

# When Unionization Disappears: State-Level Unionization and Working Poverty in the United States

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## Abstract

Although the working poor are a much larger population than the unemployed poor, U.S. poverty research devotes much more attention to joblessness than to working poverty. Research that does exist on working poverty concentrates on demographics and economic performance and neglects institutions. Building on literatures on comparative institutions, unionization, and states as polities, we examine the influence of a potentially important labor market institution for working poverty: the level of unionization in a state. Using the Luxembourg Income Study (LIS) for the United States, we estimate (1) multi-level logit models of poverty among employed households in 2010; and (2) two-way fixed-effects models of working poverty across seven waves of data from 1991 to 2010. Further, we replicate the analyses with the Current Population Survey while controlling for household unionization, and assess unionization's potential influence on selection into employment. Across all models, state-level unionization is robustly significantly negative for working poverty. The effects of unionization are larger than the effects of states' economic performance and social policies. Unionization reduces working poverty for both unionized and non-union households and does not appear to discourage employment. We conclude that U.S. poverty research can advance by devoting greater attention to working poverty, and by incorporating insights from the comparative literature on institutions.

## Keywords

working poverty, unionization, poverty, institutions, labor markets

One of the distinctive qualities of U.S. poverty research is the great deal of attention given to joblessness. Poverty scholars in the United States have studied the rise of poor African American jobless neighborhoods (Quillian 2003) and how spatial mismatch worsens inner-city unemployment (Mouw 2000). Much has been written on joblessness among the inner-city poor (Tienda and Stier 1991), young African American men (Holzer 2009), single mothers, and welfare recipients (Harris 1993). Building on this work, scholars

have highlighted the adverse consequences of joblessness and jobless neighborhoods for adolescent development (Brooks-Gunn et al.

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1993), marriage among fragile families (Harknett and McLanahan 2004), crime (Sampson 1987), and other social problems (Massey and Shibuya 1995). Scholars have also stressed the need to improve the labor market entry of disadvantaged youth (Blanchflower and Freeman 2000) and the need for job growth to reduce poverty (Blank 2009).

This considerable attention to joblessness has been partly inspired by Wilson's (1996) pioneering studies of concentrated inner-city poverty. Clearly, the extensive scholarship on joblessness has made far-reaching contributions to the social science of poverty, and of course, a job reduces the likelihood of poverty. However, by devoting so much attention to joblessness, the prevailing momentum in U.S. poverty research has led to the impression that unemployment is the central problem. Inadvertently, the concentration on joblessness has cultivated the false perceptions that "most of the poor do not work" (Mead 1993:ix) and that employment is a sufficient solution to poverty.

The problem is that the working poor, not the unemployed poor, are the most typical poor (Blank 1997; Newman 1999). Blank, Danziger, and Schoeni (2006) show that 61 percent of officially poor families in the United States contain a worker. Moreover, Brady, Fullerton, and Cross (2010) demonstrate that in the United States in 2001, there were more than four times more people in working poor than unemployed poor households. The unemployed poor averaged only 3.4 percent of the U.S. population from 1974 to 2004, whereas the working poor averaged 10.4 percent.<sup>1</sup> Despite its prevalence, working poverty has been neglected compared to the voluminous literature on joblessness (Newman 1999; O'Connor 2001; Zuberi 2006).

Recently, a modest literature on U.S. working poverty has begun to emerge. However, this literature tends to concentrate on demographics and economic performance (e.g., Blank et al. 2006). For example, working poverty is more common in single-mother and single-earner households, and among women, racial minorities, young adults, and the less educated (Blank et al. 2006; Iceland

and Kim 2001). Among workers, poverty is less common among full-time, manufacturing, and public sector workers (Hauan, Lansdale, and Leicht 2000; Kalleberg 2007). Research also demonstrates that working poverty follows the business cycle, declining with economic growth and rising with unemployment (Blank et al. 2006; Hall 2006).

Despite these findings, we know little about how institutions shape working poverty in the United States. Specifically, unionization receives minimal attention in mainstream U.S. poverty research and very little mention in most central texts in the field.<sup>2</sup> This is noteworthy, given the rich comparative literature documenting the role of political and labor market institutions for wages, inequality, and poverty. In countries with high unionization, inequality and poverty are lower and wages are higher. Similarly, U.S. states exhibit meaningful variation in institutions. Indeed, scholars have highlighted U.S. states as polities where struggles and settlements over distribution occur. Therefore, the comparative literature could be applicable to the United States, and greater state-level unionization may reduce working poverty. The neglect of unionization in studies of working poverty is also unfortunate given that the decline of unionization contributed to increases in earnings inequality (Western and Rosenfeld 2011) and the precariousness of work (Kalleberg 2007). If these changes are associated with working poverty, the precipitous decline of unionization may have worsened working poverty. Yet, because so little research has examined institutions and working poverty within the United States, we do not know if unionization is salient nor do we know how unionization's influence compares to demographics and economic performance.

This article uses the Luxembourg Income Study (LIS) for the United States from 1991 to 2010 to examine the effect of state-level unionization for individual working poverty. First, we estimate multi-level logit models of poverty among employed households in 2010. Second, we examine working poverty across 1991, 1994, 1997, 2000, 2004, 2007, and 2010 with two-way fixed effects for state and

year. Further, we replicate these analyses using the Current Population Survey (2004 to 2010), while controlling for household unionization, and assess unionization's potential influence on selection into employment. Throughout, we consider effects of demographic characteristics, economic performance, and key social policies.

## THEORETICAL BACKGROUND

### *The Case for Skepticism*

Despite the benefits of unionization for workers, there are at least four reasons unionization might fail to reduce working poverty. First, unions are exceptionally weak in the contemporary United States. Unionization has declined in other affluent democracies, but the United States is distinctive for its unusually low levels, which are especially pronounced in some states.<sup>3</sup> Since the early 2000s, only about 3 percent of workers in North Carolina have been unionized—a level unprecedented in available data for affluent democracies (Hirsch and Macpherson 2003; Visser 2011). Furthermore, U.S. unionization has declined more rapidly among the less skilled, who are more vulnerable to working poverty (Blank 2009). This lower union density has plausibly weakened the position of and compromised the effectiveness of unions (Rosenfeld 2006; Wallace, Leicht, and Raffalovich 1999). Unions might thus be simply too weak to affect working poverty.

Second, partly due to this weakness, there is much less variation in unionization across U.S. states than across affluent democracies. In 2010, the range between states (21.1 percent) was much smaller than that between rich democracies (over 50 percent) (Visser 2011). As a result, Moller, Alderson, and Nielsen (2009) find unionization does not have a cross-sectional effect on income inequality in U.S. counties. Because income inequality and poverty are related, studies of the United States might fail to show effects of unionization because “the context of U.S. states provides for a rather conservative test of institutional hypotheses” (Moller et al. 2009:1085).

Third, even if unions raise some workers' earnings, these benefits might not reach the bottom of the labor market. Less-skilled, low-paid workers are unlikely to be unionized or covered by union contracts. Unions and the regulations they establish might create rents only for protected insiders, and might exclude, have little impact on, or even worsen the labor market for poor workers. Long-standing labor economic theory claims that unions have a “crowding effect,” in which union wage gains lead to cuts in the quantity of union jobs (Kahn 1978; Neumark and Wachter 1995). Accordingly, crowding should increase the supply of non-union workers, which should depress wages for non-union workers and worsen working poverty.

Fourth, the literature implies that the aforementioned demographics and economic performance are the dominant sources of working poverty (Blank et al. 2006). Even if unions benefit individual workers, because poverty is a household-level variable, demographic characteristics like single parenthood could drown out any unionization effects. Similarly, Moller and colleagues (2009) find demographics and economic development are more important than state-level institutions for income inequality in U.S. counties. If demographics and economic performance are the dominant influences on U.S. working poverty, unionization might play only a marginal or insignificant role.

### *The Case for Unionization*

Despite these reasons for skepticism, we propose that state-level unionization reduces working poverty. This expectation is theoretically motivated by three literatures: (1) comparative institutions; (2) unionization and earnings; and (3) U.S. states as polities.

