

**A Paper Series Commemorating the 75<sup>th</sup> Anniversary of the  
Fair Labor Standards Act**

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This paper series was commissioned in collaboration with the Institute for Research on Labor and Employment at the University of California, Berkeley.

These papers were prepared with funding from the U.S. Department of Labor. The views expressed are those of the authors and should not be attributed to the Federal Government or the Department of Labor.

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## Celebrating 75 Years of the Fair Labor Standards Act: A Working Paper Series

With this Department of Labor (DOL) Fair Labor Standards Act (FLSA) Working Paper Series, the department continues to celebrate the FLSA's 75th anniversary. The FLSA established several of the most important protections for workers today that continue to guide their path to the middle class, including the minimum wage, overtime pay, and restrictions on child labor. It also established the Wage and Hour Division to enforce these requirements, as well as many subsequent laws enacted to protect American workers, such as the Family and Medical Leave Act. A worker's right to a fair day's pay for a fair day's work is grounded in the ideals that led to passage of the FLSA.

To commemorate the passage of the FLSA, in November 2013 the Labor Department invited researchers, policy experts, advocates, and workers to a forum on the past, present, and future of the act. As a part of this forum, several academics and researchers presented information and findings from their research on the FLSA, labor standards, and other worker issues that are captured here in this working paper series. The framework and agenda for the panels were developed in collaboration with Professors Michael Reich and Jesse Rothstein of the Institute for Research on Labor and Employment at the University of California, Berkeley, and coordinated with the forthcoming (2014) *Industrial Relations* Special Issue on the FLSA.

These papers discuss a number of critical and timely policies, including: raising the minimum wage; protecting tipped workers; introducing paid leave; and increasing protections for contract workers, temporary workers, home care and domestic workers. The FLSA has provided a strong foundation for protecting the nation's workforce, but one that must be built upon. These papers offer several policy considerations for the FLSA in the 21<sup>st</sup> century.

Sincerely,

A handwritten signature in cursive script that reads "Laura Fortman".

Laura Fortman  
Deputy Administrator  
Wage and Hour Division  
United States Department of Labor

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# **Waiting for Change: Is it Time to Increase the \$2.13 Subminimum Wage?**

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## **Abstract**

The federal subminimum wage for tipped workers is \$2.13 an hour and has been for over two decades. The rationale for the lower subminimum wage for tipped workers is the ‘tip credit’ provision which allows employers to use tips, provided by customers, as credit towards a workers regular minimum wage. As with the regular minimum wage there is state variation in the subminimum wage to exploit. A panel of Quarterly Census of Employment and Wages from 1990q1 through 2012q3 is used to estimate earnings and employment effects of both minimum wages on limited- and full- service restaurants. Both wage floors indicate positive and statistically significant earnings effects for full-service restaurants but only on the minimum wage for limited-service restaurants. Employment estimates that include geographic controls that better account for unobserved heterogeneity are small and not distinguished from zero for the tipped wage -0.012 (-0.005) and the minimum wage -0.026 (-0.045) in the full (limited) service sector.

I thank Rachel West and Dan Thompson for excellent research assistance. Arindrajit Dube, Michael Reich and Ben Zipperer provided invaluable suggestions and comments. I am appreciative of generous support from the Ford Foundation.

*This paper was prepared with funding from the U.S. Department of Labor. The views expressed are those of the authors and should not be attributed to the Federal Government or the Department of Labor.*

## 1. Introduction

The minimum wage is one of the most researched areas in labor economics with a vast body of literature that dates back nearly seventy years (Brown 1999). Research proliferated as variation in state minimum wage policies gained steam over the last several decades. However, research, debate and policy has largely ignored the lesser known subminimum wage received by tipped workers (also referred to as the tipped or cash wage). That there are two federal wage floors is unknown to many and the existence of the federal subminimum wage—at \$2.13 since 1991—often comes as a bit of a surprise.<sup>1</sup>

The rationale for the lower subminimum wage for tipped workers is the ‘tip credit’ provision. The 1966 Fair Labor Standards Act amendments expanded wage protections to restaurant, hotel and other service workers but also allowed for a tip credit whereby employers may use tips, provided by customers, as credit towards a workers regular minimum wage. Today, at the federal level, the maximum tip credit is \$5.12—which is the difference between the regular \$7.25 minimum wage and the \$2.13 subminimum wage. At the federal level, the tip credit allows an employer to pay workers an hourly wage of \$2.13 as long as this base wage combined with additional tipped income equates to at least the regular minimum wage. Thus, the subminimum wage and the tip credit allowance is a zero sum game—an increase in one translates into a decrease in the other.

There has been little research inquiry into the subminimum wage and the tip credit provision thus the effects of each are not well understood. Given the fast growth in the restaurant industry it is

<sup>1</sup> There is also a youth wage that allows employers to pay employees under 20 years of age a lower wage (\$4.25) for a limited period (90 calendar days, not work days) after they are first employed.



important to know the dynamics of the wages floors. Since, 1990 private sector employment grew by approximately 22% while full-service restaurant employment grew by 72% (Figure 1). The main focus of this paper, as with much of the literature on minimum wages, is to estimate earnings and employment effects of the subminimum wage. Though there has not been any movement at the federal level on the subminimum in over two decades there is more than ample variation due to state enacted policies. Just as many states enact regular minimum wages above the federal level, so too have states adopted subminimum wages above the federal level. The state variation in the regular and the subminimum is the identification strategy used to estimate earnings and employment effects for limited- and full-service restaurants of which both are intense users of low wage workers.

After more than two decades of the \$2.13 for the federal sub-wage floor the most basic policy question is whether it can be raised without contributing to employment losses and would the workers benefit in the form of higher earnings. Otherwise, if the tipped credit allowance were decreased or abandoned all together what would the effect be on employment and earnings of tipped workers in affected industries? Even as there is very little literature regarding the subminimum wage this research parallels the literature on the regular minimum wage. Most recently minimum wage researchers are building on past research to better understand the problem of unobservable heterogeneity. Central to the debate is how to best account for minimum wages that are correlated, but not causal, to employment growth patterns. I take the stance that the traditional two-way fixed effects model applied to panel data are inadequate due to the fact that minimum and subminimum wages are not randomly distributed. The non-random nature of state wage floor policies poses a nontrivial threat to estimating spurious effects of such policies. In Allegretto et al. (2013) it is shown that observable confounds vary considerably across high and low minimum wage states suggesting that unobserved factors do as well. Thus, central to this research and any research on minimum wages is to adequately address the issue of spatial heterogeneity.

In sum, findings indicate that the earnings effect of both wage floors are positive and statistically significant for full-service restaurants; but as expected due to the lack of tipped workers the earnings effect is restricted to the minimum wage for limited-service restaurants. Employment estimates that include geographic controls that better account for unobserved heterogeneity are small and not distinguished from zero for the tipped wage -0.012 (-0.005) and the minimum wage -0.026 (-0.045) in the full (limited) service sector.

## **2. History of the Subminimum Wage and the Tip Credit Provision**

The 1966 Fair Labor Standards Act amendment widened the net of labor protections to include coverage for hotel, restaurant and other service workers but it also introduced a ‘tip credit’ provision that makes the subminimum wage possible. The tip credit allows employers to use workers’ tips as credit toward their regular minimum wage as long as tips plus the subminimum wage paid by the employer equated to at least the regular minimum wage.<sup>2</sup>

Initially, the tipped wage and the tip credit were each 50 percent of the regular minimum wage as depicted in Figure 2. Over time the ratio of the tipped minimum to the federal minimum varied—it was as high as 60% but never fell below 50%. The relatively proportional link between the two wage floors was broken with the passage of the Minimum Wage Increase Act of 1996 which froze the sub-wage at \$2.13 into perpetuity as the regular minimum wage was subsequently increased at various times. Figure 3 shows the two wage floors adjusted for inflation and depicts the

<sup>2</sup> Other restrictions apply such as the worker must make at least \$30 per week in tips; for additional information see: <http://www.dol.gov/esa/whd/state/tipped.htm>. The timing of when the calculation of tips plus the subminimum or base wage to be in compliance with the FLSA’s wage requirements is assessed on a workweek basis. *See, e.g.*, 29 U.S.C. 206(a). A workweek is any *fixed and regularly* recurring 168-hour period. The most recent (2010-12) compliance sweep by program analyst’s at the U.S. Department of Labor reported that 83.8% of restaurants had some type of wage and hour violation including 1,170 tip credit that resulted in nearly \$5.5 million in back wages (email correspondence).

long period of decline in the tipped wage—today the tip credit is 71% of the regular minimum wage while the tipped wage is just 29%. The subsidy afforded employers (\$5.12) is now more than twice as much as the employer provided sub-wage.

## **2.1 States Act in Light of Federal Inaction**

As with the regular MW many states have set subminimum wage floors above the federal level and seven states do not allow for a subminimum. Over the past several decades there has been considerable variation in both wages across states. States with wage policies above the federal level ranged from just a few in the mid-1980s to over thirty in 2008. The number varies considerably when the federal rate is increased or left unchanged for long periods. The situation is a bit different for state subminimum wage policies given that it has been frozen at the federal level since 1991—thus for the most part the number of states with more generous sub-wage policies has steadily increased over time. The seven no tip credit states over our period of study remain so throughout and by definition have higher tipped wages. In the mid-1980s these seven states along with five others had subminimum above the federal level—by 2013 the number increased to 26.

As of January 2013, state minimum and subminimum wage policies are depicted in Figure 4. States minimum wages above the federal level are marked with black lines or hash marks.<sup>3</sup> The three color codes on the map refer to whether the state subminimum is set at the \$2.13 federal level (red); above the federal level but below the regular minimum (gray); or if the state does not allow for a subminimum wage (blue)—respectively, the latter three categories are referred to as full-, partial- and no- tip credit states.

<sup>3</sup> Here and elsewhere in the paper the District of Columbia is included as a state. The number of states with higher minimum wages is much lower than in the recent past. Federal minimum wage increases of 70 cents in 2007, 2008, and 2009 “caught up” to many state minimums and changed the distribution dramatically. For example, prior to the federal increase in 2007, 30 states had minimum wages higher than the federal minimum of \$5.15, which had been at \$5.15 for a decade.

The partial tip-credit states currently have subminimum wages that range from just above the federal level such as the \$2.23 policy in Delaware to very close to a no tip credit policy such as Hawaii's subminimum of \$7.00. The distribution of the workforce across the tip credit scenarios as depicted in the map is that 32.7%, 26.1% and 41.2% work in full-, partial- and no- tip credit states, respectively. The wage policies at both the federal and state level provide a rich data source with ample variation to examine the tipped wages effects on employment and earnings of restaurant workers.

### **3. Relation to Existing Literature**

Unlike the abundant research and long academic debates attributed to the regular minimum wage there is little empirical research on tip credit provisions and the subminimum wage. A descriptive paper by Allegretto and Filion (2011) showed that average wages are higher and poverty rates are lower for tipped workers generally and wait staff in particular who reside in states with higher tipped wages. But, this paper did not provide econometric analyses thus more research needs to be undertaken. Other descriptive information from Allegretto and Filion showed that wait staff are overwhelmingly women—over 70%. And while tipped workers and wait staff are disproportionately young it is the case that 45% and 33% are, respectively, at least 30 years old.

A working paper by Even and Macpherson (2012) is relevant to the present study in that it is the only paper that examines subminimum wage effects with a panel of data. The authors conclude “results provide fairly convincing evidence that higher cash wages increase earnings but reduce employment” but express caution in their degree of confidence and call for additional research (p. 23). The authors are concerned with the impact of recessions at the beginning and end of their panel data and also express concerns about collinearity between minimum wages and time and state fixed

effects. The methods employed and findings from this paper are discussed in further detail in the appropriate sections below.

Anderson and Bodvarsson (2005) asked whether states with higher tipped wages boosted server pay. They examined 1999 aggregated data on wait staff and bartenders from the Occupational Employment Statistics from the Bureau of Labor Statistics. Anderson and Bodvarsson concluded, for the most part, that it does not appear that tipped workers get a boost in total earnings in states with higher tipped wages. This cross-section using 1999 data may be contaminated with heterogeneity.

A third paper by Wessels (1997) theoretically and empirically assessed whether restaurants have monopsony power over wages. Wessels' tested theoretical model hinged on the fact that tips allow restaurants to pay servers lower wages thus as more servers are hired, each serves fewer customers and consequently earn less in tips—thus restaurants must pay a higher wage. Empirically he concluded that the labor market for tipped wait staff in restaurants is indeed monopsonistic. Wessel detected the full 'reverse C' monopsony employment pattern—over some range (not established) a higher wage will increase restaurant employment. This paper relies on factor demand theory of falling marginal and average wages per server as more servers are hired. To retain workers a restaurant has to pay higher wages. In practice it is questionable if this practice holds. It is likely that restaurants pay the lowest wage possible and that workers rely on tips as the majority of their pay—especially in full-tip credit states.

Another paper by Wessels (1993) on minimum wage and tipped employees employs the Census of Retail Trade to estimate the effect of allowing a total offset of tips towards minimum wage requirement. He concluded that restaurant employment would increase by 6.8% and those jobs would pay 30% or more above the minimum wage (which was \$2.01 at the time). Wessels concluded that a 10% increase in the tipped wage would result in a 4% decrease in employment and workers

who retained their jobs would have hours cut by 6%. Thus, in total there would be a loss of 3% to 5% in total income coupled with lower employment.

This study looked at aggregate restaurant data from a single year (1987) when the federal tip credit was 40%—the tipped wage was \$2.01 and minimum wage was \$3.35. This approach, as with Anderson and Bodvarsson, would benefit greatly by using more recent data on a span of years which would allow for the use of fixed effects specifications to better control for unexplained heterogeneity across states which is very difficult to do with a cross section of data. However, caution must be taken even with panel data and fixed effects estimators as recently documented in the minimum wage literature.

### **3.1 Relevant Minimum Wage Literature**

Recent research on minimum wage effects has documented the importance of including adequate controls in fixed effects models to account for unobserved heterogeneity. Dube, Lester and Reich (2010) used policy discontinuities at state borders as identifying variation to estimate earnings and employment effects in the restaurant industry. DLR generalized the individual case study approach by comparing all contiguous county-pairs the U.S. that straddle a state border—they found no adverse employment effects. DLR

did not estimate effects separately by full- and limited- services restaurants (they pooled them together). The present research extends DLR by analyzing separately the two restaurant sectors separately and further by estimating effects for the minimum and the subminimum wage.

Allegretto et al. (2013) used four data sets and six approaches—including geographic controls, boarder discontinuities, synthetic controls, and dynamic panel data models—to show that the two way fixed effects estimator for minimum wage studies is biased due to insufficient controls for time varying heterogeneity.

Specifically the author's document ways in which higher minimum wage states systematically differ from lower minimum wage states in many observables such as business cycle severity, inequality growth, job polarization, political economy and spatial distribution. Hence, it is likely they differ with regard to unobservable. More generally, the incorporation of more localized spatial controls—such as contiguous counties—are better counterfactuals given they are more similar. Depending on the data used it is not always possible, for example, to use contiguous border county pairs but a localized estimate even at a coarser level—such as Census divisions when using Current Population Survey data or OCEW data at the state level. The inclusion of geographic controls did not attenuate minimum wage effects on earnings but did reduce the employment effect and it was rendered statistically not distinguishable from zero. Importantly, the canonical two way fixed effects models consistently displayed the existence of pre-trends in employment that disappeared with the inclusion of spatial controls.

In relation to the present study it may be that the confounders with variation in the tipped wage may be similar but not necessarily identical to those relating to the minimum wage (as the map suggests) thus spurious effects may differ but the basic issue of heterogeneity remains a serious one.

The advances of incorporating spatial controls and policy discontinuities to account for heterogeneity as presented in Allegretto et al. (2013) and Dube, Lester and Reich (2010) is an often favored approach (for example see: Autor 2003; Lee and Lemieux 2010; Magruder 2013) but not universally accepted within the discipline. Specifically research by Neumark, Salas and Wascher (2013) use a synthetic control approach to argue that areas in close proximity are not more similar. And, more relevant to the present study is the aforementioned paper on the subminimum wage by Even and Macpherson (2012).

Even and Macpherson use Quarterly Census of Employment and Wages to estimate employment and earnings effects and the Current Population Survey (CPS) to estimate an hours effect.<sup>4</sup> They prefer the canonical two-way fixed effects estimates and report that a reduction in the tip credit (otherwise a 10 percent increase in the subminimum wage) increased worker earnings by less than one percent and reduced employment in full service restaurants by less than one percent. Even and Macpherson state that a high degree of collinearity between minimum wages and time and state fixed effects is worsened with the inclusion of state-specific time trends. They also contend that panel data that begins and ends during recessionary periods are unreliable and provide estimates for two time spans: 1990q1-2011q4 and 1991q2-2007q3. The present study benefits from the passage of time and utilizes QCEW data from 1990q1-2012q3 thus extends the time frame several years out from the end of the last recession which was officially June 2009.<sup>5</sup>

### **3. Data**

A panel of Quarterly Census of Employment and Wages (QCEW) data from 1990q1 through 2012q3 is used for this analysis. The QCEW is a near census of employment and earning given that it covers approximately 98 percent of all jobs. Importantly these data are well suited for research on the subminimum wage as the restaurant industry may be broken out by full- and limited- service which is important given tipped workers are common in full service restaurants but rare in limited service

<sup>4</sup> I originally used the CPS but found the inability to distinguish between workers in full- and limited- service restaurant industry was a hindrance—for example a strong wage effect or a tipped wage ‘bite’ to establish a treatment group was not possible. Moreover, reported hours of work in the CPS for tipped workers, such as wait staff and bartenders, are often -4 (around 10%) which indicate variable hours that change so much from week to week that reporting usual hours of work is not an option. It is not clear in Even and Macpherson how they handled this variability. Thus, I abandoned the individual level CPS data in favor of the firm level QCEW data that allows for the distinction between the limited- and full- service restaurant sectors.

<sup>5</sup> As determined by the National Bureau of Economic Research the official dating committee of business cycles: <http://www.nber.org/cycles.html>.



establishments. In general, the restaurant industry employs a large share of the minimum wage workforce and of all workers employed in the restaurant about a third earns wages within 10 percent of the minimum wage (Dube, Lester and Reich 2010). The main outcome variables of interest are average weekly earnings and employment. The QCEW data are then aggregated by state for full- and limited- service restaurants.

The QCEW data are merged with control variables generated from the CPS to capture labor supply dynamics such as the employment rate, the share of prime age workers, female labor force participation, etc. Additionally, other state control measures include population from the U.S. Bureau of the Census; unemployment rates from the Bureau of Labor Statistics; personal income from the Bureau of Economic Analysis. The data set is further appended with measures of the regular minimum and subminimum wages for each state and time period (year, quarter). The descriptive statistics are provided in Table 1.

#### 4. Estimation Strategy

To estimate the effects of higher subminimum wages on earnings and employment the estimation strategy starts with the two-way fixed effects specification with time and state fixed effects. This difference-and-difference approach is often applied to panel data. The dependent variables  $y$ , are respectively: the natural log of average weekly earnings or the natural log of employment and regressions are ran on separate samples of limited- and full- service restaurants. The baseline fixed-effects specification is then:

$$\ln y_{it} = \eta_1 \ln(TW_{it}) + \eta_2 \ln(MW_{it}) + X_{it}\Gamma + \phi_i + \tau_t + \varepsilon_{it} \quad (1)$$

where  $\ln TW$  and  $\ln MW$  refer to the log of the tipped (or subminimum wage) and the regular minimum wage where  $i$  and  $t$  denote, respectively, state and time (year, quarter) indexes.  $X$  is a

vector of worker characteristics such as: employment rates, the share of prime age workers, the shares of teenager and those 60 and above, marriage rates, and older workers with state level controls such as the unemployment rate and personal income. Here  $\phi_i$  refers to a state fixed effect and  $\tau_t$  represents time dummies incremented in quarters. In this baseline or canonical specification, including state and time dummies as well as the overall unemployment rate is thought to sufficiently control for local labor market conditions.

As previously discussed, there is growing evidence (Allegretto et al. 2013; Dube, Lester and Reich 2010) that the two-way specification does not fully capture heterogeneity in underlying employment patterns that are correlated with minimum wages. To account for this heterogeneity, a second specification allows time effects to vary by Census divisions. Allegretto, Dube and Reich (2011) show that including even a geographical control as coarse as division-specific time effects ( $\tau_{dt}$ ) which eliminates the between-division variation better controls for spatial heterogeneity in differential employment patterns, including region-specific economic shocks which is equation (2):

$$\ln y_{it} = \eta_1 \ln(TW_{it}) + \eta_2 \ln(MW_{it}) + X_{it}\Gamma + \phi_i + \tau_{dt} + \varepsilon_{it} \quad (2)$$

In a third specification a state-specific linear time trend variable provides a second means of controlling for heterogeneity in the underlying growth of low-wage employment and other trends in restaurant employment. Thus, the third specification is:

$$\ln y_{it} = \eta_1 \ln(TW_{it}) + \eta_2 \ln(MW_{it}) + X_{it}\Gamma + \phi_i + \psi_s \cdot t + \tau_t + \varepsilon_{it} \quad (3)$$

where  $\psi_s$  denotes the state-specific time trend for state  $s$ .

In the last and preferred specification, both the division-specific time effect and the state-specific time trends are included:

$$\ln y_{it} = \eta_1 \ln(TW_{it}) + \eta_2 \ln(MW_{it}) + X_{it}\Gamma + \phi_i + \psi_s \cdot t + \tau_{dt} + \varepsilon_{it} \quad (4)$$

The resulting estimates are less likely to be contaminated with unobservable long term trends and region-specific economic shocks in this final specification for both the regular minimum wage and the tipped wage even as the variation and the nature of the confounders may differ between the two wage floors. The four specifications estimate earnings and employment effects in full- and limited-service restaurants. Specifications include standard errors clustered at the state level.

For reference specifications (1) and (3) from above are similar to the two specifications used by Even and Macpherson.

