons. First, because eligibility is based on family income rather than a wage rate, the benefits are much more likely to be received by workers living in poor families (Burkhauser, Couch, and Glenn 1996; Neumark and Wascher 2001; Burkhauser and Sabia 2007; Congressional Budget Office 2007). Thus, most of the 48.9% of poor workers who earned hourly wages greater than $9.50 per hour in March 2008 and would not gain from the proposed increase in the federal minimum wage could gain from expansions in the EITC. Second, because the costs of the EITC are not directly borne by employers, expansions in this wage subsidy do not cause adverse labor demand effects. In fact, a large body of empirical literature finds that expansions in the EITC increase employment among low-skilled single mothers (Eissa and Liebman 1996; Ellwood 2000; Meyer and Rosenbaum 2000, 2001; Hotz, Mullin, and Scholz 2002; Grogger 2003; Hotz and Scholz 2003; Eissa and Hoynes 2005). Given that employment is an important anti-poverty mechanism and wage subsidies can increase income to the working poor, expansions in the EITC may be a more effective means of aiding the working poor than would be increasing the federal minimum wage.

We conclude that further increases in the minimum wage will do little to reduce poverty and are a poor substitute for further expansions in the federal Earned Income Tax Credit program as a mechanism for reducing poverty.

Table A1. Estimates of Relationship between the Minimum Wage and Log of State Poverty Rates, 2003–2007

	Poverty Rate (INR < 1.0)		Poverty Rate (INR < 1.25)		Poverty Rate (INR < 1.5)	
	Overall (1)	Workers (2)	Overall (3)	Workers (4)	Overall (5)	Workers (6)
Log (ratio of minimum wage to average state wage)	0.046 (0.080)	0.008 (0.124)	0.039 (0.071)	0.001 (0.104)	0.015 (0.066)	0.008 (0.100)
Prime-age male unemployment rate	1.76 (0.762)**	1.54 (0.915)*	1.55 (0.668)**	1.60 (0.807)*	0.754 (0.619)	0.538 (0.699)
Percentage of individuals aged 54–64	0.712 (1.02)	0.104 (1.09)	0.101 (0.772)	−0.910 (1.02)	0.465 (0.638)	−0.545 (0.858)
Percentage of individuals aged 16–24	2.08 (0.657)***	3.46 (1.23)***	1.18 (0.655)*	2.19 (1.02)**	0.518 (0.560)	1.03 (0.735)
State effects?	Yes	Yes	Yes	Yes	Yes	Yes
Year effects?	Yes	Yes	Yes	Yes	Yes	Yes
Mean poverty rate	0.108	0.059	0.144	0.067	0.183	0.093
N	225	255	255	255	255	255

Source: Computed by the authors.

The poverty rate is calculated using family income and the family size–adjusted poverty line. Adult wage measures and unemployment rates are calculated for those aged 25–54. All regressions are weighted by the relevant population of workers, and standard errors are corrected for clustering on the state. INR = income-to-needs ratio.

***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table A2. Estimates of Relationship between the Minimum Wage and Log of State Poverty Rates, 2003–2007

	Poverty Rate (INR < 1.0)		Poverty Rate (INR < 1.25)		Poverty Rate (INR < 1.5)	
	Overall (1)	Workers (2)	Overall (3)	Workers (4)	Overall (5)	Workers (6)
Log (minimum wage)	−0.033 (0.164)	−0.012 (0.225)	0.024 (0.156)	0.014 (0.200)	0.021 (0.132)	0.028 (0.183)
Log (average adult wage rate)	−0.002 (0.005)	0.002 (0.005)	−0.001 (0.004)	0.002 (0.004)	0.001 (0.003)	0.002 (0.003)
Prime-age male unemployment rate	1.66 (0.770)**	1.26 (0.926)	1.34 (0.670)*	1.24 (0.837)	0.583 (0.683)	0.281 (0.664)
Prime-age female unemployment rate	0.271 (0.889)	1.47 (1.03)	1.09 (0.768)	2.27 (1.09)**	0.717 (0.626)	1.30 (0.929)
Youth (16–24) unemployment rate	−0.054 (0.419)	−0.393 (0.573)	−0.081 (0.342)	−0.434 (0.468)	0.087 (0.319)	−0.078 (0.415)
High school graduation rate	−0.038 (1.22)	−1.51 (1.47)	0.207 (0.983)	−0.897 (1.17)	−0.152 (0.874)	−1.63 (1.02)
College graduation rate	−0.241 (1.06)	0.308 (1.34)	−0.378 (0.826)	0.532 (0.921)	−0.408 (0.637)	0.408 (0.609)
Percentage of individuals aged 54–64	0.695 (1.07)	0.318 (1.15)	0.132 (0.822)	−0.745 (1.05)	0.533 (0.683)	−0.338 (0.802)
Percentage of individuals aged 16–24	2.13 (0.663)***	3.32 (1.28)**	1.10 (0.645)*	1.94 (1.07)*	0.467 (0.524)	0.910 (0.740)
State effects?	Yes	Yes	Yes	Yes	Yes	Yes
Year effects?	Yes	Yes	Yes	Yes	Yes	Yes
Mean poverty rate	0.108	0.059	0.144	0.067	0.183	0.093
N	225	255	255	255	255	255