First, the comparative institutions literature demonstrates that institutions and power relations between collective actors fundamentally shape inequalities (Brady and Leicht 2008). Institutions and power relations organize the distribution of resources, regulate risks, allocate opportunities, and socialize normative expectations (Brady 2009; Tilly

1998). Institutions reduce the likelihood of poverty-inducing events and mitigate the consequences when such events occur (DiPrete 2002). Power resources theory, which animates much of the comparative institutions literature (Brady 2009; Hicks 1999; Korpi 1983; Moller et al. 2003; Volscho and Kelly 2012), contends that class-based collective political actors shape the distribution of economic resources (Brady, Fullerton, and Cross 2009). To make the distribution more egalitarian, the working class and poor must bond together, form organizations, and politically mobilize in elections and workplaces. Although power resources theory is traditionally used to explain welfare states, it offers a more general model of income distribution (Brady et al. 2009; Korpi 1983). Accordingly, the level of unionization in a state is an important labor market institution, indicating the power resources of labor relative to business and other collective actors.

Consistent with power resources theory, the comparative institutions literature shows that cross-national variation in earnings inequality can be explained by labor market institutions like corporatism and unionization (Blau and Kahn 2002; Koeniger, Leonardi, and Nunziata 2007; Kristal 2010). Scholars have also demonstrated that labor market institutions can explain cross-national differences in low-wage work (Doellgast, Holtgrewe, and Deery 2009; Gautie and Schmitt 2009), poverty (Brady 2009; Moller et al. 2003; Plasman and Rycx 2001), and working poverty specifically (Brady et al. 2010; Lohmann 2009; Zuberi 2006). Despite these contributions, the comparative literature's insights have rarely been applied to the study of U.S. poverty.

Second, an extensive economic and sociological literature shows that unions raise wages (Freeman and Medoff 1984; Kalleberg, Wallace, and Althaus 1981). Cornfield and Fletcher (2001) estimate union members receive a 20 percent wage premium over similar non-union workers. Because wages are a large share of low-income households' economic resources, such wage advantages could lift many households out of poverty.

The union wage premium even applies to low-wage workers with less skill (Eren 2009) or less than a high school education (Maxwell 2007). Although the U.S. poverty literature neglects unionization, scholars of low-wage work have shown powerful effects of unions (Gautie and Schmitt 2009; Newman 1999; Zuberi 2006). Benefits of unionization have been documented for low-wage workers in hospitals (Applebaum et al. 2003), hotels (Bernhardt, Dresser, and Hatton 2003), call centers (Batt, Hunter, and Wilk 2003), and casinos (Waddoups 2001) and for temporary workers in automotive supplier firms, hospitals, and public schools (Erickcek, Houseman, and Kalleberg 2003). These studies demonstrate how unions pressure management for higher wages, restrict the use of contingent workers whose presence would reduce wages, and regulate working conditions.

Although there are benefits to being a union member, the vast majority of workers near the poverty line are unlikely to be unionized. For state-level unionization to reduce working poverty, it must have a contextual effect that spills over to non-union, low-wage workers.<sup>4</sup> Indeed, the literature has found such spillover effects of unionization for non-union workers. For instance, Zuberi (2006) demonstrates how higher unionization in Vancouver versus Seattle contributes to a significantly better environment for even non-union service workers. The classic explanation—contrary to the aforementioned crowding effects—is that unionization poses a threat to non-unionized firms. To discourage unionization, proximate firms raise wages preemptively (Freeman and Medoff 1984; Leicht 1989). Leicht, Wallace, and Grant (1993) demonstrate that the presence of unionization in interdependent industries raises the earnings of the non-union working class. Partly because unions establish contracts that cover non-union workers, unionization also benefits non-union workers, especially in the presence of high union density (Bernhardt et al. 2003; Neumark and Wachter 1995). Non-union firms in states with higher unionization may be forced to

pay more, or else risk losing their workers to better paid union-firms. Furthermore, unions influence the moral economy by cultivating norms of equity and advocating for the expectation of higher pay for all workers. Western and Rosenfeld (2011) argue that unions encourage labor market norms of equity (1) culturally, by disseminating egalitarian discourses; (2) politically, by influencing policy; and (3) institutionally, through rules governing labor markets. Accounting for the effect of unions on non-union wages, Western and Rosenfeld (2011) conclude that the decline of unionization in the United States explains one-fifth to one-third of the growth in earnings inequality since 1973. If these effects are not solely due to constraining the top of the earnings distribution, the decline of unionization has likely increased working poverty.

Third, the comparative institutions and unionization-earnings literatures are relevant here partly because of the literature on U.S. states as polities. In recent decades, social and economic policies have increasingly devolved from the federal government to states (Cancian and Danziger 2009; Zylan and Soule 2000). As a result, states have become more salient settings for the struggles and settlements over the distribution of resources (Moller 2008). Jenkins, Leicht, and Wendt (2006) contend that class forces and political institutions jointly shape policymaking and distribution in U.S. states in ways that steer states toward more or less egalitarian economic development strategies. Building on the comparative institutions literature, scholars in the states as polities literature highlight subnational variation (Moller et al. 2009). Even within and net of federal policies, state-level politics can be independently consequential to inequalities (Moller 2008; Wilkinson and Pickett 2009). Conflicts between business and labor, in terms of regulating the institutional environment for unions, often play out at the state level (Jacobs and Dixon 2010; Tope and Jacobs 2009). Moreover, state-level unionization is a key manifestation of state labor movements and the power resources of labor relative to business (Hicks,

Friedland, and Johnson 1978). U.S. states are thus relevant settings for studying the implications of the comparative institutions and unionization-earnings literatures.

### *Further Questions*

If we observe significant negative effects of state-level unionization for working poverty, four further questions should be addressed. First, given that previous research on working poverty focuses on economic performance, do effects of unionization at least rival those of economic performance? If not, one could argue that economic performance should be the paramount strategy to reduce working poverty, perhaps even if the pursuit of economic performance constrains unionization.

Second, does unionization reduce working poverty net of social policy? Any initial association between unionization and working poverty could be due to the fact that unions encourage generous social policies. An extensive literature identifies unionization as a power resource contributing to the expansion of generous social policies (Brady 2009; Hicks 1999; Korpi 1983). In their study of working poverty across 18 affluent democracies, Brady and colleagues (2010) find the initial negative effects of unionization attenuate when controlling for welfare state generosity. While still consistent with power resources theory, unionization might be only indirectly related to working poverty, through social policies like Temporary Assistance to Needy Families (TANF) and unemployment insurance (UI).

Third, do effects of state-level unionization hold net of household unionization and for non-union households? Any effect of state-level unionization could simply be a compositional effect of having more unionized workers in a state. Less clear is whether unionization also has a contextual effect that spills over into the broader workforce and benefits non-union workers. It would therefore be valuable to test whether unionization reduces working poverty even after controlling for household unionization, and among non-union households.

Finally, is any effect of unionization biased by counterproductively discouraging employment? Unified theory, an alternative to power resources theory within the comparative institutions literature, contends that unionization leads to lower inequality and poverty partly by removing less-skilled workers from the workforce and reducing employment (Blau and Kahn 2002). If high levels of unionization raise wages and labor costs, there could be a rigidity tradeoff such that firms are unable or unwilling to employ greater numbers of marginal workers (Magnani and Prentice 2010). Unionization could thus lead to less employment, despite higher wages and lower poverty among the employed (Walsworth 2010). Indeed, a classic concern has been that unionization increases spells of unemployment for non-union workers (Kahn and Morimune 1977). Any negative effect of unionization on working poverty might then be biased by a selection effect of unionization on employment.

## METHODS

### *Individual-Level Data*

The Luxembourg Income Study (LIS) provides the micro-level data. The LIS is a cross-national archive of nationally representative individual-level datasets. For the United States, the LIS uses the March Current Population Survey (CPS). The LIS cleans the data and creates a new set of standardized variables. The compelling advantage of the LIS over the underlying CPS is the high quality and significantly improved income measures that comprehensively incorporate taxes and transfers. We utilize the seven most recent waves of the LIS for the United States: 1991, 1994, 1997, 2000, 2004, 2007, and 2010. We begin with 1991 because it is the oldest LIS U.S. dataset with a large number of cases per state.<sup>5</sup>

The individual is the unit of analysis. The samples include all individuals in households led by working-age adults (18 to 64 years). In sensitivity analyses, results are consistent if

the sample contains only employed adults. We include the 50 U.S. states and the District of Columbia, which we treat as a 51st state. Table S1 in the online supplement displays descriptive statistics and sources (<http://asr.sagepub.com/supplemental>).

The dependent variable is *working poverty*. A person is working poor if she resides in a household with less than 50 percent of the national median household income *and* at least one employed member (Brady et al. 2010; Lohmann 2009; Newman 1999). Poverty is thus a household-level variable. Because households pool their expenses and resources, if a household is poor, all members are poor. We calculated household income after taxes and transfers using the standardized LIS variable *disposable household income* (DHI). DHI includes cash and non-cash income after taxes and transfers (including food stamps, housing allowances, tax credits like the Earned Income Tax Credit [EITC], and near cash benefits). DHI is adjusted for household size by dividing by the square root of household members. We calculated the poverty threshold using all individuals regardless of age or employment in the same LIS year. We reduced the sample to employed households only *after* calculating the threshold.