## 5. Results

### 5.1 Main Findings

Earnings estimates are reported in panel A of Table 2 for both restaurant sectors. As expected the treatment effect on both the regular minimum and the tipped wage shows there is a ‘bite’ for the full-service sector. All of the coefficients for full-service, which are also elasticities in this case, are statistically significant and important in an economic sense. The earnings effect for the tipped wage is 0.043 and 0.045 in specifications (1) and (4), respectively. Thus a 10 percent increase in the tipped wage raises industry earnings by .45 percent. The earnings effect of the regular minimum wage are considerably larger than that of the sub-wage across all four specifications—the effect is 0.152 and 0.127 (both highly significant) in specifications (1) and (4), respectively.

Comparable results from Even and Macpherson are very similar to those reported here (E&M Table 2). The magnitude differences for the two wages makes sense given that there are less tipped workers compared to workers earnings wages around the minimum wage in full-service restaurants. Moreover, the tipped wage effects are mitigated given that they are comprised of the

base or tipped wage paid by the employer and tips received from customers.<sup>6</sup> There is also the interplay between the two wage measures. Regression analyses (not shown) indicates that when each wage is individually included in the regressions without the other (i.e. include the lnTW (lnMW) but exclude the lnMW (lnTW) the effects are a bit stronger in each case. Moreover, in practice the tipped wage is often increased along with the minimum wage and in the case of the seven no tip credit states they are exactly the same. Thus I expect that there is good reason to believe that the pure effect from the tipped wage is actually larger than reported here.

It is reassuring that the earnings effect of the tipped wage in the limited-service sector (given few workers receive tips in this sector) are not statistically significant and the point estimates in all four specifications are very small and range from -0.005 to 0.009. However, the minimum wage remains highly significant with elasticities that range from 0.137 to 0.213 across the four specifications. Earnings effects from Even and Macpherson are qualitatively similar as reported here. However, E&A posit that there is a high degree of collinearity between both the minimum and the tipped wage with the two-way fixed effects model and even more so with the inclusion of state-specific time trends (specification 3 in this paper) but the strong earnings effect in both restaurant sectors belie this notion.

Employment elasticities are reported in panel B, Table 2. Negative employment effects for the tipped wage (-0.094) and the minimum wage (-0.114, both significant at the 5 percent level) are estimated for full-service restaurants from the canonical specification (1). The minimum wage effect is in the range of -1 percent to -3percent that is often found when employing the two-way

<sup>6</sup> The QCEW notes: Under most State laws or regulations, wages include bonuses, stock options, severance pay, profit distributions, cash value of meals and lodging, tips and other gratuities, and, in some States, employer contributions to certain deferred compensation plans such as 401(k) plans. Accessed December 21, 2013 <http://www.bls.gov/cew/cewfaq.htm#Q15>.

specification (Allegretto et al. 2011; Dube, Lester and Reich 2010; Neumark and Wascher 2013). Moving across specifications the elasticities on both wage variables become much smaller and statistically insignificant except in specification (3) where the minimum wage elasticity is -0.073 (significant at the 5 percent level). Effects for the preferred specification (4) are quite small and statistically insignificant at -0.012 and -0.026 on the tipped and regular wage floors, respectively. As noted, the specifications employed by Even and Macpherson are akin to specifications (1) and (3) here and their analogous results are mixed depending on panel length (1990q1-2011q4 or their preferred data 1991q2-2007q3). Using their preferred panel (net the recessions at the beginning and end of the full period panel) the canonical model reports a significant -0.078 tip wage effect and a -0.015 (not significant) minimum wage effect on employment in the full-service sector. The second specification from E&M that includes state linear time trends reports elasticities of -0.029 (significant) and a positive 0.053 (not significant) for the tipped and regular minimum wages, respectively.

Looking at the employment effects of the two wages in the limited-service sector my results show (Table 2, bottom right quadrant) that tipped wage effects are very small and not significant: -0.032 in specification (1) to -0.005 in specification (4). Here again akin to the regular minimum wage effects for full-service become much smaller (less negative) and are not distinguishable from zero from specification (1) to (4): -0.176 and -0.045, respectively. Corresponding results from E&M with their full panel show results similar to those reported here except the tipped wage elasticity is not significant. Estimates from canonical model are -0.023 (not significant) and -0.191 (significant) for the tipped and minimum wage, respectively. In their second specification the employment effect for the tipped wage is a positive 0.079 and -0.157 for the minimum wage, both are significant.

E&A results using the shortened panel report small elasticities on both wages and all are insignificant—elasticities of -0.015 (0.009) on the tipped wage and -0.095 (0.000) on the minimum wage for E&As specification (1) ((2)).

A triple difference was employed in Even and Macpherson on the premise that the point estimates on the tipped wage using the limited-service restaurant sample are spurious and may be due to unobservables—thus differencing them from the estimates using the full-service sample would net out the unobserved effects; but it may also represent other noise; when they do so their estimates on the tipped wage are all significant at least at the 10 percent level and range from -0.079 to -0.038.<sup>7</sup> Doing so for my estimates from Table 2 nets a triple difference on the tipped wage from -0.062, -0.032, -0.031 and -0.007 across the four specifications, respectively. Again their specifications (1) and (2) are similar to my specifications (1) and (3). I do not triple difference the minimum wage effects across the two restaurant sectors as an effect would be expected in both and not necessarily equal. Thus the evidence here does not indicate that there are significant negative effects of tipped wages or regular minimum wages at the levels experienced in the U.S. since 1990 in full-service establishments.

The estimated elasticities on the minimum wage for the sample of limited-service restaurants mirrors what was previously found in Dube, Lester and Reich (2011)—that the simple two-way fixed effects specification generates a negative employment effect between the once widely accepted 1 percent to 3 percent range (-0.176) but as in DLR the effect is rendered insignificant and much smaller in subsequent specifications especially in specification 4.

<sup>7</sup> The process for calculating the triple-difference standard error is not documented.

Extrapolating from the results in specification (4) we can determine the effect of moving from the status quo to a no tip credit policy. Thus, in this scenario the tip wage would equate to the minimum wage and the equation becomes:

$$\ln y_{it} = (\eta_1 + \eta_2) \ln(MW_{it}) + X_{it} \Gamma + \phi_i + \psi_s \cdot t + \tau_{dt} + \varepsilon_{it} \quad (5)$$

Subtracting equation (5) from the status quo (4) results in:

$$\ln y_{it} = (\eta_1) [E(\ln MW) - E(\ln TW)] \quad (6)$$

where  $E$  is the expected value and the MW and TW are evaluated at the current federal policy of \$7.25 and \$2.13, respectively. The model estimates that a no tip credit policy would have a 0.056 effect on earnings (significant) and a -0.014 on employment which is not distinguishable from zero in specification (4).

## 5.2 Business Cycle Dynamics

As discussed Even and Macpherson run results on two panels—a longer panel from 1990q1-2011q4 and a shorter panel that dropped the early-90s recession and the Great Recession. Their results in some cases vary substantially and are not consistent across the two panels of data. Dropping valuable data may not be the best remedy if there is reason to suspect that the inclusion of state unemployment rates and state specific time trends may not adequately account for business cycles. I take two different approaches here to address the issue.

Three sets of results are reported in Table 3.<sup>8</sup> For ease of comparison panel A repeats the employment results from Table 2. Panel B estimates effects after dropping all recessionary quarters as defined by the National Bureau of Economic Research. Panel C adds state specific recession

<sup>8</sup> I was not able to replicate the estimated effects for the E&A shortened panel (1991q2-2007q3)

controls to each of the specifications. Estimates are again reported for both restaurant sectors. As Table 3 shows, the results across the three panels are nearly identical.

The issue of minimum wage effects and phases of the business cycle was addressed in Allegretto, Dube and Reich (2011, p. 224). Here the method of interacting the minimum wage with the unemployment rate and estimating a joint effect was used. Results were reported for a 4 percent and an 8 percent unemployment rate. For each the canonical specification elasticities were -0.049 and -0.046, respectively (both significant) but subsequent results from specifications with geographic controls similar to those used here were attenuated and they were not significant at 0.011 and 0.043, respectively.

## **6. Summary**

The federal subminimum wage received by tipped workers has been frozen at \$2.13 since 1991.

While there may be some tipped workers who earn decent tips to make up for such a low base wage it is clear that many do not and restaurant employment is one of the fastest growing sectors in the economy over the last two decades. The sub-wage floor was originally 50 percent of the regular minimum wage—today it is just 29 percent. State variation in the tipped wage allows for valuable variation to estimate effects on earning and employment in full- and limited- services restaurant sectors.

Earnings estimates show that the minimum wage effect is 0.127 and 0.137 in full- and limited- restaurants, respectively. The tipped wage, as expected, only has an effect on earnings in the full service (0.045) sector as few tipped workers are employed in limited service. Given that the



earnings data employed (QCEW) confound the base wage with tipped income it is likely the effect of earnings is larger than estimated.

Employment effects for the tipped (-0.094) and minimum wage (-0.012) floors for full service restaurants are negative and significant in the canonical two-way fixed effects specification—but estimates become less negative and indistinguishable from zero in the preferred specification with division controls (-0.012 and -0.026, respectively). As expected, given there is no earnings ‘bite’ on the tipped wage in the limited service sector, there is also no adverse employment effect. Measured disemployment effects on the minimum wage in the limited service sector mirrors recent finding in the literature in that significant negative effects are estimated with the canonical specification but the elasticity (-0.045) from our preferred specification is not significant. Estimates from methods that further account for the business cycle are not substantially different from our main results.

The results obtained here are informative for policy. The Harkin-Miller minimum wage bill that proposes an increase the regular minimum wage from \$7.25 to \$10.10 in three steps of 95 cents each would also reconnect the subminimum wage over several steps to 70 percent of the regular minimum. From the results found in this research implementing wage policy similar to the above proposal would not unduly harm restaurant employment in either sector while boosting earning for minimum and subminimum wage workers.

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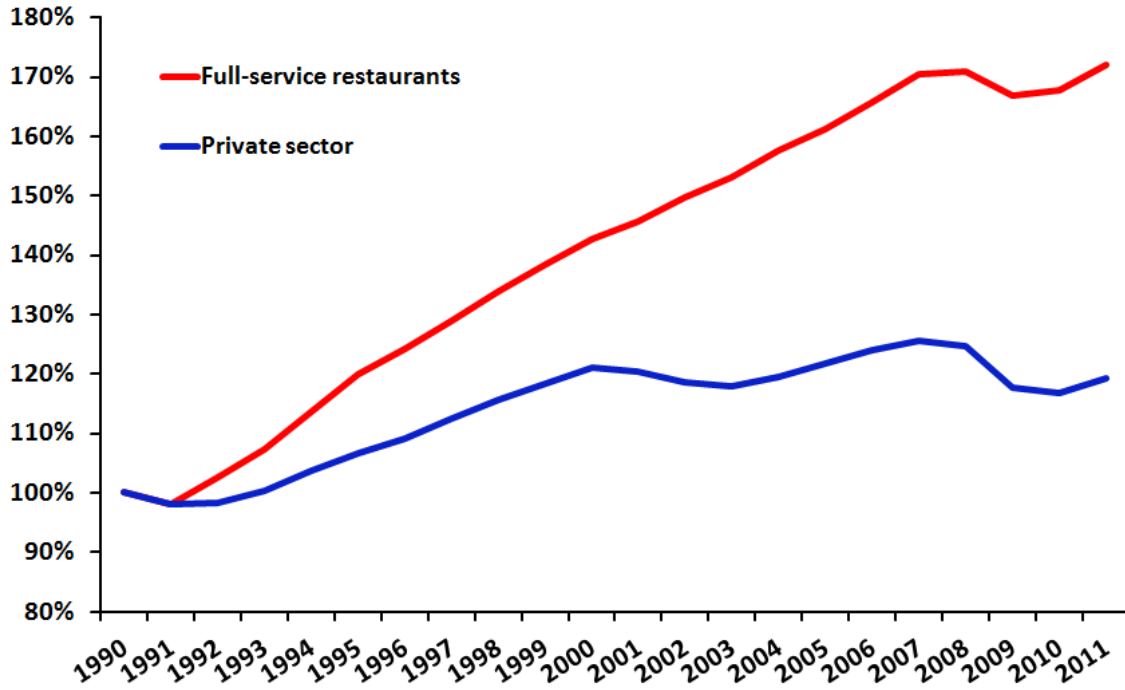
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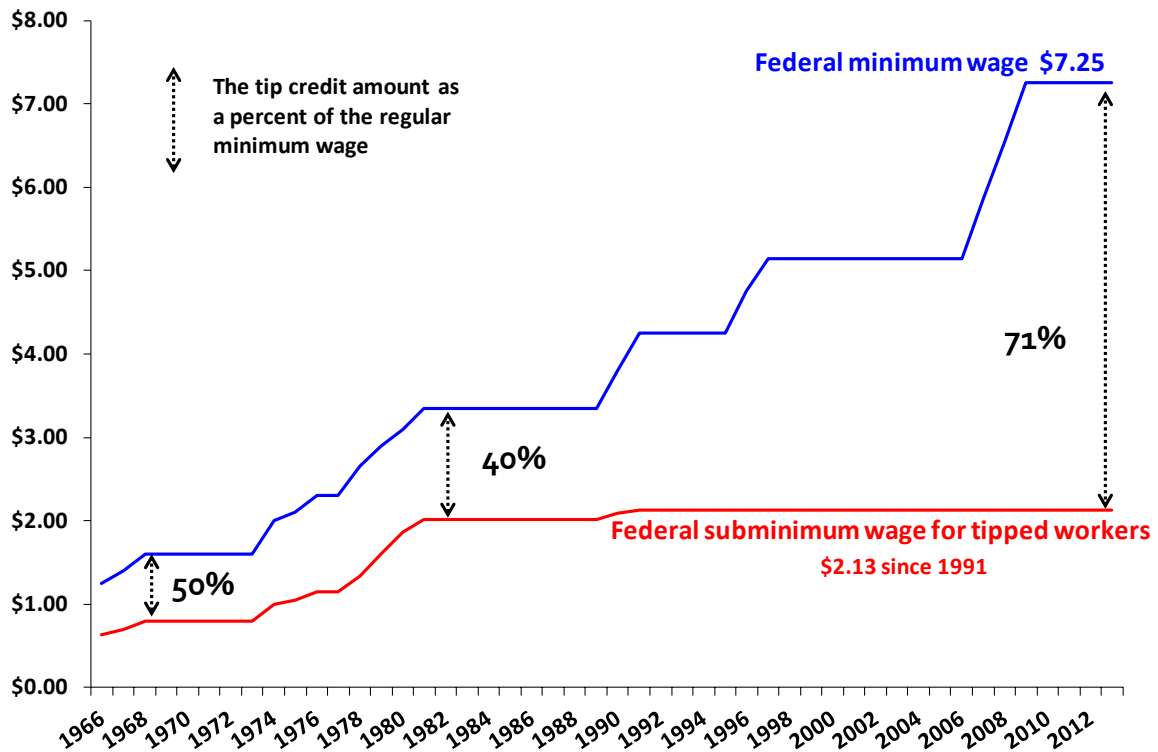
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**Figure 1** Employment growth in the private sector and full-service restaurant industry, 1990-2012.



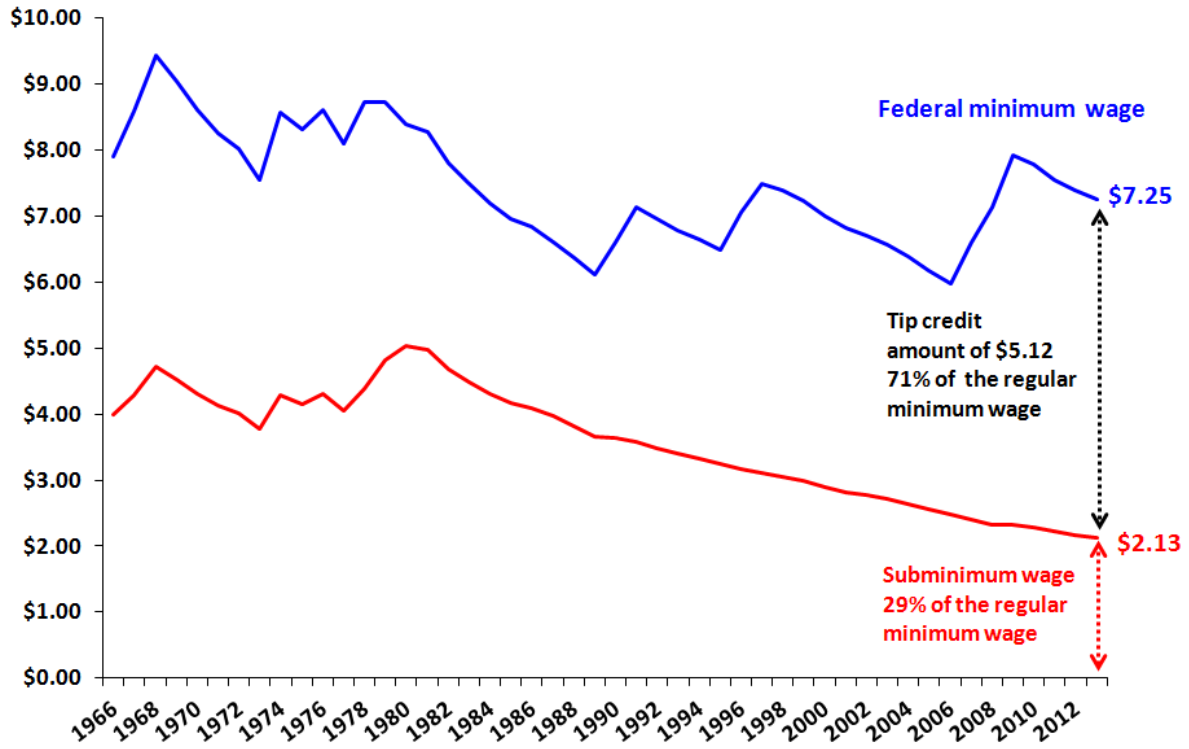
Notes: Quarterly Census of Employment and Wages data.

**Figure 2 Federal minimum wage and subminimum wage for tipped workers, 1966-2013**



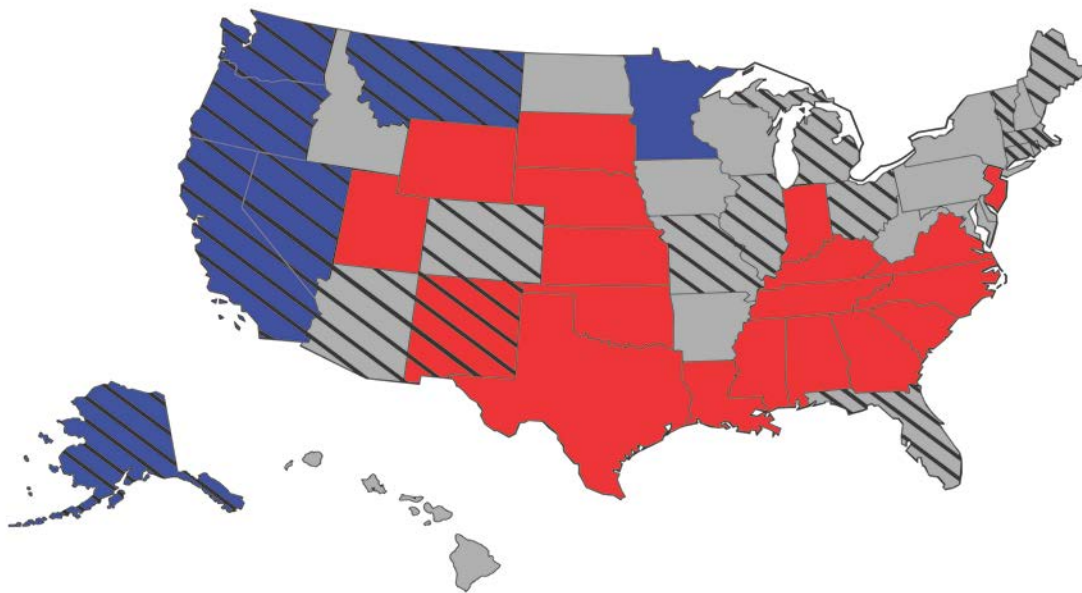
Source: Data compiled from annual Monthly Labor Review, January issues on minimum wage changes from the Bureau of Labor Statistics and Whittaker (2006). Along with state labor department web sites.

**Figure 3 The real value of federal minimum and subminimum wage, 1966-2013**



Note: As of December of each year in 2013 dollars adjusted by CPI-U-RS

**Figure 4 State regular minimum wage and subminimum wage policies**



**Key: Hash-stripes denote states with regular minimum wage policies above the \$7.25 federal rate.**

**Red** states follow federal subminimum wage policy of \$2.13.

**Gray** states have subminimum wages above the federal level but below each states binding regular minimum wage.

**Blue** states do not allow for a subminimum wage.

Note: The state scenarios are always changing as minimum and/or subminimum wages change at the federal or state level. The picture depicts state policies on January 1, 2013.

**Table 1**      **Descriptive statistics**

	Mean	Standard deviation	N
<b>CPS statistics</b>			
Employment to population ratio	0.639	0.045	147,173
Share of population aged under 18	0.062	0.012	147,173
Share of population aged over 60	0.216	0.028	147,173
Share of population aged 25-60	0.742	0.020	147,173
Share of population that is married	0.547	0.050	147,173
Share of population with a college degree	0.317	0.064	147,173
Female labor force participation	0.477	0.016	147,173
<b>Economic variables</b>			
Unemployment rate (seasonally adjusted)	0.057	0.019	147,173
State-level personal income (in \$1,000s)	\$186,573	\$229,407	147,173
Average weekly wage	\$278.49	\$134.32	147,173
<b>Policy variables</b>			
Minimum wage (federal)	\$5.25	\$1.02	147,173
Tipped minimum wage (federal)	\$2.13	\$0.01	147,173
Tip credit	\$1.68	\$0.71	147,173
Minimum wage (binding)	\$5.50	\$1.20	147,173
Tipped minimum wage (binding)	\$3.11	\$1.47	147,173

Sources: CPS calculations from Current Population Survey data 1990-2011. Unemployment rates from BLS. Personal income from BEA. Average weekly wage from the QCEW. Policy variables from annual January issues of the Monthly Labor Review along with information from the Department of Labor web sites.