Source: Computed by the authors.

The poverty rate is calculated using family income and the family size–adjusted poverty line. Adult wage measures and unemployment rates are calculated for those aged 25–54. All regressions are weighted by the relevant population of workers, and standard errors are corrected for clustering on the state. INR = income-to-needs ratio.

***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table A3. Estimates of Relationship between the Minimum Wage and Log of State Poverty Rates, 2003–2007

	Poverty Rate (INR < 1.0)		Poverty Rate (INR < 1.25)		Poverty Rate (INR < 1.5)	
	Overall (1)	Workers (2)	Overall (3)	Workers (4)	Overall (5)	Workers (6)
Log (minimum wage)	−0.024 (0.129)	−0.030 (0.181)	0.002 (0.130)	−0.060 (0.164)	0.031 (0.125)	0.007 (0.169)
Log (average adult wage rate)	−0.003 (0.005)	0.000 (0.005)	−0.002 (0.004)	0.001 (0.005)	−0.000 (0.004)	0.001 (0.003)
Prime-age male employment ratio	−2.30 (0.607)***	−1.06 (0.876)	−1.57 (0.588)***	−0.045 (0.780)	−1.33 (0.477)***	0.049 (0.593)
Prime-age female employment ratio	−1.10 (0.544)**	−0.896 (0.662)	−0.648 (0.480)	0.093 (0.534)	−0.645 (0.377)*	0.202 (0.457)
Youth (16–24) employment ratio	−0.305 (0.324)	0.634 (0.511)	−0.181 (0.292)	0.760 (0.451)*	−0.011 (0.237)	0.803 (0.355)**
High school graduation rate	−0.447 (1.00)	−1.89 (1.47)	−0.262 (0.874)	−1.39 (1.24)	−0.367 (0.731)	−1.73 (0.989)*
College graduation rate	0.066 (0.701)	0.408 (1.18)	−0.114 (0.610)	0.532 (0.946)	−0.208 (0.434)	0.338 (0.597)
Percentage of individuals aged 54–64	1.12 (0.982)	0.210 (1.09)	0.476 (0.753)	−0.834 (0.987)	0.669 (0.610)	−0.590 (0.735)
Percentage of individuals aged 16–24	2.07 (0.690)***	3.41 (1.32)**	1.13 (0.676)*	2.10 (1.08)*	0.457 (0.526)	0.934 (0.667)
State effects?	Yes	Yes	Yes	Yes	Yes	Yes
Year effects?	Yes	Yes	Yes	Yes	Yes	Yes
Mean poverty rate	0.108	0.059	0.144	0.067	0.183	0.093
N	225	255	255	255	255	255

Source: Computed by the authors.

The poverty rate is calculated using family income and the family size–adjusted poverty line. Adult wage measures and unemployment rates are calculated for those aged 25–54. All regressions are weighted by the relevant population of workers, and standard errors are corrected for clustering on the state. INR = income-to-needs ratio.

***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table A4. Estimates of Relationship between the Minimum Wage and Log of State Poverty Rates, 2003–2007