This poverty measure follows the vast majority of international poverty studies (Brady 2009; Moller et al. 2003; Rainwater and Smeeding 2004). Although this measure is typically called “relative,” we utilize the national median, not state-specific medians. The threshold is therefore the same in every state and is “absolutely” applied. In the 1991 to 2010 sample, we utilize the national median within each year, which is temporally relative. However, we also use a “constant” threshold based on the 2010 median adjusted for inflation (Chen and Corak 2008). Although the relative measure may be less sensitive to the business cycle and economic development, the constant measure should be responsive. Altogether, these analyses consider a relative threshold applied absolutely across states, a threshold relative to the national

median in each year, and a constant threshold based on the inflation-adjusted 2010 national median.<sup>6</sup>

We eschew the official U.S. measure of poverty because it has very serious validity and reliability problems (Blank 1997; Brady 2009; Rainwater and Smeeding 2004). Partly because it was established with little scientific basis roughly 50 years ago, the thresholds for the official measure are widely understood to be too low (i.e., below 40 percent of the median). The definition of income used in the official measure ignores taxes and tax credits, and inconsistently counts transfers. For example, social security pensions count as income in the official measure, but food stamps, housing subsidies, and childcare vouchers do not. Since the 1990s, the EITC has grown into the largest assistance program for families with children—much larger than TANF. Yet, the official measure ignores the EITC. Over-time comparisons, especially for the working poor, are therefore quite problematic. The official measure also neglects states' taxes and transfers, which further compounds reliability and validity problems. By contrast, the definition of income used here incorporates federal and state taxes and transfers. The LIS measure of income (DHI) includes a much more comprehensive set of income sources than is used in the official measure, which also makes it inappropriate to apply the official poverty threshold to the DHI.

Our definition of working poverty requires that at least one member of a household is employed. We measure *employment* (reference = no one employed) by whether a household has at least one earner. In sensitivity analyses, we defined employment solely as full-time work and included part-time workers with the non-employed. The results are consistent.

Following previous research (e.g., Brady et al. 2010; Blank et al. 2006; Lohmann 2009; Rainwater and Smeeding 2004), we incorporate several demographic characteristics of the household. Using married/cohabiting couples as the reference, we include binary variables *single mother*, *single father*, *female head*

*no children*, and *male head no children*. We measure the presence of the non-working-aged with the *number of children* and binary variables for the presence of a *child under 5 years* and individuals *over 65 years*. We assess a household's labor market standing with characteristics of the lead earner in the household (the person with the greatest earnings, with ties settled by age). Binary indicators for *less than high school* and *college degree or more* (reference = high school degree or some college) measure the lead earner's educational attainment. With White lead as the reference, we include dummies for *African American*, *Latino*, and *other race*. We control for the curvilinear relationship between a lead earner's age and working poverty with binary variables for *under 25*, *25 to 34*, *35 to 44*, and *55 to 64 years* (reference = 45 to 54 years). We also include a binary variable for *multiple earners* in a household (reference = one earner). With private-sector, full-time employed leads as the reference, we include dummies for *public sector* and *part-time*. Finally, we include seven indicators for a lead earner's industry: *agriculture*, *construction*, *wholesale and retail trade*, *transportation*, *FIRE (finance, insurance, and real estate)*, *administration*, and *other services* (reference = manufacturing).

### State-Level Data

*Unionization* is the percent of civilian wage and salary employees age 16 years and older who are members of labor unions, measured in the same year (Hirsch and Macpherson 2003).<sup>7</sup> Effects of unionization include compositional and contextual effects because the LIS does not identify whether respondents are union members. As we will discuss, we evaluate this issue in a replication analysis.

For economic performance, we include three variables measured in the current year. *Gross domestic product per capita (GDP PC)* is in real 2010 dollars. *Economic growth* is the annual rate of change in a state's real gross domestic product (GDP). *Unemployment* rate is a percent of the state's labor

force. GDP PC tracks long-term economic development, and economic growth and unemployment assess the short-term business cycle. In addition, GDP PC captures a state's cost of living and affluence. In additional analyses, we tested the state-level manufacturing share of employment. This variable is insignificant, however, and strongly correlated with GDP PC.

Finally, we consider two measures of state policies measured in the current year. *TANF/AFDC maximum* is the maximum monthly benefit in real 2010 dollars for a family of three for TANF in 1997 to 2010 and AFDC in 1991 and 1994.<sup>8</sup> *UI maximum* is the maximum monthly benefit per worker in real 2010 dollars for unemployment insurance.

In sensitivity analyses, we considered two other commonly studied institutions. First, we tested the minimum wage rate (in real 2010 dollars). In 2010, the minimum wage rate correlates positively with unionization ( $r = .42$ ) but is only weakly negatively associated with working poverty ( $r = -.19$ ). The minimum wage rate never has a significant effect on working poverty and its inclusion does not alter the unionization effect.<sup>9</sup> Second, we tested Democratic control of state government measured as the average of the governor being a Democrat and the proportion of the two houses of the legislature.<sup>10</sup> This variable is not correlated with working poverty, is never significant, and its inclusion does not alter the unionization effect.<sup>11</sup> Furthermore, unionization and Democratic control are likely endogenous to each other (Western 1997). We therefore omit the minimum wage rate and Democratic control from the analyses.

### Analytic Strategy

Our analyses proceed in four stages. The first uses the 2010 LIS across the 51 states and focuses on variation between states.<sup>12</sup> The second pools the seven LIS waves from 1991 to 2010, also across the 51 states. This stage focuses on over-time variation within states. Third, we replicate the analysis with the Current Population Survey for 2004 to 2010

(Integrated Public Use Microdata Series [IPUMS] [King et al. 2010]), controlling for household unionization. Fourth, we assess whether unionization has an effect on employment or the presence of multiple earners, as this may lead to a selection bias.

The first stage examines all individuals in households with at least one employed member and a working-age lead earner. Individuals are nested in the 51 states. The clustering of individuals within states and the inclusion of state-level variables violates assumptions of the standard logistic regression model. In turn, we estimate multi-level logit models.<sup>13</sup> We estimate random intercept models, which can be expressed as two equations (Raudenbush and Bryk 2002). First, the log odds of working poverty ( $\log [p_{ij}/1-p_{ij}]$ ) for the  $i$ th individual in the  $j$ th state is represented by eta ( $\eta_{ij}$ ) and is a function of state intercepts ( $\beta_{0j}$ ) and a set of individual-level fixed coefficients ( $\beta X_{ij}$ ):

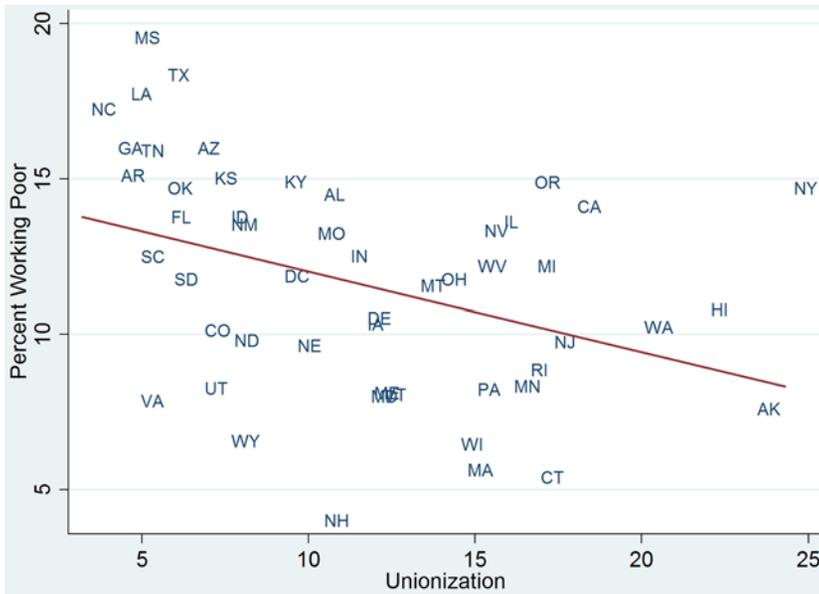
$$\log (p_{ij}/1-p_{ij}) = \eta_{ij} = \beta_{0j} + \beta X_{ij}$$

Second, each state intercept ( $\beta_{0j}$ ) is estimated as a function of an intercept ( $\gamma_{00}$ ), a set of state-level variables ( $\gamma Z_j$ ), and an error term ( $u_{0j}$ ):

$$\beta_{0j} = \gamma_{00} + \gamma Z_j + u_{0j}$$

These multi-level logit models enable us to test effects of state-level unionization net of individual/household characteristics and state-level economic performance.