**Table 2 Minimum and subminimum wage elasticities for full- and limited- service restaurants**

Specification		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>A. Earnings</b>		<b>Full Service Restaurants</b>				<b>Limited Service Restaurants</b>			
lnTW	$\eta$	0.043**	0.037*	0.052***	0.045**	-0.005	0.000	0.009	0.004
	se	(0.018)	(0.022)	(0.014)	(0.017)	(0.023)	(0.025)	(0.026)	(0.033)
lnMW	$\eta$	0.152***	0.137***	0.138***	0.127***	0.213***	0.182***	0.182***	0.137***
	se	(0.030)	(0.042)	(0.023)	(0.026)	(0.034)	(0.067)	(0.033)	(0.048)
ln(EPOP)	$\eta$	0.256***	0.183***	0.187***	0.119**	0.192*	0.109	0.125**	0.044
	se	(0.070)	(0.067)	(0.061)	(0.056)	(0.098)	(0.103)	(0.054)	(0.068)
ln(personal income)	$\eta$	0.343***	0.385***	0.370***	0.375***	0.340***	0.300***	0.416***	0.397***
	se	(0.044)	(0.058)	(0.040)	(0.049)	(0.074)	(0.092)	(0.117)	(0.105)
<b>B. Employment</b>									
lnTW	$\eta$	-0.094**	-0.013	-0.008	-0.012	-0.032	0.019	0.022	-0.005
	se	(0.040)	(0.042)	(0.038)	(0.046)	(0.041)	(0.041)	(0.046)	(0.055)
lnMW	$\eta$	-0.114**	-0.027	-0.073**	-0.026	-0.176**	-0.103*	-0.123***	-0.045
	se	(0.056)	(0.067)	(0.034)	(0.058)	(0.068)	(0.058)	(0.042)	(0.054)
Ln(EPOP)	$\eta$	0.224	0.318*	0.489***	0.391***	0.185	0.088	0.259***	0.088
	se	(0.169)	(0.162)	(0.119)	(0.140)	(0.164)	(0.166)	(0.079)	(0.101)
ln(personal income)	$\eta$	0.092	0.002	0.130	0.173*	0.196	0.288	0.069	0.129

Specification		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>A. Earnings</b>		<b>Full Service Restaurants</b>				<b>Limited Service Restaurants</b>			
	se	(0.186)	(0.190)	(0.107)	(0.088)	(0.159)	(0.206)	(0.156)	(0.175)
ln(population)	$\eta$	0.740**	0.953**	1.147***	1.178***	0.750***	0.885***	1.599***	1.371**
	se	(0.284)	(0.364)	(0.311)	(0.307)	(0.213)	(0.210)	(0.470)	(0.596)
Division-specific time controls			Y		Y		Y		Y
State-specific time trends				Y	Y			Y	Y
Observations		4,641	4,641	4,641	4,641	4,641	4,641	4,641	4,641

Notes: **TW**=tipped or subminimum wage; **MW**=minimum wage.  $\eta$  and se refer to elasticities and standard errors (clustered at the state level), respectively. Each specification includes controls for the shares of: employment (EPOPs), prime age workers, college graduates, population over 60 and teenagers along with marriage rates and female labor force participation. Additional controls include unemployment rates, total personal income, and population (only for employment regressions). Each regression includes state fixed effects, time fixed effects, and additional trend controls as specified. Significance levels are denoted as follows: \*\*\*1%, \*\*5%, \*10%.

**Table 3 Minimum and subminimum wage employment elasticities accounting for recessions**

Specification		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Full Service Restaurants						Limited Service Restaurants			
<b>A. Results repeated from Table 2</b>									
lnTW	$\eta$	-0.094**	-0.013	-0.008	-0.012	-0.032	0.019	0.022	-0.005
	se	(0.040)	(0.042)	(0.038)	(0.046)	(0.041)	(0.041)	(0.046)	(0.055)
lnMW	$\eta$	-0.114**	-0.027	-0.073**	-0.026	-0.176**	-0.103*	-0.123***	-0.045
	se	(0.056)	(0.067)	(0.034)	(0.058)	(0.068)	(0.058)	(0.042)	(0.054)
Observations		4,641	4,641	4,641	4,641	4,641	4,641	4,641	4,641
<b>B. Omitting recession quarters</b>									
lnTW	$\eta$	-0.092**	-0.011	-0.005	-0.002	-0.025	0.019	0.031	0.005
	se	(0.041)	(0.043)	(0.034)	(0.042)	(0.040)	(0.041)	(0.042)	(0.052)
lnMW	$\eta$	-0.109*	-0.032	-0.088**	-0.046	-0.175**	-0.101	-0.136***	-0.062
	se	(0.055)	(0.071)	(0.033)	(0.058)	(0.067)	(0.063)	(0.043)	(0.052)
Observations		4,029	4,029	4,029	4,029	4,029	4,029	4,029	4,029

Specification		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Full Service Restaurants						Limited Service Restaurants			
<b>C. Inclusion of state-specific recession controls</b>									
lnTW	$\eta$	-0.095**	-0.012	-0.005	-0.007	-0.029	0.022	0.031	0.004
	se	(0.0414)	(0.043)	(0.0359)	(0.044)	(0.042)	(0.042)	(0.044)	(0.054)
lnMW	$\eta$	-0.118**	-0.033	-0.075**	-0.029	-0.173**	-0.010	-0.122***	-0.041
	se	(0.056)	(0.068)	(0.035)	(0.061)	(0.070)	(0.060)	(0.042)	(0.053)
Observations		4,641	4,641	4,641	4,641	4,641	4,641	4,641	4,641
Division-specific time controls			Y		Y		Y		Y
State-specific time trends				Y	Y			Y	Y

Note: See note to Table 2 for details on the full set of controls. Earnings regressions are not shown but are not qualitatively different than those reported in Table 2.



# The Economic Importance of Women's Rising Hours of Work

## Time to Update Employment Standards

The importance of women's added work hours to families' economic well-being lends a new urgency to rethinking U.S. labor standards for the 21st century.

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## Introduction and summary

Over the past three decades, there has been a steady rise in the share of women, especially mothers, in the workforce. As indicated by the data, the majority of women and mothers work, and many work full time and full year. This dramatic increase in women's working hours has had a substantial impact both on household earnings and the economy more generally. Our analysis finds that:

- Middle-class households would have substantially lower earnings today if women's employment patterns had remained unchanged. Had that been the case, gross domestic product, or GDP, would have been roughly 11 percent lower in 2012 if women had not increased their working hours as they did. In today's dollars, this translates to more than \$1.7 trillion less in output—roughly equivalent to combined U.S. spending on Social Security, Medicare, and Medicaid in 2012.
- Most dramatic is the increase in the share of mothers who work full time and full year—at least 35 hours per week and 50 weeks per year—which rose from 27.3 percent of mothers in 1979 to 46 percent of mothers in 2007 before declining somewhat to 44.1 percent in the wake of the Great Recession. Full-time, full-year employment for all women increased from 28.6 percent of all women in 1979 to 43.6 percent in 2007 before declining to 40.7 percent in 2012.
- The median annual hours worked by women increased 739 hours from 1979 to 2012. All of this increase in median hours took place between 1979 and 2000. Median annual hours of work by mothers increased even more dramatically, rising 960 hours from 1979 to 2012, with all of the increase occurring by 2000.

A great deal of research has explored how the movement of women out of the home and into the labor force affects women and the economic well-being of families, but the importance of the additional earnings of mothers and women to the strength of middle-class families and the economy overall is less understood. In this paper, we look back over more than three decades of women's employment to examine the growing importance of the contribution their earnings make to the U.S. economy. We document the increase in the labor-force participation of women and their added hours of employment and show the effects of their economic contributions to both the income of the middle class and the size of the U.S. economy.

The importance of mothers' additional hours of work and their earnings to our economy lend a new urgency to rethinking U.S. labor standards for the 21st century. Even as mothers and women are making significant contributions to the U.S. economy, they continue to do so within a set of institutions that too often do not provide them with the kind of support that they need to do this successfully both at work and at home. We recommend giving workers more control over their schedules with a right-to-request law, instituting a national family leave insurance program, and allowing workers to earn paid sick days.

## Employment standards fail to reflect changed patterns of women's employment

The United States' labor standards began to take shape more than 75 years ago. They provided the foundation for decades of economic growth because they reflected the realities of the workforce at the time they were implemented.

The Fair Labor Standards Act, or FLSA, was enacted in 1938, just a few years after the Social Security Act.<sup>1</sup> At the state level, workers' compensation laws were adopted during the first third of the 20th century and had been implemented in all states by 1940.<sup>2</sup> Combined, these laws provide the foundation for the policies that provide income security for both wage and salary workers. When employees are laid off from a job due to no fault of their own, too old to work, or unable to work due to an injury suffered on the job, these laws protect them from loss of livelihood.

These basic labor protections are grounded within the prevailing presumptions of the 1930s and 1940s about which family members work and which family members provide care.<sup>3</sup> When these laws were first enacted, most families had a full-time, stay-at-home mother, and men were typically their family's primary breadwinner. Of course, this was never the case for every family; women of color and recent immigrants have always had relatively high rates of participation in the labor force.<sup>4</sup> But the stay-at-home mom and breadwinner dad model was the most common family type. Because of dominant norms about who worked and who provided care, the Social Security Act, for example, provides insurance benefits for unemployment but not for the birth of a child or to care for an ill family member.<sup>5</sup> While the FLSA provides rules against overwork—a key issue in the early part of the 20th century—it is silent on whether workers should have any rights to flexibility or predictability in their schedules.<sup>6</sup>

The world has changed a great deal since the 1930s, with implications not only for individual families and employees but also for our economy overall. The slow but steady increase in women's labor-force participation over the course of the 20th century accelerated after the mid-1970s. The increase was most dramatic for women ages 25 to 44; their labor-force participation rate increased from 47 percent in 1970 to 76 percent in 2000, about where it remains today.<sup>7</sup> The share of mothers with young children who are employed outside the home and the number of hours they worked both increased dramatically over this time period.<sup>8</sup> Today, it is more common than not for children to grow up in a family without a full-time, stay-at-home caregiver. Only one in three children is raised in a family with a stay-at-home parent, and most mothers are a breadwinner or co-breadwinner, bringing home at least one-quarter of their families' earnings.<sup>9</sup>

Yet despite these changes in the composition of the U.S. labor force, our nation's basic labor standards have not been updated to reflect the economic realities of today's workers. This lack of adaption may contribute to the plateau in mothers' labor-force participation rates since 1990. The labor-force participation rate of women ages 25 to 54 was 74.0 percent in 1990; 21 years later, it had only increased to 74.7 percent in 2011.<sup>10</sup> This is in marked contrast to women in most other advanced industrial economies that have experienced substantial increases in women's labor-force participation. New research by Cornell economists Francine Blau and Lawrence Kahn finds that women's labor-force participation in the United States has fallen behind that of most other developed countries—the United States now ranks 17th out of 22 such countries.<sup>11</sup> They point to the lack of family-friendly policies as a likely explanation:



Unlike the United States, most other economically advanced nations have enacted an array of policies designed to facilitate women's participation in the labor force, and such policies have on average expanded over the last 20 years relative to the United States.<sup>12</sup>

Cross-national studies on the role of policies that reconcile work and family demands have found that the work hours of women in dual-earner families are similar to those of men when child care is publicly provided.<sup>13</sup> Paid maternity and parental leave also increases the employment rate of mothers,<sup>14</sup> and more generous paid leave benefits increase the economic contribution of wives to family earnings.<sup>15</sup>

For the most part, the United States has left labor standards for workers with care responsibilities to the private sector. This means that while professional workers often have access to paid sick days and paid family leave for their own illness or to care for a new child or ill family member and the capacity to address scheduling issues, middle-class and low-income workers do not. For example, among private-sector workers in the bottom 10 percent of their occupation's wage distribution, only one in four has the ability to take a paid sick day when they are sick or need to care for an ill child.<sup>16</sup> Professional workers commonly have access to paid vacation time and sick days that allow them to cobble together paid time off to deal with family care responsibilities.<sup>17</sup> These workers are also more likely to have on-the-job flexibility that makes it possible for them to cope when a child is sick or a family member needs to be cared for.<sup>18</sup> Furthermore, professional workers can often be away from work without losing earnings, which is typically not the case for workers at the low end of the income distribution, as well as for many workers in the middle class.<sup>19</sup>

The need to update labor standards has become increasingly important for working families. Because our labor standards were established in an era when families worked and cared differently for one another, they are not providing as stable a foundation for our working families today. As detailed in the next sections, women's hours of work and their contribution to family economic well-being have increased over the past three decades, which has implications for both their families and the economy.

## Women’s rising hours of work

Increases in both the working hours of all women ages 16 to 64 and all mothers since 1979 and women’s wages relative to men’s over that period are driving the rising economic contribution of women and mothers.<sup>20</sup> In this section, we consider the overall changes in employment status and annual hours of work of women and mothers in households with children under the age of 18 before turning to an examination of middle-class women’s and mothers’ hours of work in the next section.

### All women and mothers in households with children

We begin by examining the employment status and annual hours worked for women ages 16 to 64 and all mothers between 1979 and 2012. (see Table 1) We compare employment status and hours of work at business cycle peaks—1979, 1989, 2000, and 2007—and in 2012, the most recent year for which data are available.

**TABLE 1**  
**Employment status, 1979-2012 (percent)**

Employment status	1979	1989	2000	2007	2012	1979-1989	1979-2007	1979-2012
<b>(a) Women, 16-64</b>								
No work	34.6	27.3	25.4	29.3	32.2	-7.3	-5.3	-2.4
Part time, part year	36.7	35.4	30.4	27.1	27.1	-1.3	-9.6	-9.6
Full time, full year	28.6	37.3	44.2	43.6	40.7	8.7	15.0	12.1
<b>(b) Mothers</b>								
No work	35.4	27.2	22.9	25.7	28.0	-8.2	-9.7	-7.4
Part time, part year	37.2	35.9	31.1	28.3	27.9	-1.3	-8.9	-9.3
Full time, full year	27.3	36.9	46.0	46.0	44.1	9.6	18.7	16.8

Source: Author’s analysis of the Center for Economic and Policy Research Extracts of the March Current Population Survey.

This analysis demonstrates that the share of women who work outside the home increased drastically from 1979 to 2012, though the Great Recession and subsequent jobless recovery dampened this trend. As demonstrated in Table 1a, nearly one-third of women ages 16 to 64 currently have zero hours of paid employment. The proportion of women who do not work fell from 34.6 percent in 1979 to 25.4 percent in 2000 before rising to 29.3 percent in 2007—prior to the onset of the economic crisis. Eventually it increased to 32.2 percent in 2012, after the recession and the beginning of the recovery.

However, over the same period, the share of women working full time rose sharply. Part-time and/or part-year employment declined from 36.7 percent of women in 1979 to 27.1 percent in 2007, and remained there in 2012. Full-time, full-year employment—at least 35 hours per week and 50 weeks per year—increased dramatically from 28.6 percent of all women in 1979 to 43.6

percent in 2007 before declining to 40.7 percent in the wake of the Great Recession. Even after the recession, women in 2012 were 12 percentage points more likely to work full time and full year than in 1979.

For mothers with children under the age of 18 in the home (see Table 1b), the decline in the proportion who do not work at all is even more dramatic than the decrease for all women, falling from 35.4 percent in 1979 to 25.7 percent in 2007 before increasing to 28.0 percent in 2012.

Furthermore, the decline in part-time and/or part-year employment of mothers was equally steep, dropping from 37.2 percent of all mothers in 1979 to 28.3 percent in 2007 before falling further to 27.9 percent in 2012. Most dramatic is the corresponding increase in the share of mothers who work full time, full year, which rose from 27.3 percent of mothers in 1979 to a peak of 46 percent in 2007 before declining to 44.1 percent in 2012. That is, 44.1 percent of mothers worked full time and full year in 2012, compared with 27.9 percent who worked part time or part year and 28 percent who did not work at all.

**TABLE 2**  
**Annual hours worked, 1979-2012 (hours per year)**

Percentile	1979	1989	2000	2007	2012	1979-1989	1979-2007	1979-2012
<b>(a) Women, 16-64</b>								
10th	0	0	0	0	0	0	0	0
Median	925	1,530	1,820	1,820	1,664	605	895	739
90th	2,236	2,600	2,600	2,600	2,600	364	364	364
<b>(b) Mothers</b>								
10th	0	0	0	0	0	0	0	0
Median	600	1,200	1,600	1,596	1,560	600	996	960
90th	2,080	2,080	2,080	2,080	2,080	0	0	0

Source: Author's analysis of the Center for Economic and Policy Research Extracts of the March Current Population Survey.

Table 2a shows the dramatic increase in the median hours worked by women between 1979 and 2007 or 2012. The typical woman worked 925 hours per year in 1979. This nearly doubled to 1,820 hours in 2007 before declining to 1,664 hours in 2012 following the economic crisis. That is, the median annual hours worked by women increased 739 hours between 1979 and 2012. All of this increase in median hours took place between 1979 and 2000.

The median annual hours worked by mothers (see Table 2b) increased even more dramatically, from 600 hours per year in 1979 to 1,596 in 2007 and 1,560 in 2012. This is an increase of 960 hours between 1979 and 2012, with all of the increase occurring by 2000.

It is here that the time squeeze experienced by working families is most apparent. The typical woman's annual hours of work nearly doubled from 1979 to 2007. Even with the effects of the recession, the annual hours worked by the typical woman increased 80 percent between 1979 and

2012. For the typical mother, annual hours worked increased 150 percent between 1979 and 2012.

Women at the 90th percentile of the hours distribution (see Table 2) worked 2,600 hours per year in 2012—the equivalent of 50 hours per week for the full year. Mothers at the 90th percentile worked 41.5 hours per week or 2,080 hours per year. However, mothers at the 90th percentile were already working full time in 1979, and there was no increase in hours of work for this group of women between 1979 and 2012. As a result, the increase in the annual number of hours worked by women at the 90th percentile—an increase of 16 percent—is smaller than at the median.

It is important to note that 32.2 percent of all women and 28.0 percent of all mothers did not work at all in 2012. Thus, the annual number of hours worked by women and mothers at the 10th percentile is zero. While hours of work increased dramatically for the typical woman, a substantial minority of women and mothers did not work for pay in 2012. This may be due in part to the lack of paid leave and other policies that facilitate women’s employment. For example, evidence from a study of paid family leave in California suggests that women who had access to paid family leave—either through an employer or through the state’s program—were more likely to return to work following the birth of a child.<sup>21</sup>

### **Middle-class women’s share of household hours of work**

While there is no generally accepted definition of middle class, there are three definitions that have been used in previous research: household income between 75 percent and 200 percent of the median, households in the middle three quintiles of the income distribution, and households that fall in the “middle” between low-income and professional households—or the “three faces” definition of the middle class.<sup>22</sup> We present our findings using each of these definitions. Table 3a reports results using 75 percent to 200 percent of the median as our definition of middle class; Table 3b shows the middle three quintiles; and Table 3c uses the three faces definition.<sup>23</sup> The results for the hours of work of women and mothers below the middle class, in the middle class, and above the middle class are broadly similar using each of the three definitions.

TABLE 3

**Women's and mothers' share of hours, by three definitions of middle class, 1979-2012** (percent of total household hours)

	Women (all households)			Mothers (households with children)		
<b>(a) 75 percent to 200 percent of median</b>						
	<b>Below</b>	<b>Middle</b>	<b>Above</b>	<b>Below</b>	<b>Middle</b>	<b>Above</b>
1979	37.1	36.2	36.2	31.4	27.9	26.2
1989	41.5	40.4	39.8	35.1	33.1	30.4
2000	44.9	42.4	40.9	37.6	34.4	32.6
2007	44.8	43.4	42.7	37.5	34.8	35.5
2011	46.2	43.9	42.7	37.1	35.0	36.6
2012	46.1	43.6	42.8	36.3	34.6	36.3
1979-1989	4.3	4.2	3.6	3.7	5.2	4.3
1979-2007	7.7	7.1	6.5	6.1	6.9	9.3
1979-2012	8.9	7.4	6.6	5.0	6.8	10.2
<b>(b) Middle three quintiles</b>						
	<b>Below</b>	<b>Middle</b>	<b>Above</b>	<b>Below</b>	<b>Middle</b>	<b>Above</b>
1979	38.2	35.9	36.8	32.9	28.4	26.6
1989	43.7	40.2	40.1	37.6	33.1	31.4
2000	46.9	42.5	41.4	40.8	34.5	33.3
2007	47.5	43.3	42.8	40.2	34.9	35.3
2011	48.2	44.1	42.8	40.0	35.0	36.3
2012	47.9	43.9	42.8	39.1	34.5	36.1
1979-1989	5.5	4.3	3.3	4.6	4.7	4.8
1979-2007	9.3	7.3	6.0	7.2	6.5	8.7
1979-2012	9.6	8.0	6.0	6.2	6.1	9.4
<b>(c) "Three faces"</b>						
	<b>Low income</b>	<b>Middle</b>	<b>Professional</b>	<b>Low income</b>	<b>Middle</b>	<b>Professional</b>
1979	37.2	36.3	35.9	38.2	35.9	36.8
1989	41.5	40.4	40.0	43.7	40.2	40.1
2000	45.1	42.3	41.0	46.9	42.5	41.4
2007	45.0	43.3	42.8	47.5	43.3	42.8
2011	46.6	43.6	43.1	48.2	44.1	42.8
2012	46.3	43.6	43.0	47.9	43.9	42.8
1979-1989	4.3	4.1	4.1	5.5	4.3	3.3
1979-2007	7.9	7.0	6.9	9.3	7.3	6.0
1979-2012	9.2	7.3	7.0	9.6	8.0	6.0

Source: Author's analysis of the Center for Economic and Policy Research Extracts of the March Current Population Survey.

As noted above, almost one-third of all women and more than one-quarter of all mothers did not work in 2012. Women are less likely to work than men, and they are more likely to work part time and/or part year.<sup>24</sup> Women with zero hours of work or part-time or part-year status are found in households across the income distribution. Despite the dramatic increase in hours worked by the typical woman and mother, women in middle-class households consequently contributed less than 50 percent of total household hours of paid employment in 2012. And as we saw earlier, while mothers are more likely to work and more likely to work longer hours than in 1979, they still work less than women without children.