	Poverty Rate (INR < 1.0)		Poverty Rate (INR < 1.25)		Poverty Rate (INR < 1.5)	
	Overall (1)	Workers (2)	Overall (3)	Workers (4)	Overall (5)	Workers (6)
Log (ratio of minimum wage to average state wage)	0.071 (0.083)	0.036 (0.112)	0.054 (0.076)	0.006 (0.094)	0.032 (0.070)	0.009 (0.085)
Prime-age male employment ratio	−2.31 (0.624)***	−1.07 (0.884)	−1.57 (0.591)**	−0.054 (0.784)	−1.33 (0.473)***	0.046 (0.589)
Prime-age female employment ratio	−1.15 (0.539)**	−0.949 (0.671)	−0.687 (0.476)	0.053 (0.536)	−0.663 (0.380)*	0.184 (0.463)
Youth (16–24) employment ratio	−0.279 (0.317)	0.663 (0.502)	−0.163 (0.287)	0.784 (0.446)*	−0.002 (0.235)	0.813 (0.352)**
High school graduation rate	−0.289 (1.05)	−1.81 (1.49)	−0.176 (0.892)	−1.31 (1.25)	−0.369 (0.795)	−1.75 (1.05)
College graduation rate	−0.023 (0.699)	0.368 (1.14)	−0.157 (0.607)	0.482 (0.937)	−0.195 (0.439)	0.356 (0.618)
Percentage of individuals aged 54–64	1.13 (1.00)	0.117 (1.07)	0.449 (0.744)	−0.879 (0.958)	0.600 (0.597)	−0.678 (0.745)
Percentage of individuals aged 16–24	1.97 (0.705)***	3.36 (1.27)**	1.08 (0.681)	2.05 (1.04)**	0.463 (0.565)	0.949 (0.700)
State effects?	Yes	Yes	Yes	Yes	Yes	Yes
Year effects?	Yes	Yes	Yes	Yes	Yes	Yes
Mean poverty rate	0.108	0.059	0.144	0.067	0.183	0.093
N	225	255	255	255	255	255

Source: Computed by the authors.

The poverty rate is calculated using family income and the family size–adjusted poverty line. Adult wage measures and unemployment rates are calculated for those aged 25–54. All regressions are weighted by the relevant population of workers, and standard errors are corrected for clustering on the state. INR = income-to-needs ratio.

***, **, * indicate significance at the 1%, 5%, and 10% levels, respectively.

Table A5. Wage Distribution of Hourly Workers in 2008 by Income-to-Needs Ratio of Their Household

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percentage of All Workers	Percentage of Workers Earning More Than $5.70 and Less Than $9.50
	$0.01 to $5.69	$5.70 to $7.24	$7.25 to $9.49	$9.50 to $11.99	$12.00 to $15.99	$16.00 and Over	Total		
Less than 1.00	2.5	12.3	39.0	19.8	15.9	10.5	100.0	5.8	11.6
1.00 to 1.24	0.9	10.1	35.4	21.0	20.2	12.4	100.0	3.6	6.4
1.25 to 1.49	3.4	10.2	33.9	22.3	20.9	9.3	100.0	3.5	5.9
1.50 to 1.99	3.3	6.7	35.5	22.8	21.3	10.5	100.0	8.1	13.3
2.00 to 2.99	2.3	6.1	20.2	22.4	29.1	19.9	100.0	19.8	20.3
3.00 or above	1.5	4.6	13.8	13.8	23.1	43.2	100.0	59.3	42.6
Whole category share[b]	1.9	5.9	19.8	17.2	23.5	31.8	100.0	100.0	100.0

Source: Estimated from the outgoing rotation group of the Current Population Survey, March 2008.

[a] Hourly wage rates are based on a direct question concerning earnings per hour on workers' current primary job. All household income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 2008 dollars.

[b] Share of all workers with wage earnings in each category.

Table A6. Wage Distribution of Non-Hourly Workers in 2008 by Income-to-Needs Ratio of Their Household

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percentage of All Workers	Percentage of Workers Earning More Than $5.70 and Less Than $9.50
	$0.01 to $5.69	$5.70 to $7.24	$7.25 to $9.49	$9.50 to $11.99	$12.00 to $15.99	$16.00 and Over	Total		
Less than 1.00	16.6	14.4	12.6	18.2	12.0	26.2	100.0	2.4	10.1
1.00 to 1.24	8.8	10.4	17.9	26.3	18.3	18.3	100.0	1.1	4.7
1.25 to 1.49	16.5	10.9	18.4	23.1	12.7	18.4	100.0	1.3	5.7
1.50 to 1.99	4.5	6.8	15.1	13.0	22.5	38.2	100.0	4.1	13.9
2.00 to 2.99	4.0	4.0	9.8	13.0	26.1	43.1	100.0	11.4	24.5
3.00 or above	1.3	1.0	2.3	3.6	11.9	79.9	100.0	79.8	41.0
Whole category share[b]	2.4	2.1	4.3	5.9	14.1	71.3	100.0	100.0	100.0

[a] Hourly wage rates are based on a calculated ratio of weekly earnings to weekly hours. All household income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 2008 dollars.

[b] Share of all workers with wage earnings in each category.