The second stage analyzes the pooled sample of seven LIS waves, from 1991 to 2010, across the 51 states. Like the first stage, the sample includes individuals in households with an employed member and a working-age lead earner. In this stage, however, individuals are nested in 357 state-years. We employ two-way fixed-effects (FE) models by estimating logistic regression models with fixed effects for the 51 states and for the seven years. The log odds of working poverty ( $\log [p_{ijt}/1-p_{ijt}]$ ) is represented by  $Y_{ijt}$  for individual  $i$ , in state  $j$ , and year  $t$ .  $Y_{ijt}$  is a function of a constant ( $\beta_0$ ), individual-level characteristics



**Figure 1.** Bivariate Association between Working Poverty Rate and Unionization across 51 States ( $r = -.39$ )

( $\beta_X X_{ijt}$ ), state-level variables ( $\beta_Z Z_{jt}$ ), state dummies ( $\beta_S S_j$ ), and year dummies ( $\beta_W W_t$ ):

$$\log(p_{ijt}/1-p_{ijt}) = Y_{ijt} = \beta_0 + \beta_X X_{ijt} + \beta_Z Z_{jt} + \beta_S S_j + \beta_W W_t$$

The state and year dummies correct the non-independence of observations within state and year. We also robust cluster the errors by state-year. The state dummies control for any stable unobserved characteristics with stable effects. There are likely to be stable unobserved characteristics of states—for example, being in the South, right-to-work laws established prior to 1991, or even stable differences in cost of living—that are correlated with unionization or working poverty. Such unobserved characteristics could introduce omitted variable bias, and may account for a significant negative effect of unionization in the multi-level logit models. The state dummies difference out any such stable characteristics and estimate the effect of unionization on within-state temporal variation in working poverty. The year dummies control for any generic change over time across states (e.g., the 1996 welfare reform).

## RESULTS

### Multi-Level Logit Models for 2010

Before turning to the multivariate analyses, we describe patterns in working poverty and unionization in 2010. Figure 1 shows a moderate negative correlation between a state’s unionization and its rate of working poverty ( $r = -.39$ ). Southern states Louisiana, Mississippi, and North Carolina had low unionization and high working poverty. By contrast, more unionized states like Alaska, Hawaii, and Washington had less working poverty. That said, even low unionization cannot account for the fact that nearly a fifth of individuals in employed households were poor in Mississippi and Texas. Also, states like New Hampshire and Wyoming had lower working poverty than would be expected from their moderate unionization. Finally, Figure 1 displays substantial interstate variation in both unionization and working poverty. Union density ranged from 24.3 percent in New York to 3.2 percent in North Carolina. In 2010, 11.3 percent of the employed household sample was poor. However, only 4 percent was working

poor in New Hampshire compared to 19.6 percent in Mississippi.

Table 1 presents multi-level logit models of working poverty. Standardized odds ratios are reported for state-level variables, and odds ratios are reported for individual-level variables.<sup>14</sup> Model 1 includes only individual-level variables. Consistent with previous research and reflecting the large sample, most variables are significant. The largest positive effects are for less than high school, having an under-25 lead earner, and part-time employment. The largest negative effects are for college or higher and multiple earners. For example, in the largest effect at the individual- or state-level, having multiple earners in a household reduces the odds of working poverty by a factor of 5.1.

Model 2 adds state-level unionization, which is significantly negative. For a standard deviation increase in state-level unionization (5.8 percent), the odds of working poverty should decline by a factor of 1.13.

Model 3 adds the three economic performance variables. GDP PC is significantly negative; the unemployment rate is significantly positive, as is, surprisingly, economic growth. For a standard deviation increase in GDP PC, the odds of working poverty decline by a factor of 1.06. For a standard deviation increase in unemployment or economic growth, the odds of working poverty increase by factors of 1.11 and 1.14, respectively. Even with the economic performance controls, unionization remains significantly negative. Moreover, unionization's effect is robust in size, and slightly larger than the effects of GDP PC and unemployment. Economic growth has a comparable effect to unionization, and we will discuss its counter-intuitive positive effect further.

### *Two-Way FE Models for 1991 to 2010*

Figure 2 displays bivariate associations between the 1991 to 2010 change in working poverty rates and the change in unionization across the 51 states. These are the differences in 1991 to 2010 levels, which seem an appropriate comparison given that the FE models

analyze change within states over time. Both relative and constant working poverty declined from 1991 to 2010. Among the employed household sample, 12.3 percent were relatively poor in 1991 compared to 11.3 percent in 2010. Furthermore, constant working poverty declined from 15.9 percent in 1991 to 11.3 percent in 2010. This decline was likely driven by the reduction in lead earners without a high school degree (14.6 percent in the 1991 sample compared to 10 percent in 2010), and the increase in lead earners with a college degree (25.3 percent in 1991 versus 35.3 percent in 2010). A decline in part-time employment and an increase in lead earner's age were also beneficial. Expansion of the EITC certainly lifted many households from working poverty as well. Therefore, a number of changes other than declining unionization slightly reduced working poverty from 1991 to 2010.

The top panel of Figure 2 shows a modest negative correlation between the change in unionization and the change in relative working poverty ( $r = -.25$ ). The bottom panel shows a slightly weaker negative correlation between the change in unionization and the change in constant working poverty ( $r = -.18$ ). In both panels, working poverty declined substantially in California, South Carolina, and Vermont while unionization remained stable or increased. Unionization declined substantially in Hawaii, Michigan, and New Jersey, and working poverty increased or failed to decline. For both relative and constant working poverty, however, the correlation is much weaker than in Figure 1. For instance, unionization declined substantially in Indiana and Wisconsin even though working poverty declined in both states. Incorporating over-time variation thus reveals that the relationship between unionization and working poverty might be less straightforward than was shown in the cross-sectional analysis of 2010.

Table 2 pools the seven LIS waves from 1991 to 2010 and uses two-way FE models to control for differences between states and generic trends over time. Although there is a significant cross-sectional association between

**Table 1.** Multi-Level Logit Models of Working Poverty on Individual- and State-Level Variables in 51 States in 2010 ( $N = 162,564$ ): Standardized Odds Ratios for State-Level Variables and Odds Ratios for Individual-Level Variables (z-scores)

	Model 1	Model 2	Model 3
Unionization		.882** (-2.78)	.892** (-3.05)
GDP PC			.940* (-2.16)
Economic Growth			1.142*** (4.20)
Unemployment			1.109** (2.80)
Single Mother	2.095*** (28.71)	2.095*** (28.71)	2.096*** (28.73)
Single Father	1.371*** (8.14)	1.371*** (8.15)	1.373*** (8.20)
Female Head No Children	1.773*** (14.46)	1.774*** (14.46)	1.776*** (14.50)
Male Head No Children	1.511*** (10.09)	1.511*** (10.10)	1.513*** (10.13)
Number of Children in HH	1.351*** (36.55)	1.351*** (36.56)	1.351*** (36.56)
Child Under Age 5	1.375*** (13.41)	1.375*** (13.40)	1.375*** (13.41)
Over 65 in HH	.631*** (-11.04)	.631*** (-11.03)	.631*** (-11.04)
Less Than High School	2.844*** (41.01)	2.843*** (41.00)	2.843*** (41.00)
College or More	.305*** (-39.23)	.305*** (-39.24)	.305*** (-39.26)
African American	1.657*** (16.55)	1.654*** (16.51)	1.655*** (16.52)
Latino	2.036*** (27.33)	2.035*** (27.33)	2.033*** (27.30)
Other Race	1.771*** (15.93)	1.775*** (16.02)	1.783*** (16.18)
Under 25 Years	2.722*** (26.25)	2.721*** (26.24)	2.724*** (26.27)
25 to 34 Years	1.029 (1.00)	1.029 (.98)	1.029 (.99)
35 to 44 Years	.824*** (-7.04)	.824*** (-7.04)	.824*** (-7.04)
55 to 64 Years	.800*** (-5.91)	.800*** (-5.91)	.800*** (-5.91)
Multiple Earners	.198*** (-79.56)	.198*** (-79.55)	.198*** (-79.54)
Public Sector	.640*** (-11.88)	.639*** (-11.90)	.640*** (-11.86)
Part-Time	4.831*** (77.46)	4.832*** (77.47)	4.830*** (77.45)
Agriculture	1.289*** (3.70)	1.289*** (3.69)	1.290*** (3.71)

(continued)

**Table 1.** (continued)

	Model 1	Model 2	Model 3
Construction	.969 (-.82)	.969 (-.82)	.970 (-.79)
Wholesale and Retail Trade	1.614*** (16.07)	1.614*** (16.08)	1.615*** (16.11)
Transportation	.750*** (-5.77)	.750*** (-5.75)	.751*** (-5.74)
FIRE	1.112** (2.92)	1.112** (2.93)	1.113** (2.95)
Administration	1.101** (2.80)	1.102** (2.82)	1.102** (2.84)
Other Services	1.758*** (13.43)	1.758*** (13.43)	1.759*** (13.45)

Note: Constants not shown. References = married couple, high school degree/some college, White, no child under age 5, lead earner 45 to 54 years, no over 65 member, single-earner household, private, full-time, and manufacturing sector. Odds ratios between .999 and 1.0 rounded to .999; odds between 1.0 and 1.001 rounded to 1.001.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (two-tailed tests).