Table 3 reports the contribution of women ages 16 to 64 to total household hours of paid employment and the contribution of mothers to total household hours of paid employment in households with children. This is reported separately for middle-class, below-middle-class, and above-middle-class households. We find that women's share of household hours of work increased 7 percentage points for all three definitions of middle class, from about 36 percent in 1979 to nearly 44 percent in 2012. Mothers' share of hours in households with children increased between 6 percentage points and 8 percentage points, depending on the definition of middle class. For mothers, the increase in hours was greatest using the three faces definition, where the share increased from about 36 percent of total hours in households with children in 1979 to 44 percent in 2012. Using the other two definitions, we find that mothers' share of total hours increased from about 28 percent in 1979 to a bit more than 34 percent in 2012.

There has been a steady rise in the share of women, especially mothers, in the workforce over the past three decades. As indicated by the data, the majority of women and mothers work, and many work full time and full year. Discussed in detail in the next section, this dramatic increase in women's working hours has had a substantial impact on household earnings.

## Contribution of women to middle-class household earnings

Table 4 reports the contribution that women and mothers make to total household earnings because of their greater employment. Women's and mothers' share of earnings is highest in households below the middle class and lowest in households above the middle class. This reflects two realities:

- The high concentration of households with only one female earner in the below-middle group, often single mothers or single women without children.
- The lower hours and pay of men in households below the middle class as well as the higher hours and pay of men in households above the middle class.

These are substantial increases in the share of middle-class household earnings contributed by women and mothers. Middle-class households would have substantially lower earnings today if women's employment patterns had remained unchanged. This increase in women's contribution to earnings is due in part to an increase in their hours of paid employment between 1979 and 2012, and in part to an increase in women's wages relative to men's over this period.<sup>25</sup> As reported in Table 3, women in middle-class households increased their share of household hours of work by about 7 percentage points and their share of middle-class household earnings (see Table 4) by about 13 percentage points between 1979 and 2012. This suggests that about 6 percentage points of the increase in women's share of middle-class household earnings is due to the increase in their pay relative to middle-class men over this period.

TABLE 4

**Women's and mothers' share of earnings, by three definitions of middle class, 1979-2012 (percent of total household earnings)**

	Women (all households)			Mothers (households with children)		
<b>(a) 75 percent to 200 percent of median</b>						
	<b>Below</b>	<b>Middle</b>	<b>Above</b>	<b>Below</b>	<b>Middle</b>	<b>Above</b>
1979	29.5	24.8	23.0	25.0	18.9	16.9
1989	35.3	31.5	28.7	30.3	26.3	22.4
2000	40.0	35.5	26.7	33.8	29.7	21.3
2007	40.4	37.2	32.3	34.2	30.6	27.6
2011	42.6	38.2	33.1	34.8	31.3	29.7
2012	42.7	37.9	33.3	34.3	30.7	29.5
1979-1989	5.8	6.7	5.6	5.3	7.4	5.4
1979-2007	10.9	12.4	9.3	9.2	11.6	10.6
1979-2012	13.2	13.1	10.2	9.3	11.8	12.6
<b>(b) Middle three quintiles</b>						
	<b>Below</b>	<b>Middle</b>	<b>Above</b>	<b>Below</b>	<b>Middle</b>	<b>Above</b>
1979	33.5	25.0	23.8	29.1	19.7	26.6
1989	39.9	31.8	29.2	34.7	26.7	31.4
2000	44.0	35.9	28.1	38.7	29.9	33.3
2007	44.5	37.4	33.0	38.1	30.9	35.3
2011	45.9	38.8	33.4	38.3	31.7	36.3
2012	45.8	38.6	33.5	37.8	31.2	36.1
1979-1989	6.4	6.8	5.4	5.6	7.0	4.8
1979-2007	10.9	12.4	9.2	8.9	11.2	8.7
1979-2012	12.3	13.6	9.7	8.7	11.5	9.4
<b>(c) "Three faces"</b>						
	<b>Low income</b>	<b>Middle</b>	<b>Professional</b>	<b>Low income</b>	<b>Middle</b>	<b>Professional</b>
1979	29.5	24.9	22.6	25.0	19.2	16.1
1989	35.4	31.2	29.1	30.5	26.2	23.1
2000	40.3	34.2	27.8	34.1	29.0	22.4
2007	40.7	37.0	32.4	34.4	30.6	27.7
2011	43.4	37.1	34.0	35.5	31.0	30.2
2012	43.1	37.3	33.7	34.7	30.4	30.1
1979-1989	5.9	6.3	6.5	5.6	7.0	7.0
1979-2007	11.2	12.1	9.8	9.5	11.4	11.6
1979-2012	13.6	12.4	11.1	9.7	11.2	14.0

Source: Author's analysis of the Center for Economic and Policy Research Extracts of the March Current Population Survey.



In middle-class households, women's contribution to household earnings increased between 12.4 percentage points and 13.6 percentage points from 1979 to 2012, depending on the definition of middle class. Women's share of earnings increased from 24.8 percent to 37.9 percent of earnings in households with income between 75 percent and 200 percent of the median; from 25.0 percent to 38.6 percent in households in the middle three quintiles; and from 24.9 percent to 37.3 percent using the three faces definition.

Mothers' contribution to the earnings of middle-class households with children increased between 11.2 percentage points and 11.8 percentage points from 1979 to 2012, depending on the definition of the middle class. Their share of earnings increased from 18.9 percent to 30.7 percent of total earnings in households with children and incomes between 75 percent and 200 percent of the median; from 19.7 percent to 31.2 percent in the middle three quintiles; and from 19.2 percent to 30.4 percent using the three faces definition.

The median earnings of women who are employed full time relative to men in full-time jobs changed little from 1950 to 1980, but has increased substantially since then. The ratio of women's earnings to men's rose from about 60 percent in 1980 to 76 percent in 2000,<sup>26</sup> about where it remains today.<sup>27</sup> The surge in women's relative wages can be attributed to women's increased educational attainment, college graduation rates that are higher than those of men, their increased work experience, women's movement into traditionally male occupations, and laws that made discrimination against women illegal.<sup>28</sup>

## Contribution of the increase in women's hours of work to GDP

Up to this point, we have examined how the increase in women's and mothers' hours of work since 1979 has affected their contributions to household earnings. We turn now to an examination of the impact that the increase in women's hours of work has had on the economy as a whole. Specifically, we ask: How much smaller would GDP be today if women had the same work patterns as in 1979?

The population has grown since 1979 and the number of women ages 16 to 64 is much larger today than it was then. Thus, even if women had the same pattern of work hours in 2012 as they had in 1979, the total hours worked by women would have increased. In examining the effect of the increase in women's work hours, therefore, we need to be careful to control for the increase in population.

Table 5 summarizes a simple exercise to estimate the impact on GDP of the large increase in the average number of hours worked by women. We estimate the reduction in average hours of work in the economy as a whole in 2007 if women worked only the same average annual number of hours in 2007 as in 1979. As noted above, 2007 and 1979 are both business cycle peaks. This comparison avoids the not-yet-recovered decline in hours due to the Great Recession.

TABLE 5

### Estimated impact of women's increased annual hours of work on GDP, 1979-2012

	Average annual hours of work	
	1979	2007
Men	1,717	1,685
Women	907	1,203
All	1,295	1,438
All, assuming women worked 1979 average hours	1,295	1,285
Ratio of counterfactual to actual hours		0.894
<b>Implied change in GDP</b>		
Percent		-10.6%
Billions of 2012 dollars		-\$1,661

Note: Average annual hours are weighted by the share of the population ages 16 to 64. Women were 51.4 percent of the working-age population in 2012.

Source: Author's analysis of the Center for Economic and Policy Research Extracts of the March Current Population Survey.

We begin by computing the average annual hours of work for all women and all men ages 16 to 64 in 1979 and again in 2007, including women and men who worked no hours. We calculate the overall average annual hours worked by adding average annual hours of women and men in each year, weighted by their relative shares in the population ages 16 to 64 for that year.

Note that the actual average annual hours of work—among the working-age population, where nonworkers are recorded as having zero hours per year—was 1,438 hours in 2007. If women had worked at only their 1979 level, this average would have fallen to 1,285 hours—a decline in total hours worked of about 10.6 percent. With almost 11 percent fewer hours worked in the year, GDP would have been roughly 11 percent lower in 2012. In today's dollars, this translates to over \$1.7 trillion less in output<sup>29</sup>—roughly equivalent to total U.S. spending on Social Security, Medicare, and Medicaid in 2012.<sup>30</sup>

The 10.6 percent increase in women's contribution to GDP as a result of their increased hours of work is almost twice the 5.9 percent GDP contribution of the information, communications, and technology-producing industries combined in 2012.<sup>31</sup>

## Employment standards for the 21st-century workforce

As demonstrated in the earlier sections of this paper, women’s increased hours of work are important to both their families’ standard of living and the size of the economy. The importance of women’s earnings to our economy lends a new urgency to rethinking U.S. labor standards for the 21st century. Even as mothers and women are making significant contributions to the economy, they continue to do so within a set of institutions that too often do not provide them with the kind of support that they need both at work and at home. These facts should inform federal policymaking about basic labor standards.

Despite the importance of women’s—and especially mothers’—earnings to family economic well-being and the economy, the wage-and-hours regulatory system and the social insurance infrastructure put in place in the 1930s by President Franklin Roosevelt and Secretary of Labor Frances Perkins have not been systematically expanded. U.S. employment standards should specifically address the dual role that most of today’s employees play as both workers and caregivers. The patchwork of work and family policies that has evolved over the years typically does not cover everyone or address the need for time off to fulfill caregiving responsibilities. Overtime regulations, for example, tend not to apply to the highest-paid workers, leaving them subject to long workweeks.<sup>32</sup> Additionally, the unpaid job protection provided by the Family and Medical Leave Act, or FMLA, is available to only about half of all workers, leaving a disproportionate share of low-wage workers with no access to job-protected leave or, typically, paid leave of any kind.<sup>33</sup>

The market has failed to come to grips with this issue on its own. Economists hypothesize—based on the theory of “compensating wage differentials”—that workers who need or value workplace flexibility will choose jobs that offer flexibility and will be willing to trade off higher wages in exchange.<sup>34</sup> But researchers have found that many workers appear to have only limited ability to bargain for these benefits. The workers who most need workplace flexibility report having the least access to it, and the workers who have the greatest access to flexibility are those with higher pay.<sup>35</sup> Furthermore, when employers voluntarily implement such policies, they are under no requirement to cover all their employees and consequently tend to offer these benefits as perks to high-status workers.<sup>36</sup>

One reason why the market may not be able to produce greater workplace flexibility is that so few U.S. workers today are covered by collective bargaining agreements that address wages, hours, and workplace flexibility. Unions have made some progress in getting those issues into their contracts, but with fewer than 1 in 15 private-sector U.S. workers belonging to a union today, those contracts do not help enough working families.<sup>37</sup>

We recommend building on the foundation of our basic labor standards by adding protections to address employees’ ability to have some control of their schedule and take paid time off to tend to their families’ care without fear of retaliation. Here are three specific recommendations:

- Implement a new system to encourage greater workplace flexibility that workers can use without fear.
- Modernize our social insurance system to include paid family and medical leave for all

workers.

- Modernize our basic labor protections to require that every employee can earn at least seven days of paid sick days annually to use without penalty when they are ill or need to care for a sick child.

Our recommendations update and build on the cornerstones already in place.

### Right to request flexibility

One cornerstone on which to build is the Fair Labor Standards Act, or FLSA, which first set out the nation's regulatory wage-and-hours framework. Although the FLSA was not designed to address work-family conflict, it limited some employees' hours of work and established the minimum wage, both of which affect the workers' ability to reserve time to care for families.<sup>38</sup> However, because the assumption underlying the FLSA is that workers are employed full time and have a stay-at-home spouse to fulfill caregiving obligations, the law did not deal with or encourage workplace flexibility.

The FLSA does not address part-time parity, sufficient hours of work, or scheduling flexibility. Issues around scheduling have grown in importance since most families now have no stay-at-home caregiver. Workers now need more flexibility to care for children and, increasingly, aging parents while also holding down a full-time job.

One way to address the need for workplace flexibility is to follow the lead of San Francisco and Vermont, which have recently passed right-to-request laws. This type of regulation gives workers the right to request a flexible schedule without fear of retaliation. Because many U.S. workers are subject to disciplinary action for even asking about schedule flexibility or predictability, the right to request could be a very important addition to the U.S. work-family policy framework. As noted by San Francisco Board of Supervisors President David Chiu, who introduced the city's ordinance, right-to-request legislation "will nudge real changes in workplace culture and eliminate stigma and bias around workers who request flexible schedules."<sup>39</sup> The newly passed policies in San Francisco and Vermont outline a process for employees and employers to discuss and negotiate workplace flexibility and permit employers to turn down the requests only for certain business reasons.<sup>40</sup> In Vermont, for example, employers may refuse the request for flexibility for reasons such as the burden of additional costs, negative effects on meeting customer demand or business quality and performance, or the inability to reorganize existing staff to make it work.<sup>41</sup>

Right to request is based on a model developed in the United Kingdom, New Zealand, and Australia that allows employees to request a change in the number or schedule of their work hours.<sup>42</sup> Employers may refuse the request but must provide the employee with an explanation and cannot retaliate against the employee.<sup>43</sup> This policy has increased the number of workers in the United Kingdom with flexible schedules.<sup>44</sup>

Making the right-to-request model work in the United States would require adapting it to fit the U.S. legal and institutional structure.<sup>45</sup> Employees would be assured a right to request a schedule that works for them and their employer. For the right-to-request model to be effective in the United States, it should also be used to help workers who do not want to or cannot work

overtime, want to place limits on their hours, or need scheduling predictability. Right-to-request legislation, in the form of the Working Families Flexibility Act, was introduced in the 111th Congress by Rep. Carolyn Maloney (D-NY) in the House of Representatives and Sen. Bob Casey (D-PA) in the Senate.<sup>46</sup>

## Family and medical leave insurance

The second cornerstone of our current labor standards system is the Social Security Act of 1935, which established Old-Age and Survivors Insurance, unemployment insurance, and income assistance to mothers and children. Some of the fundamental assumptions underlying the Social Security Act were:

- Individuals are either caregivers or breadwinners, but not both.
- Married couples typically stay married for life.
- Most families have a stay-at-home parent, usually a mother, to provide care for children, the sick, and the elderly.<sup>47</sup>

As with the FLSA, these assumptions leave gaps in coverage and eligibility for today's families. Policymakers have since tried to fill many of these voids—for example, by adding disability insurance in 1954—but the inequalities that affect caregivers remain. The most notable gap is the law's failure to cover caregiving leave. Three states—California, New Jersey, and Rhode Island—have state-level programs that provide social insurance to workers for family leave. However, the United States remains the only developed nation that does not provide some type of paid family and medical leave to workers nationwide.<sup>48</sup> Family and medical leave insurance—also known as paid family and medical leave or paid leave—provides wage replacement to workers who take temporary leave to recover from a serious illness or care for an ill family member, newborn, newly adopted child, or foster child.<sup>49</sup>

The Family and Medical Leave Act of 1993 was the first piece of legislation in U.S. history to give workers the right to job-protected leave for caregiving. The FMLA provides up to 12 weeks of unpaid leave per year to eligible employees who need time off to care for a new child, recover from a serious illness, or take care of a seriously ill family member.<sup>50</sup>

The FMLA gave approximately 84 million of the 142 million workers the right to job-protected, unpaid family and medical leave in 2012.<sup>51</sup> The FMLA, however, has two major shortcomings. The first is that the leave it provides is unpaid. Unlike programs that address time out of work for other reasons, such as a short-term disability or unemployment, the FMLA is not a social insurance program and does not provide workers with financial benefits; rather, it provides job protection. Unpaid leave, however, is not adequate for the needs of low- and moderate-income families. For them, the right to job-protected leave is nice, but not enough.<sup>52</sup> The FMLA's second shortcoming is that it excludes just under half of the labor force, many of whom are the workers who may need coverage the most. The law excludes workers in firms with less than 50 employees, those who have been with their employer for less than a year, and those who have worked fewer than 1,250 hours.<sup>53</sup> As a result, it fails to cover the workers who tend to earn less and are less likely to have access to employer-paid benefits.<sup>54</sup>

Thus far, the market has not filled the need for paid time off for caregiving on its own. Employers do not typically offer extended leave to care for a new child or an ill family member, and when they do, they tend to offer it only to higher-wage, higher-status workers. And employers who do provide paid leave, unlike those who offer pensions and health insurance, face no government requirements to ensure that the policy is applied uniformly within the firm.<sup>55</sup> Even within a given firm, not all employees may have access to the same paid family and medical leave benefits.<sup>56</sup> The employees who are least likely to get family and medical leave benefits are low-wage workers—those that are most likely to need leave because they cannot afford paid help to care for loved ones.<sup>57</sup> The U.S. Census Bureau reports that 66 percent of new mothers with a bachelor's degree or higher received some kind of paid maternity leave, compared with only 19 percent of those without a high school degree.<sup>58</sup>

Furthermore, the leave that does exist is a patchwork of sick days or medical leave for childbirth that provides very little time for caregiving or bonding with the new child. New fathers, who are ineligible for disability leave for childbirth, are typically offered little or no paid leave, and employees who deplete their sick days must hope that they—or their new child—does not get sick later on.

Three states—California, New Jersey, and as of this year, Rhode Island—have expanded their long-standing Temporary Disability Insurance, or TDI, programs, which cover medical leave including childbirth, to cover caregiver and bonding leave for new parents or for workers who need to care for a seriously ill family member.<sup>59</sup> In 2002, California extended its TDI program to offer six weeks of comprehensive leave, covering everyone and providing partial wage-replacement family leave.<sup>60</sup> New Jersey passed similar legislation in 2008,<sup>61</sup> and Rhode Island extended its TDI program this year to offer four weeks of family and medical leave.<sup>62</sup> In 2007, Washington became the first state to pass legislation establishing a new, standalone program for paid parental leave, although the financing mechanism remains to be worked out.<sup>63</sup>

The experimentation at the state level shows that paid family and medical leave can be a successful policy for both employers and employees. Eileen Appelbaum and Ruth Milkman's evaluation of California's family leave insurance program found that, contrary to opponents' warnings, it was not a "job killer." According to their survey, 9 out of 10 employers reported that the program has either no effect or positive effects on business operations. Their survey of employees revealed positive effects for workers who used the program.<sup>64</sup>

We recommend that the federal government follow the lead of these states and implement family and medical leave insurance through the Social Security Administration, as proposed in the Family and Medical Leave Insurance Act, or FAMILY Act.<sup>65</sup> Individuals would pay into a new trust fund that would support paid family and medical leaves. This would be similar to the extensions to Social Security for long-term disabilities that were implemented in the 1950s. There are a variety of advantages to the approach, including the reduced start-up costs for a new program, near-universal coverage of Social Security, and existing lifetime employment rules of Social Security Disability Insurance for determining adequate employment history and benefit level, which cover young and intermittent workers.

## Earned sick time

We should also add the right to earn sick time. Similar to the minimum wage, the right to earn paid sick days should be a basic employment standard. Earned sick time allows workers to take short, unplanned leave when the worker or a family member has an everyday illness. The need for earned sick time does not arise often, but when needed, it is urgently important for working families and to protect the public's health. Workers who lack paid sick days lose pay, risk losing their jobs, and endanger their family's livelihood if they stay home when they or their children are ill. Parents who lack paid sick days are more likely to send their children to school or daycare when they are ill or leave them home alone.<sup>66</sup> Employees who come to work sick compromise the health of their colleagues. Public health and the economic well-being of our families should not be threatened simply because a worker or a child has the flu.

For earned sick time to be effective at helping ill workers, employees need to be able to use it without prior notice to their employer or fear of retaliation. Some have argued that workers who have paid vacation or other personal leave are covered for sick time, but many workers cannot take this kind of leave without giving their employer advance notice, making it unusable when a child wakes up with a high fever or other urgent care needs arise.<sup>67</sup> As a result, this is not a viable policy strategy.<sup>68</sup>

Yet there are only a handful of places in the United States where workers currently have the right to job-protected leave if they are sick, although the list is rapidly growing. San Francisco added these protections in 2006; Washington, D.C. in 2008; Connecticut and Seattle in 2011; New York City, Portland, Oregon, and Jersey City, New Jersey, in 2013; and Newark, New Jersey in 2014.<sup>69</sup> Voters in Milwaukee, Wisconsin, passed an earned sick time ballot initiative in 2008, but in 2011 the ordinance was nullified by a bill that created uniform family and medical leave standards in Wisconsin.<sup>70</sup> And the Philadelphia City Council passed earned sick time legislation in 2011 that was vetoed by the mayor, although a similar provision was enacted in a later living wage bill that applies to city contractors.<sup>71</sup>

At the federal level, we recommend that Congress move forward with the Healthy Families Act, introduced as H.R. 1876 and S. 984 in the 112th Congress. This legislation would allow workers to earn one hour of sick leave for every 30 hours worked—up to seven days of earned sick time per year. The law excludes workers in firms with 15 or fewer employees.<sup>72</sup> The federal government could also lead the way by rewarding federal contractors that provide their employees with a minimum level of earned sick time.<sup>73</sup> Low-wage service workers—the type of workers who work for federal service contractors—are the least likely to have access to earned sick time.<sup>74</sup> Similar to the rest of the private sector, federal contractors are much more likely to offer earned sick time to their higher-wage employees. The federal government could make a real impact if it rewarded federal contractors by providing additional points during the review of competitively bid contracts for offering a minimum level of earned sick time to their employees.<sup>75</sup>

Updating the FLSA and social insurance in these ways would go a long way toward modernizing our labor laws to take account of the changed nature of the U.S. labor force. These policies



would facilitate women's employment and improve the ability of both men and women to be responsible employees and caring family members.