Table A7. Wage Distribution of Hourly Workers in 2007 by Income-to-Needs Ratio in Their Household

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percentage of All Workers	Percentage of Workers Earning More Than $4.99 and Less Than $7.25	Percentage of Hourly Workers Earning More Than $5.70 and Less Than $9.49 in 2008
	$0.01 to $4.99	$5.00 to $5.14	$5.15 to $7.24	$7.25 to $8.99	$9.00 to $14.99	$15.00 and Over	Total			
Less than 1.00	2.9	0.5	25.5	28.0	37.1	6.1	100.0	6.3	17.0	11.6
1.00 to 1.24	2.0	1.4	15.6	25.9	47.6	7.4	100.0	3.2	5.6	6.4
1.25 to 1.49	1.8	1.0	16.8	23.4	42.5	14.5	100.0	3.4	6.3	5.9
1.50 to 1.99	2.6	0.0	10.4	18.4	48.7	20.0	100.0	7.0	10.0	13.3
2.00 to 2.99	1.2	0.5	9.7	14.5	47.7	26.6	100.0	19.9	21.0	20.3
3.00 or above	1.1	0.2	6.4	10.1	34.7	47.6	100.0	58.2	40.0	42.6
Whole category share[b]	1.4	0.3	9.2	13.8	39.4	35.9	100.0	100.0	100.0	100.0

Source: Estimated from the outgoing rotation group of the Current Population Survey, March 2007.

[a] Hourly wage rates are based on a direct question concerning earnings per hour on workers' current primary job. All household income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 2007 dollars.

[b] Share of all workers with wage earnings in each category.

Table A8. Wage Distribution of Non-Hourly Workers in 2007 by Income-to-Needs Ratio of Their Household

Income-to-Needs Ratio	Hourly Wage Categories[a]							Percentage of All Workers	Percentage of Workers Earning More Than $4.99 and Less Than $7.25	Percentage of Non-Hourly Workers Earning More Than $5.70 and Less Than $9.49 in 2008
	$0.01 to $4.99	$5.00 to $5.14	$5.15 to $7.24	$7.25 to $8.99	$9.00 to $14.99	$15.00 and over	Total			
Less than 1.00	17.5	2.8	9.5	8.2	36.8	25.2	100.0	2.3	10.2	10.1
1.00 to 1.24	8.5	0.0	9.6	19.7	50.8	11.4	100.0	1.2	4.1	4.7
1.25 to 1.49	1.4	0.7	14.0	12.9	50.3	20.8	100.0	1.8	9.7	5.7
1.50 to 1.99	4.4	2.1	9.5	6.9	37.8	39.4	100.0	4.0	16.6	13.9
2.00 to 2.99	0.7	0.5	4.8	5.5	35.0	53.6	100.0	12.1	22.8	24.5
3.00 or above	0.7	0.1	1.2	1.9	14.8	81.4	100.0	78.6	36.6	41.0
Whole category share[b]	1.3	0.3	2.5	3.1	19.7	73.1	100.0	100.0	100.0	100.0

Source: Estimated from the outgoing rotation group of the Current Population Survey, March 2007.

[a] Hourly wage rates are based on a calculated ratio of weekly earnings to weekly hours. All household income data used to calculate income-to-needs ratios come from retrospective information from the previous year because that is the period for which it is reported. Wages are in 2007 dollars.

[b] Share of all workers with wage earnings in each category.

Table A9. Demographic Characteristics of Workers Affected by Past and Future Increases in the Federal Minimum Wage: By Hourly versus Non-Hourly Status[a]

	Hourly	Non-Hourly	Hourly	Non-Hourly
Family Type	New Proposal		Last Federal Increase	
Not highest earner in family	51.2	44.7	57.3	53.3
Highest earner, unmarried female, children under 18 years old in family	11.3	10.0	12.5	9.8
Highest earner, unmarried male, children under 18 years old in family	5.8	6.2	5.5	7.4
Highest earner, married with children under 18 years old in family	8.6	13.5	6.3	8.9
Highest earner, family size greater than 1, no children	10.4	12.0	7.5	13.2
Highest earner, family size equal to 1	12.7	13.6	11.0	7.3
Whole category share	100	100	100	100

[a] The first three columns (''New Proposal'') consist of a weighted sample of workers that includes all non-military, non-self-employed workers who earned between $5.70 and $9.49 per hour in March 2008, based on the March 2008 Current Population Survey (CPS) outgoing rotation group. The final three columns (''Last Federal Increase'') consist of weighted sample of workers that includes all non-military, non-self-employed workers who earned between $5.00 and $7.24 per hour in March 2007, based on the March 2007 CPS outgoing rotation group.

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