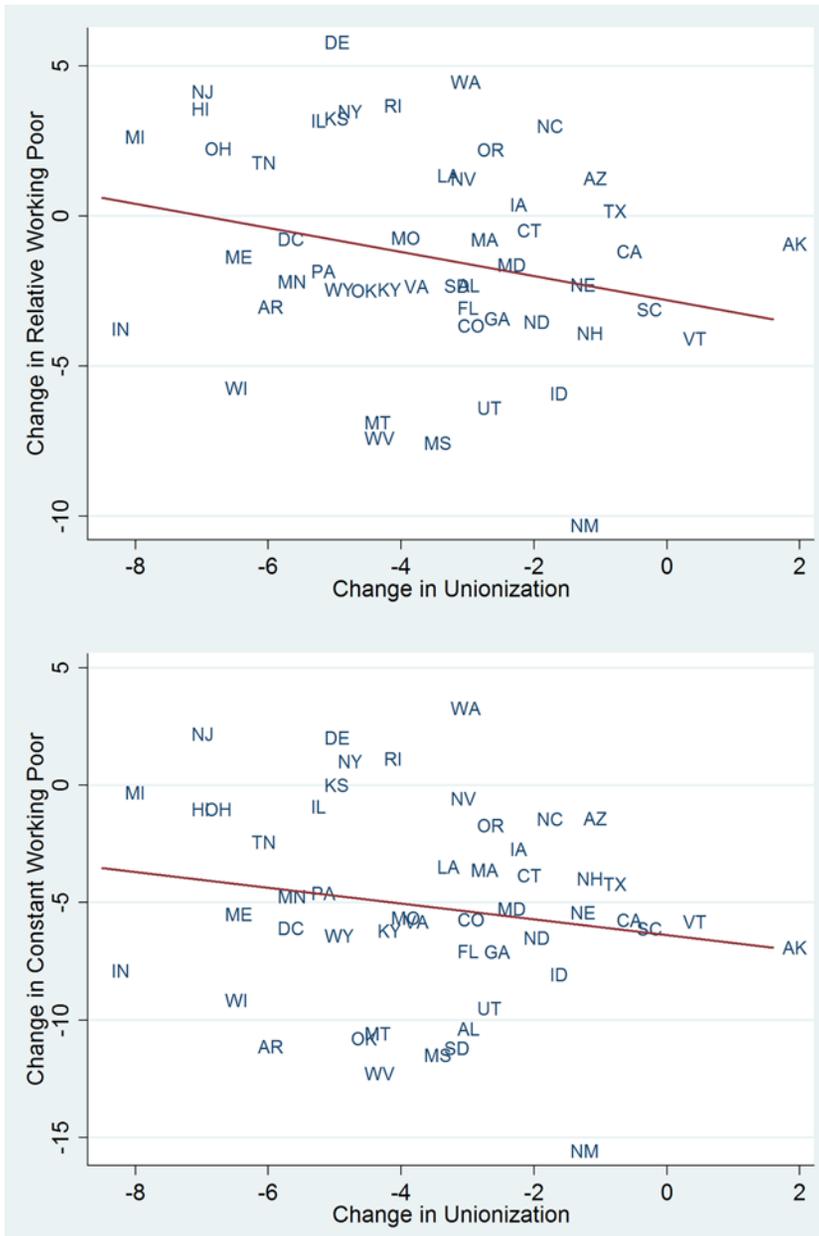
unionization and working poverty in 2010, unobserved stable characteristics of states could explain the significant negative effects in Table 1. We show effects of unionization with and without state-level controls. Individual-level variables are included but not shown. In addition to economic performance, multiple years of data and the two-way FE models enable us to control for two social policies (i.e., TANF/AFDC and UI maximum benefits). It is difficult to control for these policies in the 2010 models because they are fairly highly correlated with each other and with state-level unionization.<sup>15</sup> Therefore, the two-way FE models better enable us to identify the unique effects of each variable.

Table 2 shows that unionization has a significant negative effect before and after controlling for other state-level variables. Also, the effect is significantly negative for both the temporally relative and constant measures of poverty. We interpret unionization effects with the full set of state-level controls. For a standard deviation increase in unionization, the odds of relative working poverty decline by a factor of 1.24. Thus, the effect is larger in the two-way FE models than in the 2010

models. This larger effect of unionization is mirrored in the constant poverty models. For a standard deviation increase in unionization, the odds of constant working poverty decline by a factor of 1.19.<sup>16</sup>

Two economic performance variables have robust significant effects. For a standard deviation increase in unemployment, relative or constant working poverty is expected to increase by a factor of 1.1. Similar to the 2010 models, economic growth has a counterintuitive positive effect, which partially offsets the business cycle effect of unemployment. For a standard deviation increase in economic growth, the odds of constant or relative working poverty increase by a factor of 1.04. This finding is fairly robust in a variety of sensitivity tests as well.<sup>17</sup> Unlike in the 2010 models, GDP PC is insignificant for both relative and constant working poverty.

Both state policy variables are negatively signed for both dependent variables. However, only the TANF/AFDC maximum benefit has a significant effect, and only for constant working poverty. For a standard deviation increase in the TANF/AFDC maximum, the odds of constant working poverty



**Figure 2.** Bivariate Associations between 1991 to 2010 Change in Working Poverty Rates and 1991 to 2010 Change in Unionization across 51 States  
 Note: Top panel is for relative poverty ( $r = -.25$ ); bottom panel is for constant poverty ( $r = -.18$ ).

decline by a factor of 1.09. Thus, constant working poverty has not declined as quickly as it could have because the average TANF/AFDC maximum declined over time.<sup>18</sup>

Economic performance and policies are relevant, but unionization has larger effects than all other state-level variables. Recall that

unionization has standardized inverse odds ratios of 1.24 to 1.19. By contrast, the other state-level variables have odds ratios at or below an absolute value of 1.1. Furthermore, effects of unionization only modestly attenuate when we control for other state-level variables. Standardized odds for unionization

**Table 2.** Two-Way Fixed-Effects Logit Model of Working Poverty on Individual- and State-Level Variables in 51 States, 1991 to 2010 ( $N = 957,105$ ): Standardized Odds Ratios and ( $z$ -scores)

	Relative		Constant	
	Model 1	Model 2	Model 3	Model 4
Unionization	.780*** (-4.61)	.805*** (-4.46)	.820*** (-3.76)	.844*** (-3.67)
GDP PC		1.017 (.33)		1.017 (.36)
Economic Growth		1.042** (3.04)		1.041** (2.90)
Unemployment Rate		1.095*** (4.09)		1.099*** (4.26)
TANF/AFDC Maximum		.921 (-1.85)		.917* (-2.23)
UI Maximum		.960 (-1.68)		.960 (-1.71)

Note: Constants not shown. All models control for individual-level variables in Table 1 and fixed effects for state and year (not shown).

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (two-tailed tests).