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$$(1) \quad a * H_t^M + (1-a) * H_t^F = H_t$$

For 1979 (denoted by  $t=0$ ), we can write (1) as (note that the weights are time-specific, but in fact change little over the time we analyze):

$$(2) \quad a_0 * H_0^M + (1-a_0) * H_0^F = H_0$$

Similarly for 2007 (denoted  $t=1$ ), we have:

$$(3) \quad a_1 * H_1^M + (1-a_1) * H_1^F = H_1$$

For the counterfactual exercise in Table 6, we use 2007 weights ( $a_1$ ) and the 2007 mean annual hours for men ( $H_1^M$ ), but substitute the mean annual hours for women from 1979:

$$(3) \quad a_1 * H_1^M + (1-a_1) * H_0^F = H_1$$

Where  $H_1$  is our estimate of the average number of hours in the economy if women (but not men) worked as they did in 1979.

The ratio of  $H_1$  to the actual average number of hours worked in 2007,  $H_1$ , gives a direct estimate of the impact of the hours change—a reduction in our estimates—on GDP.

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# Labor Standards and the Reorganization of Work: Gaps in Data and Research

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## **Abstract:**

A common but understudied argument is that the reorganization of work has contributed to the deterioration of labor standards in the US over the past four decades. Yet an analysis of existing aggregate data does not show a strong, unambiguous increase in key measures of nonstandard work. This paper therefore identifies data gaps and research questions that need to be answered, in order to better understand trends in workplace restructuring during the era of growing wage inequality.

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## **INTRODUCTION**

A common intuition about rising inequality in the US is that the reorganization of work and production has contributed to the undermining and erosion of labor standards. The argument is that employers have externalized work as a way to cut wages, reduce benefits, and evade or escape legal responsibility for their employees. This is also a concern about the future – that New Deal laws and policies are inadequate to protect workers in 21st century jobs, whether in the form of temp work, part-time jobs, subcontracting, or the use of independent contractors. Yet there is surprisingly little quantitative research that has attempted to link trends in the organization of work to the strong growth in wage inequality that stems back to the mid-70s (Fligstein and Shin 2003).

This paper takes a step in that direction, by providing a broad scan of available data on the question of how work has changed in the US over the past four decades. The analysis identifies different types of nonstandard work arrangements; attempts to estimate the prevalence of each; and asks which ones have become more prevalent over time. It then briefly reviews evidence on several other measures, such as job instability, that could also signal a dissolution of the standard employment relationship.

As will be detailed below, aggregate data do not show a strong, unambiguous increase in nonstandard forms of work, and thus investigating a link to trends in distributional wage outcomes is premature. The main goal in this paper is therefore to identify key data gaps and research questions that need to be answered, in order to better understand trends in workplace restructuring during the era of growing inequality.

## **MEASURING NONSTANDARD WORK**

A large literature has analyzed changes in the organization of work over the past three or four decades, and predictably, differences in definitions and concepts abound. Kalleberg (2009) and Smith (1997) provide thorough reviews; this paper turns directly to identifying the major forms of work that have animated concern about growing precariousness.

The common touchstone in thinking about changes in the US labor market is the archetype of the standard job, where workers are full-time, permanent, and directly employed by a firm. Even at the height of mass industrialization many jobs did not fit this description, with many workers relegated to the secondary labor market. But half a century later, this archetype is still the reference point, both in academic research and public discourse.

As a result, nonstandard work arrangements are typically defined by researchers as departing from the standard employment relationship on at least one dimension: (1) the job is temporary, (2) the job is part-time, (3) the worker is employed by an intermediary, or (4) there is no employer at all.

A related concept is contingent work, and there continues to be vibrant debate in the literature about whether or not all forms of nonstandard work (such as part-time jobs) are contingent. The official BLS definition of contingent work is “any work arrangement which does not contain an explicit or implicit contract for long-term employment” (Polivka and Nardone 1989).<sup>1</sup> Some researchers point out that a significant number of part-time jobs are permanent and that independent contractors can have long-term stable employment, and that therefore contingency is a separate dimension of job quality from how work is organized.<sup>2</sup> Others argue that nonstandard work is contingent by its very nature.

Given the lack of consensus on how to define contingent work, my strategy is to focus on nonstandard work arrangements, which are better defined and more easily measured. The first section presents trends in three nonstandard work arrangements: temporary work; part-time work; and independent contractors. The second section summarizes the quite sparse evidence on subcontracting, a business practice which I argue does not necessarily result in nonstandard or contingent work. I then briefly review evidence on two other measures that could signal the dissolution of the standard employment contract, namely trends in job stability and firm size. The concluding discussion then proposes a simple framework to guide future research in this area.

## **EVIDENCE ON TRENDS IN NONSTANDARD WORK ARRANGEMENTS**

### **Temp work**

Temp work is generally defined as time-limited work, and comprises a range of employment relationships: (1) workers placed at an employer by temp agencies and other types of employment services providers; (2) on-call workers such as substitute teachers and day laborers; and (3) workers who are directly hired on a temporary basis by an employer.

The best measured of these categories is the first one: workers employed by the employment services industry (hereafter referred to temp agency work for short). This industry includes temporary help agencies, Professional Employer Organizations (which lease workers), and employment services agencies. Estimates of employment and trends in this industry vary depending on the dataset used. Dey, Houseman and Polivka (2009) have conducted an exhaustive analysis, and this paper follows their lead in using the BLS’s Current Employment Statistics (CES) data as the most accurate.

Table 1 shows that currently 2.5 percent of the workforce (or 3.4 million) is employed by the employment services industry, the majority by temp agencies.<sup>3</sup> This percentage increased during the 1990s, but has been relatively flat since then (fluctuations during recessions aside).

While the overall penetration of temp agency work in the US labor market is quite low, there is variation at the occupation level. Figure 1 shows the percent of detailed occupations employed

by the employment services industry in 2012, plotted by the occupation's median earnings.<sup>4</sup> Again, most occupations have only a small percent of temp agency workers. But four stand out as having higher rates of temp agency work, and they are all lower wage. These particular occupations are not surprising, since in 2005, 38.7 percent of temp workers were assigned to the manufacturing sector, 13.9 percent to trade, transportation and utilities, and 18.4 percent to professional and business services (Dey, Houseman and Polivka 2009).

Researchers have identified several other types of temporary workers, in addition to those employed by agencies: on-call workers and direct-hire temps. Table 2 shows estimates of trends over time for these categories from the Contingent Worker Supplement (CWS) of the Current Population Survey. The drawback to this data source is that it is a survey of workers, and so depends heavily on the worker's ability to correctly identify who her employer is (not an easy task given the complexity of these work arrangements). For example, the percent of respondents that report working for temporary help agencies in this survey is lower than in Table 1 (which is based on the CES establishment survey and is more reliable). Nevertheless, the CWS is useful because it measures on-call work and direct-hire temps. Over the ten year period from 1995 to 2005, there was no significant increase in these two forms of work.

*Data and research needs:*

- Because it measures forms of work unavailable in other datasets, the CPS Contingent Worker Supplement (halted in 2005) should be re-established as a recurring survey. However, measures need to be sharpened and questions added to better allow reconciliation of estimates across different datasets.
- For enforcement agencies and policymakers, ideally we would have data on the use of temp workers by specific industries at the local level. For example, while the national rate of temp work is quite low, in regions such as the Inland Empire and Chicago we know that the warehousing industry employs a significant number of temp workers (Struna 2012). In a similar vein, Cappelli and Keller (2013) report the potentially important finding that the use of temp agency workers is highly concentrated among relatively few establishments. A key task, therefore, is to explore ways of harnessing existing employer surveys at the state (or even city) level to gather local, industry-specific data on the reliance of temp work.

**Part-time work**

The Bureau of Labor Statistics defines part-time workers as those who usually work less than 35 hours per week – currently 28 million workers, or 19.2 percent of the US workforce. Of part-time workers, the majority are classified as “voluntary” part-time (college students or young mothers or caregivers, for example).<sup>5</sup> A minority are classified as “involuntary” part-time, meaning the worker would rather have a full-time job but can't find one for economic reasons;

this category is highly cyclical and grows steeply during recessions (currently 8 million workers are involuntary part-timers).

Figure 2 shows long-run trends in part-time employment. After increasing during the 1970s, both the overall percent part-time and the percent involuntary part-time have been largely flat, with the exception of cyclical increases during recessions.<sup>6</sup>

The sharp increase in both part-time measures during the Great Recession is especially marked; this is not surprising, given the unusual severity of the recession. A common question is whether the ongoing elevated rate of involuntary part-time work reflects continuing weakness in the economy, or potentially signals a secular trend. Figure 3 suggests that so far, the trend in involuntary part-time work has closely tracked the trend in the unemployment rate, indicating it is still largely cyclical (the 2001 recession graph is provided as a point of comparison). At this point, there is not yet evidence of a permanent, long-run increase.

Although the aggregate trends in Figure 2 have been stable for several decades, it is possible that they could be masking important underlying changes in part-time work. What follows are several research questions to explore this possibility.

*Data and research needs:*

- Have there been changes in the *distribution* of part-time work, that cancel out in the aggregate? For example, we know that low-wage workers are more likely to be part-time than higher-wage workers; has that gap changed since the mid-70s? Have there been divergent trends in the prevalence of part-time work across different industries? In answering these and related questions, researchers will need to be careful to account for demographic shifts that occurred during the past 40 years, including the significant increase in women's labor force participation and growth in their hours of work (Rones, Ilg and Gardner 1997).
- Have the penalties for working part-time grown over time? We know that on average, part-time workers are paid less than comparable full-time workers and are less likely to receive employer-provided health and pension benefits. But has that gap changed over time? For example, in a descriptive analysis of the CPS I find that real median wages for full-time workers grew 10 percent from 1979 to 2012, but declined slightly for part-time workers. As a result, the part-time wage penalty increased from 39 to 46 percent (of full-time wages) during that time period.
- What about measures of hours instability? While data are sparse, researchers have identified worrisome trends toward just-in-time and on-call scheduling, and the growth in non-standard shifts. This is an urgent area for new data collection going forward,

since low-wage workers are more likely to work in jobs with unpredictable shifts and nonstandard hours (Lambert, Haley-Lock and Henly 2012).

- What about trends in weeks worked per year? A large literature has documented that US workers (especially women) have significantly increased the number of annual weeks worked since the mid-1970s, and that seasonal work has become less common (Rones, Ilg and Gardner 1997). Figure 4 shows this trend toward more weeks worked per year, for both part-time and full-time workers. But there is evidence that the *distribution* of weeks worked has polarized, with professional workers putting in more hours and low-wage workers struggling to get enough hours (Fligstein and Shin 2003). We need more research on who has borne the brunt of this growing hours gap, and how that maps onto trends in the income distribution.

More generally, a clear lesson from the research literature is that part-time work is not monolithic. On the one hand, significant numbers of part-time jobs are low wage, do not offer benefits, are subject to volatile schedules, and result in high rates of poverty for the workers who inhabit them (this is especially true for involuntary part-time workers, see Valetta and Bengali 2013). At the same time, for some subset of part-timers, this work arrangement is functional and the desired form of engagement (e.g. for students) and offers family flexibility (e.g. young moms). Relevant here is that 54 percent of part-time workers in 2007 were secondary wage earners who voluntarily worked less than full-time, with no detrimental effect on economic security (Shaefer 2009). As with temp work, the lesson for enforcement agencies and policymakers is to identify particular industries where part-time work has contributed to the degradation of labor standards.

### **Independent contractors**

Defining independent contracting is complex (Planmatics 2000). From the standpoint of the IRS, independent contractors are individuals who receive 1099 forms from their employers, yet some portion of these workers may be misclassified. In the legal context, several different tests exist to distinguish employees from independent contractors; the ultimate designation can differ depending on the test used, the particular employment law in question, and state law.

The most reliable source of information we have on independent contracting is data on the self-employed. The Bureau of Labor Statistics gathers data on two types of self-employed persons: those who are unincorporated and those who are incorporated. The official BLS definition of self-employment only includes those who are unincorporated (and who presumably receive 1099 forms), since technically those who have incorporated appear on their business' payroll as wage and salary employees, not contractors (Hipple 2010). Some argue that there is a substantive distinction here as well – for example, that a small restaurant owner who has incorporated is different from a free-lance graphic designer. Others argue that incorporation is

purely a tax decision and does not substantively change the nature of self-employment (Cohany 1998).

In 2013, there were 14.7 million self-employed persons in the US, or 10.2 percent of the workforce. Figure 5 shows the percent incorporated and unincorporated self-employed from 1970 to 2013.<sup>7</sup> Overall, the percent self-employed has remained relatively stable over time. The mild decline in the unincorporated self-employment is mainly due to declines in agricultural employment, and has been offset by growth in incorporation (Hipple 2010).

An important lesson from existing research on the self-employed/independent contractors is the sheer diversity of the population in this category. The occupations range from management consultants, lawyers, doctors, farm managers, and architects, to insurance agents, construction contractors, dry cleaners, graphic design freelancers, and real estate brokers, to street vendors, barbers, auto mechanics, landscapers, cab drivers, caregivers, and truck drivers. Similarly, educational backgrounds range from workers with less than a high school degree to workers with advanced degrees. And annual incomes for the self-employed vary widely (though the median has consistently been higher than private sector wage and salary workers).

Moreover, echoing a consistent theme in the literature, in its most recent survey the BLS found that 82.3 percent of independent contractors prefer an independent or alternative work arrangement to being an employee; only 9.2 percent would prefer an employment arrangement or job (US Bureau of Labor Statistics 2005).

At the same time, we know that in a subset of industries and for low-wage workers in particular, independent contractor status can mean poverty wages, unsafe workplaces and chronic wage and employment instability (for example, in residential construction and trucking). Closely related is the problem of misclassification, where unfortunately we have very little data. While a number of state audits have estimated the percent of employers who misclassify employees as independent contractors, there are no reliable data on the percent of the workforce that is misclassified (this is the more important measure, since a given employer could be misclassifying one or 100 workers). A best guess is that perhaps 1-2 percent of the workforce is misclassified.<sup>8</sup> We have no national data on misclassification trends over time.

If the question is what forms of work are undermining labor standards, the broad category of self-employed/independent contractor may not be very useful; combining highly-paid managerial consultants or architects with day laborers or home health aides doesn't make much sense from a research perspective.

Instead, it might be more fruitful to focus on identifying different models of independent contracting, along multiple dimensions of job quality and employment stability. In particular, a rich area for development is what has sometimes been called *dependent* contractors.



Substantively, the concept of “dependent contractor” would capture workers who are true independent contractors (i.e. they are not misclassified), but where the economic terms and conditions of employment are not under the workers’ control (see Kennedy (2005) for a legal treatment). For example, taxi drivers in New York City are independent contractors, but the city’s Taxi and Limousine Commission sets the fares and lease rates that effectively determine the drivers’ wage rate (and also their working conditions, since drivers must work long shifts six or seven days a week in order to clear any profit). Similarly, in 2005 there were over 19,000 publicly-subsidized childcare workers operating as independent contractors in New York City; however, the reimbursement rates were set by the City’s Administration for Children’s Services and in many instances resulted in sub-minimum wages (Bernhardt, McGrath and DeFilippis 2007).

*Data and research needs:*

- In order to sharpen the definition and measurement of independent contracting, a key task is to analyze IRS tax data and compare 1099 filings with BLS data on self-employment – and then reconcile any differences in prevalence and trends.
- Similarly, if the CPS Contingent Worker Supplement is fielded again, questions should be added to help reconcile worker self-identification as independent contractors with official statistics on self-employment. For example, the percent of the workforce identifying as independent contractors in the CWS worker survey only ranged between 6 and 7 in late 1990s and early 2000s, and included both self-employed and wage and salary workers (US Bureau of Labor Statistics 1995, 2005).
- We urgently need regular, ongoing collection of representative data on misclassification, at both the national and state level. Important will be to focus on estimating the number of workers misclassified (and who they are and in which industries they work), not just number of employers who misclassify.
- More generally, a key agenda for future research is to conduct in-depth industry and occupation case studies in order to identify “dependent contractors” and other models of independent contracting that are especially vulnerable to exploitation and that undermine labor standards.

**domestic Subcontracting**

One of the fundamental economic transformations of our time has been the vertical disintegration of the firm (Powell 1990). At the height of mass industrialization, the dominant economic organizations were large, complex and vertically integrated, meaning that most stages of the supply chain for a given product or service were incorporated within a single firm. Since then, companies have increasingly focused on their “core competencies” and contracted out other functions to suppliers and contractors, either domestically or overseas, in what is

sometimes referred to as the “make or buy” decision. This shift to networked production has had many drivers, key among them the economic crises of the 1970s, globalization, new communication and transportation technologies, and industry deregulation (Piore and Sable 1984).

While business schools and management journals have closely tracked and often advocated for the use of subcontracting, we have only very sparse data on the prevalence and job quality effects of the practice, and virtually no representative data on trends over time. In what follows, I summarize the results of an in-depth literature review of what we know about domestic subcontracting, with the caveat that this research is still ongoing and so the analysis is preliminary (and necessarily incomplete given the virtual absence of representative data).<sup>9</sup>

The research literature makes an important distinction between two units of analysis that are sometimes conflated in policy debates:

- i. *Subcontracting as an action by an employer*: Subcontracting is a discrete decision made by an employer to take a function (sometimes previously done in-house) and contract it out to another firm or company. Thus, a *contractor* is the company that provides the goods or services being subcontracted, and a *contracting company* is the firm that contracts out the function.<sup>10</sup>
- ii. *Subcontracted jobs*: Here, the unit of the analysis is the job that has been subcontracted. The direct employer is the contractor company, and the job may be either on-site or off-site.<sup>11</sup>

### **Prevalence**

There is little by way of systematic, representative data on domestic subcontracting in the private sector (my focus is on the private sector since contracting out by the public sector is better documented). Our best measures are of firm practices, where employer surveys suggest that subcontracting is widespread. For example, Johnson (1996) reports that 86 percent of Fortune 500 businesses subcontracted at least one function in the 1990s, and Hewitt Associates found that 93 percent of respondents had subcontracted out some human resource functions in 1996 (Greer, Youngblood and Gray 1999). Houseman (2001) used a telephone survey of 500 establishments conducted in 1996 and found that 44 percent of them used contract workers. Other researchers draw on BEA data to conduct input-output analyses, isolating an industry’s intermediate inputs purchased from other industries. For example, Han, Kauffman and Nault (2011) found that on average, a single US industry spends \$1.7 billion a year on IT subcontracting.

Unfortunately, representative data on the number of subcontracted jobs or workers in the US are almost non-existent, or else deeply flawed. As a result, it is currently not possible to

estimate the number or percent of workers affected by the practice.

The CPS Contingent Work Supplement (CWS) attempted to measure contracted work in its worker surveys. Unfortunately, the estimates from this survey are not reliable because they depend on workers accurately identifying that they are working for a contractor. The problem is that security guards working for Securitas or accountants at an accounting firm are unlikely to identify their employer as a contractor. To wit, in 2005 only 0.6 percent of workers said they were contract workers in the CWS (US Bureau of Labor Statistics 2005). But in that year, the Professional and Business Services sector alone employed 12.7 percent of the workforce; this sector consists exclusively of contract companies that provide services to other companies (in 2013, it employed 18.5 million workers, or 13.6 percent of the workforce).

In some cases, it is possible to triangulate prevalence data for specific occupations where one can identify contractor industries (Dey, Houseman, and Polivka 2009). For example, Dube and Kaplan (2010) used BLS data to show that the share of janitors employed by building services contractors (as opposed to other industries) increased from 16 percent in 1983 to 22 percent in 2000. Using the same logic, in Table 3 we analyzed 2012 BLS data to estimate the percent of select occupations that have a substantial percent of workers contracted out. This is not a representative table; the list of occupations is purely illustrative, chosen because it was possible to identify key contractor industries. Similarly, the estimated percent of workers contracted out is conservative, because there are likely other industries where these occupations are employed by contractors. Nevertheless, the high prevalence rates in this table suggest that subcontracting merits a significant investment of new data gathering and research to fully document the practice and its impact.

## **TRENDS AND PRELIMINARY OBSERVATIONS**

Despite the lack of hard data, the existing research literature (often in the form of case studies) does yield insights into the complexity of subcontracting.

### *1. Contracting out is not always a strategy to cut wages*

Researchers have identified a range of motivations for subcontracting, which often differ depending on the type of function being contracted out. A common motivation is to take advantage of cost savings that may arise from lower wages, union avoidance, greater economies of scale, access to more efficient technology, and reduced monitoring and transaction costs (Fixler and Siegal 1999). Firms also use subcontractors to overcome capacity constraints, to obtain specializations and skills that are not available in-house, to comply with new regulations, to smooth production cycles, or to focus on the enterprise's core competency (Abraham and Taylor 1999).

In addition to discrete “make or buy” decisions about a particular function (where the question of motivation is more relevant), researchers have long noted that subcontracting is inherent to the production and distribution systems of certain industries that are project based, such as construction, apparel and motion pictures (Powell 1990). Another distinct form of subcontracting is the logistics sector, which has grown alongside big-box retailers such as Wal-Mart, Home-Depot and others. Increasingly, logistics firms coordinate multiple functions such as transportation and warehousing, customs clearance and brokerage, contract labor, information technology, and inventory management among others (Langley, Allen and Dale 2004).

Bernhardt and Garrick (2013) give a detailed table of commonly subcontracted functions by industry. The functions vary widely, and include HR and R&D functions; building services; recycling; regulation and compliance; accounting; credit card collections; call centers; mortgage and check processing; information technology and data processing; logistics; machine maintenance; cable installation; food services and food processing; parts manufacturing and assembly; laundry; housekeeping; diagnostic labs; and clinical research trials.

## *2. The impact of subcontracting on job quality not inherently negative, and subcontracted work is not inherently contingent*

Even with weak data, existing research suggests that contracting out does not necessarily result in a deterioration of working conditions. Rather, the impact of subcontracting on wages, benefits, and other job quality outcomes differs depending on a host of factors – the economics of the contractor industry, the reason for subcontracting, the size of the contractor firm, the presence or lack of unions, the skill requirements of the occupation, government regulation and enforcement, and so forth. As a result, we see a wide range of outcomes, from the fissured employment relationship and exploitation that Weil (2011) documented in the janitorial and fast food industries, to the full-time, permanent jobs of many segments of the Professional and Business Services sector (Sharpe 2001).