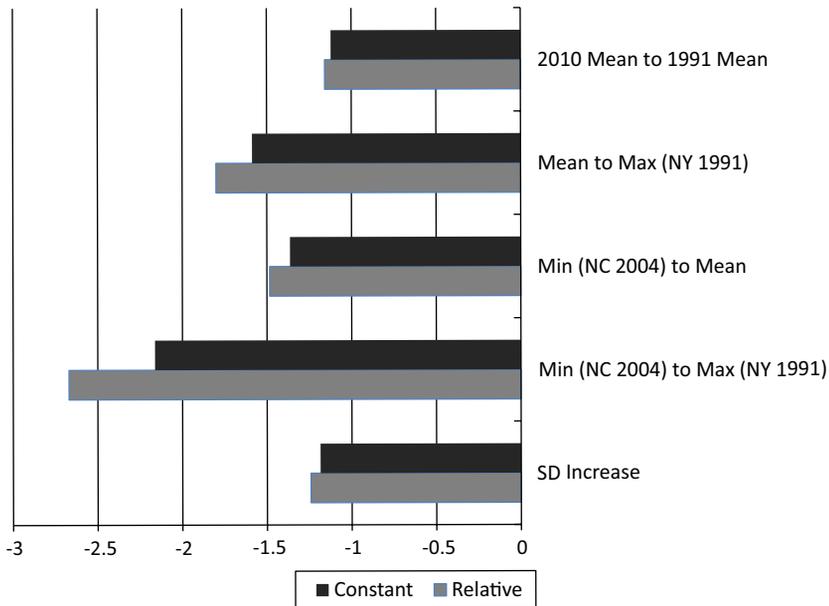
decline from .780 to .805 or .820 to .844. This demonstrates that most of unionization's effects are not mediated by the two policy variables—especially as the policy variables are not robustly significant.

To illustrate the effects of unionization, Figure 3 displays a set of counterfactual simulations for relative and constant poverty. For reference, we show the standardized odds from Table 2 at the bottom of Figure 3. We also compare unionization effects to effects of the individual-level variables (not shown).

The mean unionization across states was 14.95 in 1991 and 11.02 in 2010. Figure 3 shows that if unionization remained at 1991 levels in the typical state in 2010, the odds of relative working poverty would decline by a factor of 1.16. Conversely, and net of all individual- and state-level controls, declining unionization from 1991 to 2010 increased the odds of working poverty by a factor of 1.16 to 1.12. This effect is comparable to the negative effect of a household's lead earner being 25 to 34 years old or 55 to 64, instead of 45 to 54. For the average individual, the mean state-level unionization was 13.5 in 1991 to 2010. If the mean rose to the maximum (New York

in 1991), the odds of working poverty would decline by a factor of 1.8 to 1.59. This effect is larger than the effects of being a single-mother household or having an African American lead earner. If the minimum (North Carolina in 2004) rose to the mean, the odds would decline by 1.48 to 1.36. This effect is larger than effects of an additional child or a public-sector lead earner. Finally, if the minimum (North Carolina in 2004) rose to the maximum (New York in 1991), the odds of working poverty would decline by a factor of 2.7 to 2.2. This effect is larger than most individual-level variables, and close to the effect of the lead earner not having a high school degree. The only larger effects are having a college degree (-), a part-time lead earner (+), and multiple earners in the household (-).

In summary, state-level unionization has a larger effect than economic performance and social policies. On balance, the individual-level effects of education, part-time employment, and having multiple earners are arguably the most important predictors of working poverty. Still, effects of unionization rival most other individual-level characteristics.



**Figure 3.** Reduced Odds of Being Working Poor with Counterfactual Values of State-Level Unionization (estimates based on Models 2 and 4 in Table 2)

### *Replication Analysis of U.S. Current Population Survey, 2004 to 2010*

Previously, we asked whether the effects of state-level unionization hold net of household unionization and for non-union households. Unfortunately, the LIS lacks information on individual-level union membership. However, the U.S. LIS data are based on the Current Population Survey, which contains data on union membership. As noted earlier, the principal advantage of the LIS is the improved measure of household income. We are able to approximate the LIS income measures only for the years 2004, 2007, and 2010 because the IPUMS CPS only began to provide data on tax credits (especially the EITC) in 2004. Therefore, this replication with the CPS is forced to rely on 2004, 2007, and 2010 data (individuals nested in 153 state-years).<sup>19</sup> In addition, the CPS asks the union membership question only for one-fourth of the sample (the two outgoing rotation groups). As a result, the CPS samples are much smaller than the LIS samples.

Table 3 includes all individual- and state-level variables included in the LIS models. For purposes of comparison, we first show the LIS results for 2004 to 2010. In this subsample of years, state-level unionization continues to have a significant negative effect for relative and constant working poverty. Indeed, effects are slightly larger in 2004 to 2010 than in 1991 to 2010.

We then replicate the same models using the CPS. In the CPS models, effects of state-level unionization are even larger than in the LIS models. For example, with the CPS, the standardized odds are .77 for relative poverty (.80 with LIS) and .72 for constant poverty (.81 with LIS). Next, we estimate the effect of state-level unionization while controlling for whether a household had a union member. Unsurprisingly, household unionization has a large significant negative effect. Being in a union household reduces the odds of working poverty by a factor of about 1.9 for relative and constant working poverty. Still, effects of state-level unionization remain significant and only attenuate a very small amount when we control for household unionization. The

**Table 3.** Replication Analysis of LIS and Current Population Survey in 51 States, 2004 to 2010, Controlling For or Omitting Unionized Households: Standardized Odds Ratios for State-Level Unionization and Odds Ratios for Unionized Households and (z-scores)

	LIS Relative	CPS Relative	LIS Constant	CPS Constant
State-Level Unionization	.804** (-2.69)	.774* (-2.43)	.809** (-2.67)	.727** (-2.97)
Unionized Household		.517*** (-4.92)		.515*** (-4.86)
Sample	Employed 505,486	Employed 129,692	Employed 505,486	Employed 129,692
N				Non-Union Employed 116,219

*Note:* All models control for individual- and state-level variables included in Table 2. Models 2 and 4 (not shown). \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (two-tailed tests).

standardized odds ratio for state-level unionization is .774 versus .77 using the relative measure, and .727 versus .722 using the constant measure, with the household control.

Next, we drop unionized households from the sample and estimate the effect of state-level unionization on non-union employed households. After dropping union households, state-level unionization actually has the largest effects of any model in Table 3. For a standard deviation increase in state-level unionization, relative working poverty in non-union households is expected to decline by a factor of 1.3. Similarly, constant working poverty in non-union households is expected to decline by a factor of 1.4.

Table 3 confirms that state-level unionization has a contextual effect on the broader workforce that is not simply a compositional effect. The negative effects on working poverty are not confined to unionized workers. Moreover, the benefits of household union membership shown with the CPS do not undermine the salience of state-level unionization. Rather, household union membership represents an additional and complementary way in which unionization reduces working poverty.

### *Selection into Employment and Multiple Earners*

Because our samples contain only employed households, the effects of unionization on working poverty might conceal a selection effect into employment. If unionization discourages employment, the remaining sample of employed households could be selectively less likely to be poor. The large effect of multiple earners also makes it worth considering whether state-level unionization discourages households from having multiple earners. In both cases, if unionization discourages employment, unionization might counterproductively undercut its equalizing effects on working poverty. Table 4 summarizes analyses predicting employment (among all working-age households) and multiple earners (among employed households). These analyses parallel the multi-level logit models of 2010

and two-way FE models of 1991 to 2010. Furthermore, these analyses show the effects of unionization with and without state-level controls.

Table 4 shows that unionization does not significantly reduce employment. In 2010, it is not remotely significant. In the 1991 to 2010 pooled sample, it is nearly significantly positive. We thus find no evidence of a selection effect such that unionization reduces working poverty by discouraging employment.

Table 4 also shows that unionization does not significantly reduce the odds that an employed household contains multiple earners. Indeed, in 2010, unionization is significantly positively associated with multiple earners. This implies that unionization might reduce working poverty even further by encouraging this poverty-reducing household characteristic. That said, unionization is not significant in the two-way FE models, so the more cautious interpretation is that it has no effect on multiple earners.

## **DISCUSSION**

U.S. poverty research has devoted far more attention to joblessness than to working poverty. This is unfortunate given that the working poor are a much larger population than the unemployed poor, employment does not guarantee an escape from poverty, and the working poor arguably represent the most typical poor household. This study examines working poverty across the United States from 1991 to 2010, using state-level data on unionization and other factors. Our study utilizes several analytic strategies and exploits variation between and within states over time. We examine a relative and a constant measure of poverty. In addition to unionization, we consider demographics, economic performance, and social policies. Furthermore, we examine the effects of state-level unionization net of household union membership and for non-union households, and scrutinize selection into employment. We ultimately demonstrate that state-level unionization is a key institution shaping working poverty.