This is an area that requires much more research: identifying the conditions under which contracting out does, or does not, result in worse outcomes for workers. A related point is that subcontracted work is not inherently contingent. For example, Carnoy, Castells and Benner (1997) argue that when contract firms have multiple clients, a large degree of independence, and provide relatively secure, full-time employment to their employees, they should not be included in the definition of contingent employment. Similarly, Polivka (1996) shows that not all workers in alternative work arrangements are contingent under the BLS’s official definition, and points out that depending on the occupation, subcontracted workers can develop stable relationships with the contract company.

At the same time, there are many occupations where working conditions deteriorate when jobs

are contracted out. For example, Dube and Kaplan (2010) used CPS and BEA data and found that janitors and security guards that work for building and protective service contractors earn less than those working in other industries. Other examples include school cafeteria workers (McCain 2009), call center workers (Batt and Nohara 2009), and petrochemical workers (Rebitzer 1994). Depending on the industry, subcontracting can also increase the prevalence of labor and employment law violations. Contract warehouses, for example, are known to be rife with minimum wage, overtime, and health and safety violations (Struna 2012). Finally, researchers have pointed out that while some contractor companies may have long-term relationships with their employees and offer promotions, subcontracting raises the risk that jobs are removed from internal labor markets.

*3. Subcontracting is not unidirectional or always in the direction of fragmentation, and increasingly, new functions like waste management are subcontracted from the outset*

Subcontracting is changing the industrial structure of the US, triggering robust growth in industries that are primarily dedicated to providing goods and services to other companies. In some cases, new services such as waste management and IT functions have been contracted out from the start, and were never in-house to begin with. Many of these newer contract industries are part of the Professional and Business Services (PBS) sector; Berlingieri (2012) used input-output analysis to show that the growth in PBS alone can explain 14 percent of the increase in services employment.

At the same time, the contracting trend is not always uni-directional. For example, data-processing activities were initially provided mainly by contractors, but then as computing costs went down, firms brought this function in-house. As the need for highly specialized data processing grew, however, these functions were contracted out again (O’Hallachain and Reid 1991).

Another key lesson from the research literature is that subcontracting is not inherently a process of fragmentation; contractor firms run the gamut from small fly-by night shops to large multi-nationals. Perhaps even more important, in some contractor industries there is evidence of consolidation and diversification. For example, Aramark, Compass and Sodexo started out as food service contractors, but have expanded and are now offering a full range of services to companies including environmental, laundry and facilities management services (Lawn and Bulzalka 1998). The market share of these contractors is a significant indicator of industry consolidation: Aramark held 29 percent of the food service market share in 2012 (Samadi 2012) and Cintas Corporation held 27 percent of the industrial laundry market share (Moldvay 2012). In a similar vein, third-party logistics companies increasingly offer the full range of logistics services and thus are dominating the market for supply chain coordination.

In sum, there is a stylized view of subcontracting as a uni-directional process of economic

fragmentation. But this may be a simplified and short-run perspective. Fragmentation has indeed occurred in industries with heavy reliance on subcontracting, but that may be only the first stage in an ongoing and constantly evolving system of networked production. As entire industries of contractors emerge, it should be no surprise that they change via industry consolidation and concentration, with likely complex implications for job quality and stability.

*Data and research needs:*

- Subcontracting is easily the worst-measured of the various dimensions of the reorganization of work in the US. We may not be able to reconstruct past trends, but at the very least, we urgently need to ensure that the practice is fully documented going forward. Rectifying the data gap will require sustained collaboration between university researchers and the DOL, BLS, Census and BEA, in order to identify existing surveys that can be augmented to allow better estimation of prevalence at the industry, firm and job level.
- At the same time, we need to generate in-depth, rigorous case studies of domestic subcontracting in key industries, harnessing industry data and combining it with qualitative field research. The goal of these case studies would include mapping the structure of contracting relationships and supply chains; identifying where the economic power lies in those relationships; and measuring the impact on the employment relationship. Key here will be to identify different models of subcontracting in order to pinpoint the ones that undermine labor standards.
- Equally important will be to conduct research on the contractor industries themselves, tracking changes in the organization of work and production as existing contractor industries mature and as new ones come online.

## **OTHER DIMENSIONS OF CHANGE AT WORK**

### **Job instability**

Conventional wisdom holds that the life-long job in America is dead – that long-term employment relationships have been replaced by job churning and short-term gigs. It's a deeply held image in the public mind, and closely related to the intuition that contingent work has become the norm.

And yet, academic researchers have so far failed to find compelling evidence of a strong, secular increase in job instability over the last 30 or 40 years. The lack of consensus among economists was so surprising that, at the end of the 1990s, the Russell Sage Foundation supported a major effort by a group of researchers to reconcile measures and findings across a wide range of datasets. The result was greater clarity about why different datasets were

yielding different trends on measures such as job tenure, job retention rates, and the probability of job loss. Substantively, the researchers found some evidence of mild declines in long tenures during the downsizing wave of the early 1990s, particularly for managerial and professional workers; some increase in short tenures in the 1970s (but not since then); and some increase in job loss during the 1980s (but not the 1990s). Taken as a whole, however, no clear long-term trend toward greater instability emerged from that collective effort (see Neumark (2000) for a detailed assessment). Several papers have been published since then using more recent data, but again yield conflicting findings (Stevens 2005, Farber 2008).

A new research effort to assess long-term trends in job stability is clearly warranted, given the importance of the topic for public policy, as well as the availability of more than a decade of additional data. In addition, it may be that recent advances in access to administrative data could yield more rigorous measures.

At the same time, an under-researched question is whether the wage consequences of job changing or job loss have changed over time. One study in the Russell Sage Foundation project found that the wage returns to job changing became more unequal for young men entering the labor market in the 1980s and early 1990s (Neumark 2000). From the standpoint of public policy, it will be important to extend this type of analysis to the present, for the full population of workers.

### **Firm/establishment size**

Another trend that would have the potential to undermine labor standards and job quality is a shift in employment toward smaller firms, which on average offer lower wages, fewer benefits, more part-time work, more violations of employment and labor law, and less stability than larger firms (Brown and Medoff 1989, Pedace 2010; Bernhardt et al. 2009). An important distinction in this research area is the difference between firms and establishments; for example, The Gap is a large multinational firm, but its stores – or establishments – are small.

Table 4 looks at trends in the distribution of employment across firm size between 1977 and 2011. Even though the majority of firms in the economy are small, the table shows that large firms employ a sizeable and disproportionate percent of the workforce.<sup>12</sup> In terms of trends over time, there is evidence of a mild shift in employment from small firms toward medium and large firms. Table 5 replicates the analysis for establishments; here, there is evidence of a mild shift in employment from both small and large establishments toward medium establishments.

On the whole, however, neither table shows the type of dramatic change in employment by firm or establishment size that would have an appreciable impact on the wage distribution and other job quality outcomes. That said, it would be useful to analyze firm/establishment size trends in particular industries, and to ask whether the small-firm penalty in wages and other job quality outcomes has changed over time.

## A SIMPLE FRAMEWORK FOR FUTURE RESEARCH

The preceding sections have flagged a number of research and data gaps that need to be filled (and note that these were not meant to be exhaustive, but rather a starter list). Implied in the analysis has been a simple framework for the different ways in which nonstandard forms of work could potentially undermine labor standards over time:

- *Changes in prevalence:* Nonstandard work may become more prevalent over time, shifting more workers into jobs that have lower wages, are vulnerable to violations of employment and labor laws, or lie wholly outside coverage by those laws.
- *Changes in distribution:* Even if the prevalence of nonstandard work remains steady, its distribution may change over time, in ways that concentrate negative effects on different groups of workers or in particular industries.
- *Changes in impact:* Similarly, even if the prevalence of nonstandard work remains steady, the penalties of having a nonstandard job may increase over time, resulting in a bigger gap in wages and other job quality measures compared to full-time, permanent jobs.
- *Threat effects:* Employers may use the threat of moving to nonstandard work as a way to hold down wages and cut benefits.

## CONCLUSION

The past 40 years have seen a dramatic shift against US workers: income inequality has grown, wages have stagnated for many, employers have cut back on health and retirement benefits, and upward mobility has declined. The debate about causes will no doubt continue, but at this point, the sheer magnitude of the decline in economic security and opportunity is undeniable.

In addition, we all share a strong intuition that the nature of work has fundamentally changed, contributing to the deterioration of labor standards. Yet at least with aggregate national data, it has been hard to find evidence of a strong, unambiguous shift toward nonstandard or contingent forms of work – especially in contrast to the dramatic increase in wage inequality. This is not to say that there have been no changes in the workplace. But as this paper has emphasized, for enforcement agencies and policymakers, it may be more fruitful to focus on specific industries and regions in assessing when and where pernicious forms of nonstandard work have grown, and which groups of workers have been most impacted.

The data analysis in this paper also suggests that researchers might fruitfully take up several broader questions. How much of the growth in inequality has been transmitted via the reorganization of work, and how much has been driven by a broad-based dismantling of the



social contract? How much of the threat to the Fair Labor Standards Act and other labor standards has come from shifts in the employment relationship, as compared to the loss of bargaining power and enforcement capacity across work arrangements? A good start on answering these questions (and tracking trends in the future) will be to significantly strengthen data and research on nonstandard work and the understudied trend of subcontracting.

**Table 1. Percent of US workforce placed by employment services providers**

	1990	2000	2013
Employment services industry	1.4	2.9	2.5
Temporary help agencies	1.1	2.0	2.0
Professional employer organizations (PEOs)	0.1	0.6	0.3
Employment placement agencies & executive search services	0.2	0.3	0.2

Source: *Current Employment Statistics, Bureau of Labor Statistics.*

**Table 2. Percent of workers in temporary work arrangements**

	1995	2005
Agency temps	1.0	0.9
On-call workers and day laborers	1.6	1.8
Direct-hire temps	2.8	2.1

Source: *CPS Contingent Worker Supplement, as reported in US Bureau of Labor Statistics (1995, 2005) and US Government Accountability Office (2006).*

**Table 3. Percent of workers employed in select contractor industries, for select occupations, 2012**

Occupation	Contractor industry	Median hourly wage	Percent of occupation in contractor industry
Laundry and Dry-Cleaning Workers	Dry-cleaning and Laundry Services	\$9.58	53
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	Services to Buildings and Dwellings	\$10.73	37
Telemarketers	Business Support Services	\$10.74	55
Security Guards	Investigation and Security Services	\$11.52	58
Customer Service Representatives	Professional and Business Services	\$14.70	26
Heavy and Tractor-Trailer Truck Drivers	Truck Transportation; Support Activities for Transportation	\$18.37	54
Construction Trades Workers	Specialty Trade Contractors	\$18.74	51
Service Unit Operators, Oil, Gas, and Mining	Support Activities for Mining	\$20.18	84
Paralegals and Legal	Professional, Scientific, and Technical	\$22.59	75

Occupation	Contractor industry	Median hourly wage	Percent of occupation in contractor industry
Assistants	Services		
Accountants and Auditors	Professional, Scientific, and Technical Services	\$30.55	35
Computer Occupations	Professional, Scientific, and Technical Services	\$36.67	35

Source: Author's analysis of Occupational Employment Statistics, Bureau of Labor Statistics.

**Table 4. Distribution of employment across firm size, 1977-2011**

Firm size	Percent of employment		Percentage point change
	1977	2011	
1 to 4 employees	6.8	5.2	-1.6
5 to 9	7.1	5.9	-1.2
10 to 19	8.1	7.1	-1
20 to 49	10.4	9.8	-0.7
50 to 99	7.2	6.9	-0.3
100 to 249	7.8	8.4	0.6
250 to 499	4.9	5.6	0.7
500 to 999	4.8	5.3	0.5
1000 +	43	45.8	0.8

Source: Business Dynamics Statistics, US Census Bureau.

**Table 5. Distribution of employment across establishment size, 1977-2011**

Establishment size	Percent of employment		Percentage point change
	1977	2011	
1 to 4 employees	8	6.2	-1.8
5 to 9	9	8.3	-0.7
10 to 19	10.7	11.3	0.6
20 to 49	15.3	16.7	1.4
50 to 99	11.4	12.7	1.4
100 to 249	13.4	15.6	2.2
250 to 499	9	9	0
500 to 999	7.7	6.6	-1.1
1000 +	15.5	13.5	-2

Source: Business Dynamics Statistics, US Census Bureau.

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## ENDNOTES

<sup>1</sup> The BLS measured contingent work five times with its Contingent Work Survey between 1995 and 2005, based on a series of questions about whether the respondent's job was short-term. It calculated three different estimates of the percent of the workforce that was contingent, ranging from 2-4 percent, with little change across those ten years (Hipple 2001, US Bureau of Labor Statistics 2005).

<sup>2</sup> For example, the US Bureau of Labor Statistics (2005) found that 39.3 percent of temp agency workers did not qualify as contingent according to the agency's definition. This finding likely reflects the great variety of employment relationships with temp agencies, where some workers have a long-term relationship with an agency (even though they are placed with multiple clients), or become perma-temps at a particular client.

<sup>3</sup> The large majority of workers employed in the employment services industry are those placed at client companies; only a small percent are industry staff (Dey, Houseman and Polivka 2009).

<sup>4</sup> Ten (mainly professional) occupations are not included in this graph because of missing data on employment in the Employment Services industry.

<sup>5</sup> As Shaefer (2009) points out, the "voluntary" category is probably better described as workers who do not want full-time jobs or are not able to take full-time jobs because of family obligations (child care, elder care, health and medical limitations).

<sup>6</sup> The Current Population Survey underwent a significant redesign in 1994 that increased the estimated percent of part-time workers in the US. For 1968-1993, we use the adjustments provided by the BLS to create a consistent series (Polivka and Miller 1998); these adjustments not substantively affect the trend line.

<sup>7</sup> Pre-1994 data were adjusted for survey redesign using adjustments provided by Polivka and Miller (1998); these adjustments not substantively affect the trend line.

<sup>8</sup> In 1984, the IRS made its last misclassification estimate, finding that 15 percent of employers misclassified 3.4 million workers as independent contractors (US Government Accountability

Office 2006). Since then, a number of states have conducted their own audits, of varying quality; Planmatics (2000) extrapolated a range of 1-2 percent based on these.

<sup>9</sup> This research was done as part of a broader project by the National Employment Law Project on subcontracting in the spring of 2013; this section draws heavily on Bernhardt and Garrick (2013).

<sup>10</sup> Independent contractors (not misclassified) can be thought of as one manifestation of contracting out, since the individual worker provides his or her services to a company under the terms of a contract.

<sup>11</sup> While there is overlap, the literature clearly distinguishes temp work from subcontracted work on two dimensions: who supervises the worker, and the permanence of the contract. Temporary workers are typically supervised by the contracting, or client firm, and the tenure of their employment is meant to be short-term. Contract employees typically are supervised by the contractor firm, and tenure can be long term and often permanent.

<sup>12</sup> Unfortunately, there is no consensus definition of small, medium and large firms. The threshold separating small from medium firms can range anywhere from 50 to 500 employees, depending on the statistical agency. The threshold separation medium from large firms is typically 500 or 1000. Firms with less than 10 employees are often called micro-firms.





# **New inflation-adjusted salary test would bring needed clarity to FLSA overtime rules**

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## Introduction

Seventy-five years ago, the Fair Labor Standards Act (FLSA) of 1938 established the rules governing overtime pay. Workers covered by the FLSA overtime provisions must be paid at least “time-and-a-half,” or 1.5 times their regular pay rate, for each hour of work per week beyond 40 hours.

These provisions are important for covered workers, including 75 million hourly-wage workers, who value having a 40-hour workweek and earning extra pay when they work overtime. The right to a limited workweek provides time for leisure, civic participation, commuting, self-improvement, and tending to family and friends. Preserving this right is just as important today as it was 75 years ago, and, when it comes to child-rearing, might be even more important. Between 1968 and 2008, the share of children living in households in which all parents work full time doubled from 24.6 percent to 48.3 percent.

The overtime (OT) provisions of the FLSA are also important for employers, who must factor in the added expense when considering their labor costs.

Though we reference these costs throughout our analysis, the focus of our paper is a fairly narrow but critical dimension of OT pay: the rules regarding the so-called “white collar exemption,” which excludes from coverage executive, administrative, and professional employees. In particular, we are concerned that the breadth of the “duties tests” of today’s OT rules exempts too many salaried white collar workers who, because of the routine nature of their work, their low pay, and the lack of control they have over their time and tasks, should be covered by the act and entitled to OT pay and other FLSA protections, such as the minimum wage. In addition, we suspect that millions of employees who are not exempt and who are entitled to overtime pay do not know it because the law and regulations are so opaque.

A simple way to address these problems is to raise the salary threshold under which all salaried workers, regardless of their work duties, are covered by the OT provisions. This key FLSA parameter has rarely been updated, nor is it indexed to inflation: The salary threshold has been changed only eight times in 75 years and only once since 1975. Simply adjusting the threshold for inflation since 1975—one of our key recommendations—would raise it to \$970 per week, equivalent to an annual salary of about \$50,440 today.<sup>1</sup>

In the interest of both clarity and meeting the goals of the FLSA to reduce unemployment by spreading workprevent excessive overtime and fairly compensate workers who do work overtime, we propose that the administration issue new regulations that establish the following:

1. An OT threshold salary level commensurate with the status, prestige, and value of executives, administrators, and professionals.
2. An inflation adjustment of the salary level tests going forward.

This change would entitle millions more workers—likely between five and 10 million—to the OT protections in the FLSA.”

<sup>1</sup> All inflation adjustments in this study are made using the CPI-U-RS.

This coverage is consistent with the intentions of the law and it would correct for the falling real value of the salary threshold over many decades. The costs of increased coverage would ultimately be borne by workers as employers set base wages taking expected overtime pay into account. Thus, we do not expect this change to reduce employment or hours worked. To the extent that employers cannot pass higher OT costs on to workers, or if they have to pay for more overtime than expected, the changes would establish an incentive for employers to create new “straight-time” jobs, which would benefit the U.S. economy now and in years to come.

The paper begins with a brief history of the OT provisions and the white collar exemptions, followed by a discussion of the rationale for nonexemption of certain salaried workers. We then discuss our proposal and project its impact on workers and their employers.

### **Principles of OT coverage and how they have been operationalized**

The fundamental idea behind overtime coverage, and the minimum wage, is to maintain a basic norm within our labor market. Under certain market conditions, for example when unemployment is high or workers hold especially low levels of bargaining power, employers might be able to require employees to labor long hours without receiving additional compensation. This was, in fact, the case prior to the passage of the FLSA. Congress decided that this was a market failure based on the asymmetrical bargaining positions of affected workers and employers, and thus enacted the OT rules to create a financial disincentive to subject employees to excessive work hours.

But who should be covered by such protections? President Franklin D. Roosevelt and key members of Congress began with an assumption that every worker falling within Congress’s power to regulate interstate commerce should eventually have a workweek of 40 hours, with the exception of agricultural workers. Additionally, from the first draft of the bill that became the FLSA, the legislation exempted executives as a class that did not need protection, followed in subsequent drafts by administrative employees. They were, after all, the bosses, managers, and administrators who set the rules and policies that governed the workplace.

The FLSA OT regulations designate hourly workers as entitled to OT in virtually all cases because hourly pay is not associated with the prestige or security of the high-level employees Congress originally intended to exempt. In the Department of Labor’s first report on the FLSA’s overtime provisions in 1940, Presiding Officer Harold Stein wrote, “The shortest pay period which can properly be understood to be appropriate for a person employed in an executive capacity is obviously a weekly pay period and hourly paid employees should not be entitled to the exemption.” Hourly-wage workers are also subject to having their wages reduced when they are absent from work for short periods, a condition that does not fit with the workplace reality of executives, administrative employees, and professionals.

The department recognized that rules were needed to prevent employers who sought to avoid time-and-a-half payments from simply designating every salaried employee as an executive or in another exempt category. Thus, the regulations laid out a set of tests intended to prevent such strategic exemptions.

Broadly speaking, there are two tests in these cases: a duties test and a salary test. The former has changed over time, as we explain below. The latter, with which we are most concerned, is straightforward and based on the notion that an employee's salary level is itself an indicator of status, and that workers paid below a threshold salary level should be paid overtime, regardless of their duties.

### **Brief history of white collar OT exemptions and their salary tests**

Executive, administrative, and professional employees, along with “outside salesmen” (salespersons who work outside the office), have always been excluded from both the minimum-wage and overtime protections of the FLSA, but the definitions of each excluded group have always been left to the determination of the Secretary of Labor. Section 13(a)(1) of the FLSA states that “the provisions of sections 6 and 7 shall not apply with respect to (1) any employee employed in a bona fide executive, administrative, or professional capacity... .”

It is noteworthy that the exclusion is preceded by the modifier “bona fide,” a signal that not just anyone with a corresponding title is to be excluded from the act's protections. Congress knew from experience with exemptions under the National Industrial Recovery Act's industrial codes and the President's Reemployment Agreement (which in 1933 began setting maximum work hours and minimum wages) that employers would try to avoid coverage by misclassifying ordinary workers as managers, executives, or other kinds of exempt “bosses.” The National Recovery Administrator had felt compelled to declare that the exemption would be limited “to those who exercise real managerial or executive authority” and warned employers that paying anyone less than \$35 per week created an irrebuttable presumption that the exemption did not apply. (Linder 2004, 268-269)

#### ***The 1940 amending regulations***

Under the first FLSA regulations issued by the Department of Labor in 1938, the definition of exempt executive and administrative employees included duties tests and a salary test of only \$30 a week, \$5 less than the industrial codes had required several years earlier.