**Table 4.** Selection Models of Employment and Multiple Earners on Individual- and State-Level Variables in 51 States: Odds Ratios and (z-scores)

	Multi-Level Logit of Employment in 2010		Two-Way Fixed-Effects Logit of Employment 1991 to 2010		Multi-Level Logit of Multiple Earners in 2010		Two-Way Fixed-Effects Logit of Multiple Earners 1991 to 2010	
Unionization	.999 (-.06)	1.003 (.32)	1.020 (1.62)	1.020 (1.67)	1.015* (2.02)	1.019** (3.29)	.996 (-.60)	.995 (-.83)
Economic Growth		.991 (-.41)		1.005 (.81)		.988 (-.76)		.996 (-1.22)
GDP PC		1.001 (1.08)		1.001 (.03)		1.001 (1.20)		.999 (-4.2)
Unemployment		.925*** (-3.63)		.954** (-3.29)		.910*** (-5.99)		.974** (-3.29)
TANF/AFDC Maximum				.999*** (-4.05)				.999 (-1.94)
UI Maximum				1.001 (1.13)				1.001* (2.16)
N	181,550		1,050,340		141,842		830,430	

Note: Samples for the employment models are households headed by working-aged adults. Samples for the multiple earners models are employed households headed by working-aged adults with multiple working-aged adults present. Models for multiple earners contain the individual-level variables from Table 1 (and the two-way FEs). By definition, models for employment omit multiple earners, part-time employment, and industry dummies (because LIS data contain only information on current employment). Because of very limited variation, employment models also omit individuals over age 65 in households. Odds ratios between .999 and 1.0 rounded to .999; odds between 1.0 and 1.001 rounded to 1.001.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$  (two-tailed tests).

Indeed, unionization is the most important state-level influence on individual working poverty.

We find a similar demographic profile for working poverty as previous research. Most important are whether a household’s lead earner lacks a high school degree, has a college degree, or is employed part-time, and whether a household contains multiple earners.

Beyond individual characteristics, economic performance influences working poverty. Although GDP PC does not have a robust effect, working poverty increases when unemployment and economic growth increase. The effects of growth are counterintuitive because working poverty should decline with economic expansion. Note that these effects are fairly robust for both relative and constant measures of poverty (see note 17). Plausibly, growth exhibits a positive effect because short-term economic expansions in the 1990s and 2000s occurred mainly through rising affluence for the top shares of the income dis-

tribution and stagnation or decline for the bottom half (Blank 2009). Also, recent economic expansions—for example, the post-2001 period—that featured rising productivity and growth without significant declines in unemployment (Freeman and Rodgers 2005) were less effective at reducing working poverty. The positive effects of growth may thus be partly a byproduct of the period studied. Still, unemployment appears to be the more important aspect of the business cycle.

State-level social policies also matter to working poverty. Although UI maximum benefits are not significant, constant working poverty is lower in states with higher TANF/AFDC maximum benefits. Because social policy is a key feature of a state’s institutional context, these effects can be viewed as supportive of institutional explanations of inequality (Brady 2009; Brady et al. 2009; Korpi 1983; Lohmann 2009; Moller et al. 2003).

Despite the relevance of policies and economic performance, unionization has the largest

effect of the state-level variables. In the two-way FE models, a standard deviation increase in unionization reduces the odds of working poverty by a factor of 1.24 to 1.19. The effects of state-level unionization are robust even when controlling for household unionization or dropping union households from the sample. In addition, the effects of unionization on poverty among the employed are not biased by a selection effect on employment or multiple earners. Finally, the effects of unionization are actually larger and even more significant when we control for unobserved state characteristics and generic temporal change in two-way FE models.

We proposed that our study could build on three literatures, and our findings reinforce those literatures. Consistent with the unionization-earnings literature, and despite plausible reasons for skepticism, we show that unions clearly benefit working-poor households. Consistent with the states as polities literature, U.S. states are salient settings for struggles and settlements over the distribution of resources. The relative power of collective actors in states, and the institutions they enact, matter net of nationwide trends, and may become even more consequential with increasing devolution. Consistent with the comparative institutions literature, we affirm that institutions and power relations between collective actors are fundamental causes of inequalities (Brady et al. 2009). More specifically, we endorse a broad version of power resources theory, which contends that unionization matters to distribution independent of social policy (Brady 2009; Korpi 1983; Volscho and Kelly 2012).

There are a number of plausible reasons why state-level unionization reduces working poverty. Unions organize the distribution of resources by raising wages and benefits, and regulate risks by enforcing safety regulations and increasing job security. Unions also allocate opportunities by expanding and protecting quality employment (e.g., in the public sector), and socialize normative expectations by encouraging equity.<sup>20</sup> Unions reduce the likelihood of poverty-inducing events like downward job mobility, pay cuts, and injuries.

Furthermore, unions mitigate the consequences when such events occur by elevating the pay of other household members and by insuring against loss through the cumulative advantages of better pay before such events. Although we control for maximum AFDC/TANF and UI benefits, unionization likely also increases other forms of public benefits.

Beyond such unobserved theoretical mechanisms, Table 5 provides some concrete empirical evidence on how unionization reduces working poverty. To do so, we examined effects of state-level unionization on the two principal components of household income among employed households: labor income and state transfers (in real 2010 dollars).<sup>21</sup> Specifically, we show separate effects of unionization for the bottom and top halves of the income distribution because the bottom half is the group at risk of working poverty. Table 5 shows that unionization significantly increases labor income and state transfers in the bottom half of the distribution. Unionization is insignificant, however, for both outcomes in the top half of the distribution. Therefore, unionization lifts households out of working poverty by raising the earnings and transfers of households in the bottom half of the distribution, but has no effect on earnings and transfers in the top half of the distribution.

One could reasonably ask whether unionization benefits all segments of the working poor. Unionization might only benefit traditionally unionized or protected insiders, such as men, Whites, and public sector or manufacturing workers. These groups are already less likely to be working poor; unionization might thus fail to benefit certain disadvantaged groups. Table S3 in the online supplement summarizes analyses of effects of overall state-level unionization decomposed by demographic groups and industries/sectors. We find that unionization significantly reduces working poverty among adult women and men, and among households with low-educated, African American, and Latino lead earners. However, unionization's effect for single-mother households is only significant for constant working poverty. Unionization also significantly

**Table 5.** Two-Way Fixed-Effects OLS Models of Household Labor Income, Household State Transfers, and Household Tax Rate on Individual- and State-Level Variables in 51 States, 1991 to 2010: Coefficients and (*t*-scores)

Dependent Variable	Unionization Coefficient
Below Median Equivalized Income ( <i>N</i> = 433,224)	
Real Household Labor Income in 2010 dollars (equivalized)	89.608*** (7.47)
Real Household Transfers in 2010 dollars (equivalized)	233.865*** (15.15)
At or Above Median Equivalized Income ( <i>N</i> = 523,881)	
Real Household Labor Income in 2010 Dollars (logged and equivalized)	-.001 (-1.35)
Real Household Transfers in 2010 Dollars (logged and equivalized)	.0003 (.22)

Note: Each cell represents a separate model. All models control for individual-level variables in Table 1, state-level variables in Table 2, and fixed effects for state and year (not shown). Dependent variables are not logged in the median samples because the unlogged versions are not skewed.

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001 (two-tailed tests).

reduces working poverty among households where the lead earner is employed in the private, public (relative: *p* < .10, constant: *p* < .05), manufacturing, or non-manufacturing sectors.<sup>22</sup> Ultimately, unionization appears to reduce working poverty for a broad variety of demographic groups and sectors.

From 1991 to 2010, working poverty declined modestly in the average state and across the United States (see Figure 2). This decline is perhaps surprising given that earnings inequality grew substantially over this period. As mentioned earlier, the decline was most likely driven by increased education and the expansion of the EITC. Because the decline in working poverty coincided with declining unionization, one could conclude that declining unionization was not particularly problematic for working poverty. A more appropriate interpretation, however, is that working poverty would have declined much more rapidly if unionization had remained stable or increased. Our counterfactual comparisons (see Figure 3) suggest the decline in unionization increased working poverty. Net of all individual- and state-level controls, declining unionization from 1991 to 2010 increased the odds of working poverty by a factor of 1.16 to 1.12.

Therefore, the decline of unionization hindered the decline in working poverty.

Our results suggest several policy implications. First, institutions and laws affecting unionization are also effectively social policies for working poverty (Newman 1999). A political-institutional environment that discourages unionization will likely lead to more working poverty. Scholars have shown that legal permissiveness to employer opposition, cumbersome union election rules, and broader political-economic changes present barriers to labor mobilization (Cornfield and Fletcher 2001; Jacobs and Dixon 2010; Tope and Jacobs 2009; Western 1997). Our study implies that such factors have, under the surface, increased working poverty. Second, a series of recent political efforts have sought to weaken public sector unionization. Although these efforts are often justified in terms of economic competitiveness and fiscal necessity, our results suggest they may be counterproductive. If any economic or job growth actually occurs because of deunionization, it is more likely to be in low-wage work. Even if deunionization reduces public sector costs, the resulting increase in working poverty may lower tax revenue as well. Third, because

unionization is more salient than economic performance, states will be much less effective in reducing working poverty if they prioritize economic development over, or by undercutting, unionization.

In addition to the points raised earlier, future research can extend the present study in several ways. First, because U.S. poverty research has devoted so much more attention to joblessness, there is certainly a need for further research on working poverty. Second, scholars can utilize this research design to examine variation in working poverty across other spatial units like cities and counties. Third, given the differences in working poverty across industries (see Table 1), and because unionization scholars often study industries, it would be valuable to more deeply interrogate industry differences and industries within regions and states. Tables S3 and S4 in the online supplement show initial analyses across broad sectors, but more fine-grained comparisons would be useful.

We conclude by underlining one final implication of this study. Most American poverty research continues to concentrate solely on the United States. The field has thus evolved rather separately and without a full dialogue with international poverty research. One consequence is that American poverty research tends to neglect institutions that have been widely studied in the comparative literature. Instead, American poverty research has tended to focus on joblessness, and economic performance as the key contextual factor shaping poverty. By embracing the comparative literature on institutions and power resources, this study shows the applicability of recent international poverty research and demonstrates the salience of political and labor market institutions. Even while studying the United States, poverty scholars can learn much from international research on labor markets, inequality, and poverty. Whereas we show that institutions shape working poverty, scholars should explore how other, more well-studied aspects of poverty in the United States—single-mother poverty, jobless poverty, and concentrated inner-city poverty—are

also shaped by institutions and power relations between collective actors.

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## Notes

1. In our sample, about three-quarters of working-age poor households contain a worker.
2. The subject index of Blank and colleagues (2006) *Working and Poor* includes only one mention of unions (p. 374), which discusses the declining receipt of unemployment insurance. Wilson (1996:28) briefly acknowledges declining unionization for less-skilled workers. Blank (1997:67) mentions unions only while noting technology and globalization contributed to the decline of union jobs. Cancian and Danziger (2009) mention teacher unions and unions' historic resistance to health-care reform. The only other mention is Blank's (2009:77) brief discussion of how the decline of unions is worse among less-skilled workers. There is no reference to unionization or labor unions in the extensive indexes of Danziger and Haveman (2001), Danziger, Sandefur, and Weinburg (1994), Jencks and Peterson (1991), or O'Connor's (2001) history of U.S. poverty research.
3. Unionization's decline was even more rapid in countries like Australia, Germany, and New Zealand, where rates fell from over 50 percent in the 1970s to around 20 percent by 2011. Still, unionization remained relatively stable, near 30 percent, in other liberal market economies like Canada and the United Kingdom (Visser 2011).
4. This reflects an older argument in the labor market segmentation literature that unionization unites workers and raises earnings of non-members (Gordon 1972).
5. The 1991 dataset has more than 155,000 cases; the 1994 to 2010 datasets all have more than 128,000 cases. By contrast, the 1986 dataset includes fewer than 32,000 cases. Because large states are a substantial share of the sample, the 1986 dataset might not be representative of midsized and smaller states.

6. Table S2 in the online supplement displays sensitivity analyses varying the thresholds from 10 to 90 percent of the median (with 1991 to 2010 models). The number of employed households below the lower thresholds is very small in many state-years. As a result, unionization becomes less significant at the lower thresholds. Still, unionization is always negatively signed, often near significant, and becomes significant above 40 percent for relative poverty and above 20 percent for constant poverty.
7. In other analyses, we lagged unionization one year. Results were consistent, in part because unionization correlates over .98 with the value in the preceding year.
8. The maximum AFDC/TANF plus food stamp benefits might be preferable. However, the state-level correlation between the two measures is over .95, which suggests little loss of information.
9. In 2010, the  $z$ -score is  $-.33$ . For 1991 to 2010, the  $z$ -score is 1.24 for relative poverty and .95 for constant poverty. We suspect the lack of significance is partly due to little interstate variation in minimum wages. The coefficient of variation for the minimum wage in 2010 is only .05. By contrast, the coefficient of variation for unionization is .49, and all other state-level variables are greater than .23.
10. This variable is lagged one year. For Nebraska, we used the Democratic proportion of congressional representatives as a proxy for the nonpartisan state legislature. For Washington, DC, we imputed Democratic control of the governor and state legislature.
11. The correlation with relative working poverty is  $-.04$  in 2010, and  $-.01$  in 1991 to 2010. In 2010, Democratic control has a  $z$ -score of 1.01. For 1991 to 2010, Democratic control has a  $z$ -score of .05 for relative working poverty and  $-.22$  for constant working poverty.
12. One may be concerned that the 2010 time point occurred during the Great Recession. However, in analyses available upon request, we replicated the cross-sectional analysis for each of the seven years and results were consistent.
13. Specifically, we estimate `xlogit` in Stata with adaptive quadrature and 30 integration points (Rabe-Hesketh and Skrondal 2008).
14. Standardized odds multiply the coefficient by the standard deviation of the independent variable and then exponentiate. We interpret the magnitude of odds less than one in terms of inverse odds ( $-1/\text{odds}$ ).
15. In 2010, state-level unionization correlates .67 with TANF maximum benefit and .50 with UI maximum; TANF maximum and UI maximum correlate at .44.
16. As a robustness check, we dropped one year at a time. Across the 14 models, unionization was always significantly negative for relative and constant poverty. We also dropped one state at a time, and unionization was always significantly negative across the 102 models for relative and constant poverty.
17. Economic growth remains significantly positive if we drop any of the 51 states and remains fairly robustly significant if we drop any years ( $p < .05$  dropping any year 1994 to 2007;  $p < .10$  for relative poverty dropping 1991;  $p = .15$  for constant poverty dropping 1991;  $p = .10$  for constant poverty dropping 2010). Economic growth is robustly significant if we remove GDP PC. Economic growth is only near significant if both unemployment and GDP PC or unemployment are dropped in the 1991 to 2010 models. Yet, it remains significant under all conditions in the 2010 models. Economic growth is only modestly correlated with other state-level variables ( $r < .30$ ).
18. Across the 51 states, the mean TANF/AFDC maximum fell from \$610.96 in 1991 to \$437.21 in 2010 (in real 2010 dollars).
19. We can approximate the LIS measure of household income for 2004 to 2010, and find similar levels of working poverty with the CPS as with the LIS. However, we are unable to exactly re-create the LIS income measure because of small differences in the calculation of taxes and the inclusion of some near-cash transfers. Furthermore, because the LIS cleans and creates a new set of standardized variables, we cannot exactly replicate the individual-level controls. As a result, the effects of independent variables are somewhat different. Prior to the 2004 CPS, we are simply unable to make these data comparable.
20. Some may suspect a spurious correlation between unionization and poverty because states with large public sectors might have higher unionization and lower poverty. However, this is unlikely. Our models control for public employment at the individual level and the effects of state-level unionization are net of this. Therefore, public employment would need to have a contextual effect on non-public sector workers, and this contextual effect would have to cancel out the unionization effect. Also, the models control for two key social policies and state fixed effects, and we also tested minimum wages and Democratic party control of state government. It is unlikely that public sector size has a direct effect net of all these state characteristics. Public employment is better thought of as a mechanism between unionization and working poverty, because unionization likely increases public employment and the compensation of public employees. Even if large public sectors provided services that boost the capability of the poor and near poor, this would manifest through greater employment. Because we already control for part-time employment, and unionization has no effect on employment or multiple earners, this probably cannot explain the effects of unionization.
21. An alternative approach would examine pre-fisc income or pre-fisc working poverty. We prefer this approach because labor income (i.e., earnings) and transfers are more concrete and precise. In other analyses, we found consistent results for unionization effects

in the entire distribution, and below the 90th, 80th, and 70th percentile of the median equivalized income.

22. As a further step, Table S4 in the online supplement summarizes analyses decomposing both unionization and the sample by major industry/sectors (e.g., public sector unionization predicting public-sector working poverty). Table S4 should be read with caution because the cell sizes are often quite small (e.g., Washington, DC had zero unionization in manufacturing in 2007 and 2010). Still, the table shows that sector-specific unionization has a significant negative effect in the private and manufacturing sectors; effects are not significant, however, in the public and non-manufacturing sectors.

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