When the Roosevelt administration amended its overtime regulations in 1940 and kept the salary test for executives at \$30 per week, it took pains to explain why it had adopted “such a low requirement”(U.S. DOL 1940, 21). According to DOL's report that explained the regulatory changes, the low salary threshold was counterbalanced by the ease of determining the bona fides of executive function based on the fact of supervision and departmental authority, and by the compensating advantages that could be found in the nature of executive employment: the opportunities for promotion, and greater security of tenure.. The FLSA's goal of spreading employment was not especially well served by a narrow exemption because, by its very nature, “the executive's work cannot be shared,” the report said. Finally, there was less need for a high executive salary threshold because, by denying the exemption to any employee who spent more than 20 percent of his time on nonexempt duties, the amended regulation made it easier to identify bona fide executives.

The 1940 regulations also separated the executive and administrative exemptions (which had been merged into a single exemption in the original implementing regulations), provided a less stringent duties test for administrative employees (no specific limit on time spent in non-exempt duties), and required a much higher salary level to satisfy the administrative exemption—\$200 per month, the equivalent of about \$40,000 a year today. The report stated, “It is believed that the employees in the administrative group are so heterogeneous in function that it would present a disproportionately weighty problem in administration to determine what constitutes nonexempt work. However, when this valuable guard against abuse [a strong duties test] is removed, it becomes all the more important to establish a salary requirement for the exemption of administrative employees, and to set the figure therein high enough to prevent abuse” (U.S. DOL 1940, 26). The new threshold of \$200 a month was both 1.67 times higher than the \$30 per week executive salary test and about 3.1 times the minimum wage.

The department further explained its salary level choice by examining the pay of a group of office employees whose duties consisted overwhelmingly of routine clerical work (stenographers, typists and secretaries) and who therefore clearly fell outside of the exemption. The correct salary level would act as a proxy for a more detailed duties test, disqualifying nonexecutive employees by disqualifying employees with lower pay. Because less than 1 percent of the nonexempt employees examined earned more than \$2,400 a year, the department determined that the \$200-per-month requirement was adequate to guard against abuse. A \$35-per-week salary requirement could exempt almost 32 percent of bookkeepers and a \$40-per-week salary requirement could exempt 20 percent; in contrast, a \$50-per-week salary requirement could exempt only 8 percent of bookkeepers, an occupation that was undoubtedly non-exempt.

Most interesting, the department determined that a \$50-per-week requirement would exclude about 50 percent of accountants and auditors, a group “whose work, while related to that of bookkeepers, requires in general far more training, discretion, and independent judgment.” The Roosevelt Labor Department found it appropriate and desirable to set the salary requirement at a level that would deny the exemption to more than half of accountants and auditors, presumably because their pay would reflect their employers’ understanding of their actual duties and responsibilities.

In 1940, the professional exemption’s salary test was set at \$200 a month as well, though the “traditional” professions of theology, law, and medicine had no salary test at all. The Department of Labor’s 1940 report determined that \$200 was the dividing line between subprofessional and fully professional employees, based largely on the federal government’s pay schedules.

The report constituted the first full explanation of the thinking behind the department’s regulatory choices in implementing the FLSA; it likely accurately reflects the understanding and goals of the Roosevelt administration, which proposed the FLSA, including section 13(a)(1), as well as those of Secretary of Labor Frances Perkins, who championed the act.

### ***The 1950 regulations***

The next major change in the regulations came in 1950, following an extensive set of hearings and another presiding officer's report and recommendations. (U.S. DOL 1949). The 1949 report outlining the regulations recommended a somewhat unfortunate innovation, the "special provisos for high salaried executive, administrative, or professional employees" (U.S. DOL 1949, 22). In essence, the regulations adopted two versions of the duties tests for each exemption category; the two versions became known as the long test (virtually identical to the 1940 regulations) and the short test (a new, simpler version with fewer elements to satisfy, accompanied by a much higher salary level requirement). The new short test of executive duties, for example, dropped requirements that the executive exercise hiring and firing authority over at least two employees and dropped the 20 percent limit on nonexempt duties. The salary level was set at \$100 per week, as opposed to \$55 for the long test. Thus, an employer willing to pay a high enough salary could meet the requirements for exemption without having to keep meticulous track of the employee's time to demonstrate that the 20 percent limit had not been surpassed.

The 1950 regulations made a major change in the duties test for administrative employees, adding a requirement (similar to the 1940 requirement for the executive exemption) to what would become known as the long test that no more than 20 percent of the exempt administrative employee's time could be spent on nonexempt duties. As the department's report explained, "An 'administrative' employee whose more important duties do not take up all his time may typically be assigned a routine function, such as keeping one of the ledgers or making up payrolls. While it is entirely reasonable to exempt an employee who performs a small amount of such unrelated clerical or other low-level work, it would be contrary to the purposes of section 7 and 13(a)(1) of the act to extend the exemption to such employees who spend a substantial amount of time in such activities" (U.S. DOL 1949, 59).

Nevertheless, despite an emphasis on limiting nonexempt duties to prevent undeserved exemptions, the regulations set up a higher salary threshold in the short test for the executive and administrative exemptions as a trade-off for eliminating the employer's obligation to enforce and document the time limitation on the exempt employee's performance of nonexempt duties.

### ***Changes from 1959 through 2003***

In 1959, DOL again amended the white collar regulations, following a report and recommendations by Presiding Officer Harry Kantor, written in March 1958. Kantor determined that the salary tests should be set "at about the levels at which no more than about 10 percent of those in the lowest-wage region, or in the smallest-size establishment group, or in the smallest-sized city group, or in the lowest-wage industry of each of the categories would fail to meet the tests." These levels worked out to \$80 per week for executives and \$95 per week for administrative and professional employees. To keep the previous ratio to the long test, Kantor recommended a short-test salary of \$125 per week, or \$862 in 2012 dollars.

The Ford administration updated the salary tests in 1975, choosing not to fully index them to changes in the consumer price index as a concession to concerns of the Council of Economic Advisers about inflation. The last increase until 2004, the 1975 update set the short-test level at

\$250 a week, the long-test level for executive and administrative employees at \$155 a week, and the long-test level for professional employees at \$170 a week.

In 1980, the outgoing Carter administration issued a final rule that would have raised the salary level thresholds substantially, but the rule never took effect and was withdrawn by the Reagan administration. No attempt to amend the regulations was made by the Reagan, Bush, or Clinton administrations. The passage of 29 years without an adjustment made the salary levels obsolete and irrational: By 2003, a full-time minimum-wage worker paid \$5.15 an hour had weekly earnings above the white collar long-test salary thresholds. Annual inflation adjustments would have prevented this from happening.

### **The 2004 OT rules and their legacy of complications**

When the George W. Bush administration finally amended the white collar overtime regulations in 2004, it eliminated the long tests and created tests with a uniformly low and wholly inadequate \$455 a week salary test—barely more than the poverty threshold for a family of four. The 2004 rule also created a new, even more abbreviated version of the short tests with an annualized salary level of \$100,000.

In addition, the 2004 rule made numerous changes to the duties tests for each exemption category. In our view, these changes have led to more confusion and ambiguity, and, even worse, to the unjustified exemption of salaried workers who, under the spirit of the law, should be covered, including, for example, an ill-defined class of “team leaders,” certain embalmers and mortuary employees, and athletic trainers.

Under the current OT rules, salaried workers earning less than \$455 per week automatically qualify for the OT wage premium. As noted throughout, this threshold is not automatically adjusted for inflation. Prior to 2004, the long-test weekly salary levels were \$155 for executive and administrative employees and \$170 for professional employees, and the short-test level was \$250 for all three categories, where it had stood since 1975. Had the \$250 weekly salary level simply kept pace with inflation since 1975, it would have been \$970 in 2012; had the 1959 value of \$125 for administrative or professional employees kept pace with inflation, it would have been \$862 in 2012. Even the relatively low \$455-per-week level set in 2004 would be \$553 in 2012 dollars. In other words, simple inflation adjustments would mean many more workers would be automatically covered today.

We can think of no cogent economic reason not to adjust this salary cap for inflation. Certainly, the spirit of the law is vitiated if a covered worker becomes exempt simply because of nominal earnings gains that have no bearing on the actual purchasing power of her paycheck.

Today, employees earning between \$455 and \$1,923 in weekly salaries (or \$23,660 and \$100,000 in annual pay) are in a separate category under the FLSA OT rules. In order to avoid their being unjustly exempted from coverage, the law requires the application of a complicated duties test. Here, the law has traditionally conceptualized certain aspects of the employee/employer relationship as determining, together, whether the worker should be covered or exempted. For example, does the worker control her own schedule, something hourly workers



typically do not? Does she manage others? If so, is that a small or a large part of her job? Does she control her work flow? Does she make important and independent decisions? What credentials must she have to perform the work?

Making these determinations has always been complicated, and the set of OT “reforms” in 2004 made them more so. One of the most exhaustive analyses of the problems with the duties tests as amended in 2004 is by Fraser et al. (2004). We summarize some of their findings here:

***The rule creates an illusion of preserving the long test but in reality, it replaces it with the old short test while attaching a too-low version of the long test’s salary level.***

“In fact, however, the Department's new rule expands the classes of exempt employees by applying, for the vast majority of workers, a rule matching a variant of the old "easy" duties with the new "low amount" salary. And – presto! – the worker finds a walnut shell with no overtime under it, and the employer is now able to qualify many more employees as exempt than the existing regulatory structure ever contemplated.” (Fraser et al. 2004, 14)

***The abandonment of the 50 percent rule has the potential to exempt workers who perform even a tiny amount of exempt duties.***

The original regulations issued within months of the FLSA’s passage required that an employee, to be an exempt executive, could do “no substantial amount of work of the same nature as that performed by nonexempt employees of the employer.” In its enforcement, the Department of Labor’s Wage and Hour Division treated work in excess of 20 percent of an employee’s time to be “substantial” enough to deny the exemption, and employers generally conceded the fairness of that threshold and the need for a sufficiently definite rule. Thus in 1940, when the Roosevelt administration amended the regulations for the first time, it added a fixed limit on nonexempt work of 20 percent.

A new, high-compensation proviso added to the regulations by the Truman administration in 1950 introduced a more expansive allowance for nonexempt duties, one that did not have an explicit time limit; however, this permissive treatment applied only to relatively highly paid employees, whose annual salaries, adjusted for inflation, would be above \$43,000 today.

Over the years, that looser test became conflated with the determination of the employee’s “primary duty,” which was codified as a 50 percent “rule of thumb”: “[i]n the ordinary case it may be taken as a good rule of thumb that primary duty means the major part, or over 50 percent, of the employee’s time.” In other words, while the 20 percent limit on nonexempt duties did not apply under the short test, it was effectively replaced by a rule that half of the exempt employee’s time had to be spent performing an exempt primary duty.

The 2004 regulations went even further and abandoned any serious notion of time limitations on nonexempt duties, a change Fraser called “a grievous loss.” (Fraser et al. 2004, 14) The new rules defined “primary duty” as the “principal, main, major or most important duty,” thereby essentially eliminating the relatively more objective factor of how the employee actually spends his or her time. Instead of a rule that only exempts an employee if she spends at least half her

time performing an exempt activity, the regulations now state that she may be exempted if the duty the employer considers most important is an exempt duty.

In contrast with an examination of what the worker actually does all day, what her employer deems “most important” is subjective. Imagine, for example, a salaried assistant manager at a clothing store who spends a few hours training new hires in the course of a week. If her employer considers that her most important duty, she could be an exempt executive even though a significant majority of her time is spent assisting customers and running a cash register. And as Fraser and his co-authors point out, the employer’s choice will tend to be biased: “an employer, if called upon to state which of several duties of an employee is primary, will likely choose the one which results in the employee's exemption from the requirements of the law (thereby effectively reducing labor costs).” (Fraser et al. 2004, 14)

### ***Administrative exemptions are too broad***

Under the 2004 rules, office or nonmanual employees whose work is directly related to management policies or general business operations and who exercise any “discretion and independent judgment with respect to matters of significance” can be exempted. Fraser et al. found (and we agree) that this is an arbitrary classification that has lost all connection to the original administrative exemption, which required the employee to be responsible for a function of the organization, if not of subordinate employees, and required him to be engaged in the business operations as a staff person rather than as a production or line employee. When the administrative exemption was first conceived as separate from the executive, in 1940, the department’s report stated, “The term ‘administrative’ can . . . be reserved for persons performing a variety of miscellaneous but important functions in business. This latter group is large in modern industrial practice, and includes typically, such persons as personnel managers, credit managers, buyers, supervisors of machine tools, safety directors, claim agents, auditors, wage-rate analysts, tax experts, and many others.” The Roosevelt/Perkins DOL could not have envisaged automobile claims adjusters, for example, qualifying for the exemption, although employers routinely classify them as “administrative” for purposes of the OT provisions.

As with the executive exemption, the 2004 rules make no reference to the allocation of the exempt administrative worker’s time. For example, an administrative assistant might have the authority to independently decide whether she should refer certain “cold calls” to her supervisor (as does the assistant of one of the authors of this paper). Though this happens only a few times a week, it could be considered grounds for exemption under the current rules. In contrast, the original administrative exemption contemplated exemption only of workers fully engaged in managing a function—personnel managers, credit managers, supervisors of machine tools—but not of someone only occasionally involved in a task deemed important in the sense of exemption from OT coverage.

Another problem with the current duties test is the risk of erroneous exemptions, as, for example, under the “team leader” provision, which assumes managerial responsibilities for team leaders on “major projects” and grants exemptions when those responsibilities are deemed sufficiently important to the employer—a completely subjective determination. Also, the 2004 duties tests

allow exemptions for workers with various credentials or licenses, again with no reference to actual managerial, supervisory, or independent responsibilities.

## **The rationale behind our recommendations**

### ***Principles to apply***

Several important principles emerge from our review of the regulatory history of the white collar exemptions.

Bright-line, objective tests regarding duties are preferable to the ambiguous and ill-defined subjective tests that have replaced them. Explicit limits on the time that exempt employees may spend performing nonexempt duties would provide far more guidance than vague tests based on the employer's subjective feelings about the importance of one duty compared with another. In the first years after passage of the FLSA, when the law and its purposes were freshest in the minds of the Department of Labor officials who had advocated for and helped draft the act, the regulations reflected an understanding that an exempt employee should do no substantial amount of nonexempt work, and should in no case devote more than 20 percent of her time to such duties.

Clarity and simplicity are aids to administration and to compliance by employers. For example, if employees cannot understand whether they exercise sufficient independence or judgment in their work, or make decisions about sufficiently important matters, to be exempt, they cannot demand their rights. The more employees and employers can rely on objective tests, the better.

Although it would be reasonable to restore the original requirement that an exempt executive may not perform a significant amount of work of the same nature as that performed by nonexempt employees, and in no case may such work involve more than 20 percent of an exempt employee's time, for simplicity's sake we instead recommend focusing on salary levels.

### ***Updating the salary level: Why use 1975 updated to today?***

As noted, we recommend an updated salary threshold of \$250 per week (the 1975 level), adjusted for inflation since that year. Because inflation, as measured by the CPI-U-RS, has been almost 290 percent since 1975, the adjusted level is \$970 per week. While we readily admit that any level will involve some arbitrariness, in this section we explain why we think the indexed 1975 level makes sense.

First, however, we stress that the salary level has become increasingly important over the years as a bright-line indicator of which employees are clearly exempt and which are not. However difficult it might be to judge whether an employee's primary duty is truly that of an executive or exempt administrative employee, an employee and her employer can easily determine the level of the employee's pay. The salary level is the clearest, most easily applied test of exemption.

It is also true, as the department declared in 1940, that “the final and most effective check on the validity of the claim for exemption is the payment of a salary commensurate with the importance supposedly accorded the duties in question.” Or, as the department said in its 1958 hearing report and recommendations, “[i]t is an index of the status that sets off the bona fide executive from the working squad leader, and distinguishes the clerk or subprofessional from one who is performing administrative or professional work.”

To be commensurate with the status and prestige expected of exempt managers and executives, the salary level should be well above the median wage, the wage paid to the typical production, nonsupervisory employee. When the Ford administration raised the salary threshold in 1975, it was 1.57 times the median wage. The median wage today is \$16.70 per hour. Were we to update that same ratio—1.57 times the median wage—the short-test threshold would be \$26.22 an hour, around \$1,050 on a weekly basis and \$54,536 on an annual basis, suggesting that our recommended \$970 weekly threshold is on the low side.

The salary level for exemption must also be, according to the 1949 report, “considerably higher” than the level of newly hired “college graduates just starting on their working careers.” As the report explained, “[t]hese are the persons taking subprofessional and training positions leading eventually to employment in a bona fide professional or administrative capacity.” Entry level wages and salaries for college graduates in 2011 were \$21.68 per hour for men and \$18.80 per hour for women. Using the Department of Labor’s reasoning in 1949, we determine that the salary level for exemption must be “considerably higher” than \$800 a week or \$41,600 a year, a view that is again consistent with our updated 1975 threshold. The 1950 rule set the level 25 percent above the college entry-level wage; applying that same ratio today would yield a salary of \$1,000 a week.

The relationship between the original salary-level test threshold and the minimum wage was 2.73-to-1. When the administrative test was established as a separate category of exemption and given its own salary level, its ratio to the minimum wage was 3.1-to-1. And in 1975, before the 29-year period when the department failed to increase the salary levels, the short-test salary level was set at a ratio of approximately 3-to-1, close to our choice of the 1975 test adjusted for inflation.

CPS earnings data for 2012 show that only about 20 percent of full-time, salaried workers have weekly earnings below the current salary threshold of \$455 per week, while just under two-thirds earn less than \$970. Is the higher threshold, covering about 40 percent more of salaried workers, more consistent with the goals of the policy than the current threshold? Clearly this is a challenging question given both data limitations and the qualitative aspects of some of the duties tests. But the following evidence supports our choice:

- BLS publishes data (most recently from 2010) of supervisory workers by occupation and median weekly earnings (U.S. BLS National Compensation Survey). For management occupations, the BLS breaks out four levels of supervisory responsibilities, and the median weekly earnings range from \$1,520 to \$3,995. Thus, by this metric, our threshold

is well below a level associated with supervisory, and presumably exempt, duties.

- Looking at the full list of median earnings for supervisory jobs in management, only “team leaders” who were preschool education administrators, food service managers, property managers, and lodging managers earned below our threshold (and note that for some of these occupations, the mean, as opposed to median, earnings were above \$970 per week).
- BLS grading of occupations by leveling factors (scores given to each occupation based on its demands for skill, knowledge, and responsibilities) find the hourly wage of about \$24 (970/40) to be consistently below level 7 (out of 15), also consistent with nonsupervisory responsibilities.

In light of these lessons, we recommend that the administration establish the following:

1. A salary test set at the inflation-adjusted level of the short test in 1975—\$970 per week in 2012 dollars.

Below this level, salaried employees would not be exempt, whatever their duties might be, and would be guaranteed overtime pay for work in excess of 40 hours a week.

2. Inflation adjustment of the salary-level test going forward.

### **The impact of our recommendations to raise the salary threshold**

This section briefly summarizes the likely job-market effects of extending OT coverage to all of the estimated 20 million salaried workers whose full-time weekly earnings are between \$455 and \$970. The two key points on which we focus are a) the number of affected workers, and b) the incidence of the OT time-and-a-half provision (who pays for the extra salary?).

First, not all of the workers in this range are currently exempt from OT; since some workers in this salary range are already covered, 20 million is an unrealistic upper bound on the number of salaried workers who would gain coverage under our proposed change. Unfortunately, there are no data sets that would allow us to determine how many nonexempt workers are in that range. However, since our data (CPS Earnings Files) do contain detailed occupation codes, we can derive a very rough estimate by excluding workers whose occupational tasks would give them nonexempt status under today’s duties tests.

The table below shows our analysis of just a few occupations with duties characteristic of covered, nonexempt jobs. In each case, significant numbers and shares of workers earn between the current and proposed thresholds, meaning they are not automatically covered under current law but would be under our proposed salary-test level.

<i>Occupation</i>	\$455– \$970	>\$970
Bookkeeping, accounting, and auditing clerks	212,468	282,607
Secretaries and administrative assistants	570,180	838,246
Claims adjusters, appraisers, examiners, and investigator	90,308	172,870

Source: 2012 CPS Earnings Files

For example, there are approximately 212,000 salaried bookkeepers in this range. A look at their tasks, as offered by O-NET—the online site devoted to detailed enumeration of occupational tasks—suggests that many of these workers already are, or at least should be, nonexempt.

Still, even were we to net out the workers under our new, higher threshold such that the number newly covered would be well below 20 million, our reform would significantly increase the number of covered workers, and thus possibly increase labor costs. All else equal, would this lead to fewer hours of work demanded by employers?

Not necessarily. The determinant issue in cases of wage mandates (or taxes) is one of incidence. Who bears the cost of the mandate? In the case of OT regulations, labor economists employ two basic models with quite different incidence implications.

One model, which we call the base-wage-adjustment, or BWA, model, posits that the incidence falls on the workers. Since employers have a rough sense of how much they want to pay for a given worker, including any time-and-a-half overtime costs, they will adjust their “straight-time,” or base wage, offer down to a level that will make the total hourly wage, including OT costs, equal to their intended rate of pay.<sup>2</sup>

Under this model, wage offers adjust to hold labor costs constant. Assuming the employer’s estimate of the number of OT hours is roughly correct, the BWA model predicts little change to labor costs and thus employment. An exception would be for workers with earnings near the minimum wage, since employers cannot adjust wages below the minimum.<sup>3</sup>

The other model simply assumes no adjustment (NA), maintaining that OT rules increase the marginal cost of an hour of labor by covered workers beyond what employers planned when they hired them. This would lead to a decline in their OT hours, though it could also lead to an increase in hiring of additional workers to complete the necessary work without invoking the OT premium. In fact, one motive for the original rule was that by increasing the relative cost of OT labor, employers would have an incentive to increase hiring rather than pay time-and-a-half. To

<sup>2</sup> If  $w$  equals the hourly wage the employer plans to pay for a given worker and  $w_1$  is the base wage offer, including OT costs,  $TOT$  equals total weekly hours, and  $OT$  equals overtime hours (so  $TOT=40+OT$ ), then  $w=OT/TOT*1.5*w_1+40/TOT*w_1$ . So, an employer who views a new worker as worth \$10/hr (so  $w=10$ ), and expects her to work 10 hours of OT per week, would offer her a base wage ( $w_1$ ) of \$9.09.

<sup>3</sup> While research by both Trejo (1991) and Barkume (2008) find some evidence that the probability of OT hours is lower at wage levels near the minimum, as predicted by the BWA model, the latter study finds the likelihood of overtime to be insignificant in states with higher minimum wages relative to the federal level, the opposite of the BWA prediction (because states with higher minimum wages have less room for downward wage adjustment than states with lower minimums).

the extent that the BWA model holds, however, there is no increase in labor costs from OT (more precisely, from expected OT) and thus no impact on hours or hiring.

Barkume (2008) finds evidence for both effects, though consistent with the conventional assumption by labor economists about the incidence of mandates (or payroll taxes), his estimates suggest that the BWA model dominates the NA model.

Mapping these findings onto our suggested reform is tricky in at least one regard. Since lifting the salary threshold would presumably cover workers who are now exempt, employers would have to lower their base wages to make the adjustments suggested by the BWA model. That is much easier to do with new wage offers than with existing workers (nominal wages are rarely lowered), so perhaps the more standard NA would apply initially. Over time, BWA dynamics could take hold if employers provide fewer and smaller raises than they would otherwise provide.

Of course, we recognize that the BWA model works against some of the reform rationales we raised above. If OT is designed to provide a compensating wage differential to workers working more hours than what is generally considered as full-time work, then a downward adjustment that partially erases that differential is obviously less beneficial to workers. However, this is really only a problem in cases where employers use more OT hours than they expected when setting the base wage, since it is only in that case that the worker would earn more in total salary. If OT hours worked are roughly what was expected (or less than expected), the worker is better off by dint of the regulation.

## **Conclusion**

Our review of the history of OT regulations dating back to their inception in the FLSA of 1938 leads us to conclude that confusing and ambiguous duties tests in tandem with the lack of proper adjustment of salary tests have left too many salaried workers uncovered by time-and-a-half regulations. We recommend raising the salary threshold to \$970 per week, which is the 1975 threshold updated for price growth, and strongly urge that this salary be adjusted for inflation going forward.

Why the 1975 threshold? While any threshold will have an arbitrary element, the 1975 threshold is consistent with both the qualitative goals articulated by both the FLSA and officials of the DOL and the central goal of the salary test: to ensure that those whose pay did not reflect the status and prestige of exempt workers were covered by the OT protections.

This change would entitle millions more workers—likely between five and 10 million—to the OT protections in the FLSA.

While opponents of such changes historically have argued that they distorts the labor market by increasing the marginal costs of labor, this line of argument erroneously assumes that the incidence falls on the employer, not the worker. Labor economists consistently assume otherwise—that the incidence falls on the worker—which in this case means that the wage offer reflects expected overtime hours, as shown in footnote two. As such, there is no change at the

margin from expanding coverage, at least once the pay of newly covered, existing workers is allowed to adjust.

More comprehensive reforms of the OT regulations would improve or repeal most of the 2004 changes in the duties tests, including by, for example, removing language that exempts team leaders, removing athletic trainers from the exempt professional occupations, and restoring the primary duty test to measure the duty an employee performs during most of her work time, while eliminating the notion that one can be performing management duties while performing menial duties.

However, while we urge the Department of Labor to undertake such comprehensive reforms, we recognize that the reforms will be complex and time consuming. Raising and indexing the salary threshold is a simpler reform that could be accomplished in the very near term.

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# Family and Medical Leave Insurance

## A Basic Standard for Today's Workforce

We need to establish a national family and medical leave insurance program that addresses the realities of our current workforce.

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Center for American Progress

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## Introduction and summary

President Franklin D. Roosevelt signed the Fair Labor Standards Act, or FLSA, into law on June 25, 1938, outlawing child labor, establishing the minimum wage, and putting limits on the number of hours employees could work without additional compensation.<sup>1</sup> President Roosevelt's secretary of labor, Frances Perkins, crafted the legislation, incorporating policies that states had been implementing in the decades before and drawing on what she had learned from her many years in social work. Seventy-five years later, this law is still the foundation of our nation's basic labor standards, but the workforce has changed markedly. As we celebrate the strength of the FLSA, we also need to think about how to update basic labor standards for a workforce in which most workers are also family caregivers.

In 1938, most workers had a family member who was a full-time, stay-at-home caregiver.<sup>2</sup> That is not the case for today's workers. Women are now half of all workers on U.S. payrolls, and mothers are now breadwinners or co-breadwinners in the majority of families with children.<sup>3</sup> Most workers are responsible for the care of either children or older family members, which means that there are times when they need to be away from their jobs without fear of reprisal.<sup>4</sup>

We have made some progress adapting to the new realities of work and care. This year, we will celebrate the 21st anniversary of the Family and Medical Leave Act, or FMLA, a law developed to address the challenges of today's workforce. The FMLA provides workers with up to 12 weeks of unpaid, job-protected leave to recover from an illness, care for a newborn or ill family member, or for certain military purposes.<sup>5</sup> The FMLA was an important step forward, as it addresses the new realities of who works and who provides care, building on the basic labor protections of the FLSA and creating a new standard that fits the modern workforce. But it does not go far enough. Too many workers cannot make use of it, either because they are ineligible or because they cannot afford to take leave.

The next step to ensure that basic labor standards are accessible to all is to implement a national family and medical leave insurance program that would be available to all workers. Family and medical leave insurance—also known as paid family and medical leave or paid leave—provides

wage replacement to workers who take temporary leave to recover from a serious illness or care for an ill family member or a newborn, newly adopted, or foster child.<sup>6</sup> Just as former Secretary of Labor Perkins did when she helped write the FLSA, we have state-level models we can look to for guidance on what works. Three states have implemented family leave insurance—California, New Jersey, and Rhode Island.<sup>7</sup> These states added the program to a long-standing statewide temporary disability insurance program.<sup>8</sup> In 2007, Washington was the first state without a statewide temporary disability insurance program to pass paid leave legislation, but there is not yet a plan to actually implement the program.<sup>9</sup>

Family and medical leave insurance would fill an important gap for workers. Even though new parents and family caregivers typically are employed outside the home, most do not have access to paid, job-protected leave when they need time away from work to meet caregiving responsibilities.<sup>10</sup> This not only creates stress for families and is potentially unhealthy for children, the elderly, and the sick, but it also poses significant costs to our economy. Women who have paid leave are more likely to return to their employers after taking leave, cutting down on firms' turnover costs. More generally, workers who have access to policies that allow them to balance their care responsibilities are more likely to stay employed, adding to the nation's productivity and allowing them to provide for their families today and save for retirement tomorrow.<sup>11</sup>

The Family and Medical Insurance Leave, or FAMILY, Act of 2013, introduced by Rep. Rosa DeLauro (D-CT) and Sen. Kirsten Gillibrand (D-NY), would establish a national family and medical leave insurance program, expanding access to paid leave.<sup>12</sup> This program would relieve the financial burden of taking unpaid time off for many families, particularly low-income families, who are significantly less likely to have access to paid leave through their employers.

This paper outlines how the workforce has changed since the passage of the FLSA and what kinds of basic labor standards we now need. We discuss why the current standards set by the FLSA and the FMLA are good but not good enough. We also explain how we can learn from state experiences, as well as the experiences of other countries, to implement a national family and medical leave insurance program such as the one that the FAMILY Act proposes.

## A changing workforce

Since the Fair Labor Standards Act passed into law in 1938, there has been a shift in how U.S. workers care for their families. Fewer workers are living in families with one breadwinner and one stay-at-home parent who can provide care when necessary. The majority of today's U.S. workers hold down a paying job and also have at least some caregiving responsibilities.<sup>13</sup>

Managers can no longer look at their staff and assume that most of its members have someone at home who has the capacity to deal with all of life's big and little emergencies.

The transformation of who provides care at home stems in large part from the rise of women, especially mothers, in the workplace. Between 1970 and 2000, the share of women in the labor force steadily increased, from 43.3 percent to 59.9 percent, about where it remains today.<sup>14</sup> Over the same time period, the share of married mothers in the labor force rose from 39.7 percent to 70.6 percent.<sup>15</sup> Today, most women work full time—that is, 35 hours or more per week. Before the Great Recession in 2007, the share of women who worked 35 hours or more per week was 75.3 percent.<sup>16</sup>

With the majority of women now working outside the home, most families do not have a stay-at-home parent to provide care for children, the sick, or the elderly. Seventy-one percent of children live in a family with either two working parents or a single parent.<sup>17</sup> At the same time, there has been an increase in working single-parent households, in which a worker may not have the ability to share family care with a partner. The share of single mothers in the labor force grew from 52 percent in 1980 to 73.9 percent in 2000, about where it remains today.<sup>18</sup> The share of families with children that were headed by a single parent was 26.1 percent in 2010.<sup>19</sup> As the only breadwinners and caregivers in their households, single parents can have a harder time maintaining employment in the absence of policies to help them balance work and care.

Increasingly, workers are also caring for aging parents, often requiring a leave from work. The share of the population ages 65 and older was 12.4 percent in 2000; this share is expected to grow to 19 percent by 2030.<sup>20</sup> The percentage of adult children providing care for a parent has tripled over the past 15 years.<sup>21</sup> In 2008, almost half the workforce—42 percent—reported that

they had provided elder care over the past five years.<sup>22</sup> Among workers who were employed at some time while caregiving, one in five, or 20 percent, reported that they took a leave of absence from work in order to address caregiving responsibilities.<sup>23</sup>

Because of the reality that women and mothers work outside the home, family and medical leave is not only a women's issue but a family issue as well. Men no longer exclusively bear the full burden of earning the majority of the family's finances, and they are now more likely to have—and want—to take time off of work to attend to their families. Men and women are now left to negotiate the challenges of work-family conflict, including who will go to work late in order to take an elderly family member to the doctor and who will stay home with a sick child. Given this, it comes as no surprise that the majority of men in dual-earner couples today report experiencing work-family conflict.<sup>24</sup> New polling from the Pew Research Center, for example, finds that half of all working parents—both men and women—report that it is difficult to balance career and family responsibilities. The polling finds “no significant gap in attitudes between mothers and fathers.”<sup>25</sup>

The movement of women into the labor force has not only transformed how women spend their days, but it also has had a direct effect on family incomes. Upon entering the labor force, mothers are increasingly the family breadwinners—those bringing home all of the family's earnings or at least as much as their partners—or co-breadwinners—those bringing home at least one-quarter of their families' earnings.<sup>26</sup> The share of mothers who were breadwinners or co-breadwinners rose from under one-third—27.7 percent—to two-thirds—63.9 percent—between 1967 and 2010.<sup>27</sup>

Surveys show that people want policymakers to address the growing divide between workplace rules and family realities. In a survey of registered voters, for example, the Work Family Strategy Council found that supermajorities of voters support a national paid leave program funded through payroll contributions.<sup>28</sup> In a January 2013 poll, 80 percent of female voters and 70 percent of male voters favored a paid leave program.<sup>29</sup> Furthermore, there is strong bipartisan support for family and medical leave insurance. In the same poll, 85 percent of Democrats and 67 percent of Republicans favored a paid leave program.<sup>30</sup>

## **A basic labor standard: The Fair Labor Standards Act**

It is not as if we have no policies that create a boundary between work and life. The Fair Labor Standards Act, passed on June 25, 1938, established the minimum-wage, overtime, record-keeping, and child labor standards.<sup>31</sup> It provides basic labor protections to address low pay and overwork, two issues as important today as they were in the 1930s. Under the FLSA, currently covered workers are entitled to a minimum wage, which is now \$7.25 per hour.<sup>32</sup> In addition, covered workers are paid 150 percent of their usual hourly wage for any hours worked above a regular 40-hour workweek. In order to monitor these provisions, employers keep records on employee wages, hours, and other items.<sup>33</sup>

More than 130 million workers—about 93 percent of employed workers—were covered by the FLSA’s minimum-wage, child labor, and record-keeping provisions in 2009.<sup>34</sup> When the legislation was passed in 1938, these provisions covered a smaller share of the workforce, and the act was expanded in later years to cover most workers.<sup>35</sup> The Obama administration extended minimum-wage coverage and overtime provisions to home health and personal care workers in September 2013. Effective January 1, 2015, this rule will extend FLSA protections to about 2 million direct care workers.<sup>36</sup> Most recently, President Obama signed a presidential memorandum instructing an update of FLSA overtime protection regulations to ensure more workers are paid for overtime work.<sup>37</sup>

But some workers covered by the FLSA are exempt from the act’s overtime and/or minimum-wage protections. Exempt workers include executive, administrative, professional, outside sales, and certain computer employees. To qualify for exemption, workers must be paid on a salary basis at \$455 or more per week, as well as meet certain tests regarding their job duties.<sup>38</sup> Furthermore, certain employees making more than \$100,000 per year are also exempt from FLSA protections.<sup>39</sup> Today, only 12 percent of salaried workers fall below the threshold that ensures overtime and minimum-wage protections.<sup>40</sup> Workers who are exempt from overtime and minimum-wage provisions often work unpredictable or long hours.

## Meeting the needs of early 20th-century workers

The Fair Labor Standards Act was put in place to address the needs of workers in the 1930s. At the time, some of the most pressing issues facing workers were extremely long hours, children forced to toil in factories, and the lack of a wage floor. By 1913, the majority of states had established 14 as the minimum age for factory work, and Massachusetts had passed the first state minimum-wage law for women.<sup>41</sup> In addition, there was a growing demand for shorter working hours in the late 19th century and early 20th century. In the 1840s, most skilled trade workers won 10-hour workdays.<sup>42</sup>

The crafters of the FLSA drew on this experience when writing the legislation, as well as on the laws that states had been putting in place to curtail workers'—specifically women's and children's—long hours.<sup>43</sup> By the early decades of the 20th century, almost all states had passed laws prohibiting child labor, a number of states had mandated 10-hour days for all workers, and 16 states had enacted minimum-wage laws for women.<sup>44</sup> Furthermore, prior to the passage of the FLSA, the eight-hour day and 40-cent minimum wage had become accepted practices, set in motion by the decisions of the 1917–1918 National War Labor Board—which had been set up to mitigate labor disputes in war supply industries—and labor movement initiatives to establish an eight-hour day.<sup>45</sup>

### A standard in need of an upgrade

The FLSA, along with other basic labor protections such as the Equal Pay Act and the Social Security Act, were our nation's first work-family policies. The FLSA set standards that make it possible for a worker to head home after eight hours, giving them the opportunity to do things such as care for their families. The law does not, however, provide sufficient protections to manage the dual demands of the workplace and home. The legislation was put in place at a time when work-family conflict looked much different than it does today. Seventy-five years ago, policymakers could assume that women were primarily caregivers and men were primarily breadwinners. Even if that was not the case in every family, it was an aspirational goal for many and a cultural norm.



Although the workforce changed by the 1980s, the FLSA has not yet been amended to address these changes. Most amendments to the act merely have increased the minimum wage.<sup>46</sup> (see Table 1) While the share of workers covered under the FLSA expanded from the 1940s to the 1980s, the share of workers exempt from overtime protections increased in 2004, when the Bush administration expanded the definition of “executive, administrative, and professional” workers who are exempt under the FLSA’s overtime protection.<sup>47</sup> Researchers Ross Eisenbrey and Jared Bernstein estimated that this redefinition would make 8 million more workers ineligible for overtime pay.<sup>48</sup> Since 2004, the FLSA’s overtime and minimum-wage protections have been extended to 2 million direct care workers; this rule is effective January 1, 2015.<sup>49</sup> In addition, President Obama signed a presidential memorandum in March instructing the secretary of labor to update FLSA overtime protection regulations.<sup>50</sup> Updating these regulations will ensure more workers are paid overtime for a hard day’s work.

**Table 1: Legislative evolution of the FLSA**

Date	Action	Substance
October 1938	FLSA becomes effective	
1947	Portal-to-Portal Act	<p>Created a practical definition of hours worked</p> <p>Allowed parties to settle a worker’s minimum-wage or overtime claim</p> <p>Established a two-year statute of limitations in which a worker could file a claim</p>
1949	FLSA amendments	<p>Continued the requirement that employment in excess of 40 hours in a workweek be compensated at a rate not less than 1.5 times the regular rate, except for employees who are specifically exempted</p> <p>Defined “regular rate” as including specific forms of payment accepted</p> <p>Redefined “produced”</p> <p>Raised the minimum wage from 40 cents to 75 cents per hour</p> <p>Expanded the definition of oppressive child labor</p> <p>Created new exemptions for special worker classes</p>
1955	FLSA amendments	<p>Increased the minimum wage from 75 cents to \$1 per hour</p>
1961	FLSA amendments	<p>Added enterprise coverage, which covers employees of businesses and organizations that have an annual dollar volume of sales of at least \$500,000 or are hospitals, businesses providing medical or nursing care, schools, or government agencies</p> <p>Increased the minimum wage from \$1 to \$1.25 in stages</p> <p>Defined “wage”</p> <p>Granted authority in Section 17 for employees to sue for back wages</p>
1966	FLSA amendments	<p>Expanded coverage to include workers employed in any enterprise with annual sales of at least \$250,000 and employees of all businesses engaged in construction, repair, and laundering and cleaning services, as well as employees of hospitals, elementary and secondary schools, and institutions of higher education</p> <p>Extended the minimum wage to some farmworkers</p> <p>Increased minimum wage to \$1.60 in stages</p> <p>State and local government employees covered for the first time</p> <p>Inserted provisions on how to determine the wage of tipped employees</p>
1972	Amendments to Higher Education Act of 1965	<p>Extended FLSA coverage to preschools</p>
1974	FLSA amendments	<p>Expanded coverage to include other state and local employees</p> <p>Expanded coverage to domestic workers</p> <p>Increased the minimum wage to \$2.30 in stages</p>
1976	National League of Cities v. Usery	<p>Minimum-wage and overtime provisions of the FLSA are no longer applicable to traditional activities of state and local governments</p>

<p><b>1977</b> FLSA amendments</p>	<p>Increased the minimum wage in yearly increments to \$3.35</p> <p>Made changes to the tip credit system</p> <p>Increased the average daily volume of sales for retail trade and service enterprises from \$250,000 to \$362,500</p> <p>Permitted special waiver applications for 10- and 11-year-old agricultural hand harvesters of short-season crops</p> <p>Expanded the law to include employee rights to sue for being retaliated against in the case that they have filed a complaint or cooperated in an investigation</p> <p>Eliminated the overtime exemption for employees in hotels, motels, and restaurants</p>
<p><b>1985</b> FLSA amendments</p>	<p>Granted compensatory time off in lieu of overtime pay to state and local government employees</p>
<p><b>1986</b> FLSA amendments</p>	<p>Section 14(c) was amended to remove the separation of workshops and work activities centers and eliminate any statutory minimum wage for persons with disabilities in certificated employment</p> <p>Allowed clients to ask for a review of wage rates by an administrative law judge that is subject to review by the Department of Labor</p>
<p><b>1989</b> FLSA amendments</p>	<p>Increased the minimum wage to \$4.25 in stages</p> <p>Increased average dollar value of enterprise sales to at least \$500,000</p> <p>Eliminated the distinction between retail and nonretail</p> <p>Determined that construction and laundry and dry cleaning are no longer named enterprises</p> <p>Made further changes to the tip credit system</p> <p>Created a youth minimum wage, or a "training wage," which was equal to 85 percent of the minimum wage and expired in 1993</p> <p>Established an overtime exception for time spent by employees in remedial education</p> <p>Created civil money penalties for willful or repeated violations of the minimum-wage or overtime-pay requirements of the law</p>
<p><b>1996</b> FLSA amendments</p>	<p>Allowed employers to pay a youth minimum wage of not less than \$4.25 per hour to employees who are under 20 years of age during the first 90 consecutive calendar days after initial employment</p> <p>Increased the minimum wage to \$5.15 in stages</p> <p>Froze the tipped-employee minimum wage at \$2.13, as long as the addition of tip means the employee makes more than the minimum wage</p> <p>Determined that all government employees are covered by minimum-wage protections</p>
<p><b>2004</b> FLSA amendments</p>	<p>Required that employees who are paid less than \$455 per year be paid overtime for all hours worked over 40 per week</p> <p>Required that certain employees who are paid more than \$100,000 per year are exempt from overtime requirements</p>
<p><b>2007</b> Fair Minimum Wage and Tax Relief Act</p>	<p>Increased the minimum wage to \$7.25 in stages</p>

Sources: U.S. Department of Labor, "Wage and Hour Division History," available at <http://www.dol.gov/whd/about/history/whdhist.htm> (last accessed July 2013); Gerald Mayer, Benjamin Collins, and David H. Bradley, "The Fair Labor Standards Act (FLSA): An Overview" (Washington: Congressional Research Service, 2013), available at <http://www.fas.org/spp/crs/misc/R42713.pdf>; Fair Labor Standards Act, ch. 8 (1949) (current version at 29 U.S.C. § 201–219, available at <http://www.gpo.gov/fdsys/granule/USCODE-2011-title29/USCODE-2011-title29-chap8/content-detail.html>); Wage and Hour Division, *Fact Sheet #14: Coverage Under the Fair Labor Standards Act (FLSA)* (U.S. Department of Labor, 2009), available at <http://www.dol.gov/whd/regs/compliance/whdfs14.htm>; U.S. Department of Labor, "History of Changes to the Minimum Wage Law," available at <http://www.dol.gov/whd/minwage/coverage.htm> (last accessed December 2013); Wage and Hour Division, *Fact Sheet #77A: Prohibiting Retaliation Under the Fair Labor Standards Act (FLSA)* (U.S. Department of Labor, 2011), available at <http://www.dol.gov/whd/regs/compliance/whdfs77a.htm>; William G. Whittaker, "Treatment of Workers with Disabilities Under Section 14(c) of the Fair Labor Standards Act" (Washington: Congressional Research Service, 2005), available at [http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1211&context=key\\_workplace](http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1211&context=key_workplace); Wage and Hour Division, *Fact Sheet #32: Youth Minimum Wage - Fair Labor Standards Act* (U.S. Department of Labor, 2008), available at <http://www.dol.gov/whd/regs/compliance/whdfs32.htm>; U.S. Department of Labor, "29 CFR Part 541: Defining and Delimiting the Exemptions for Executive, Administrative, Professional, Outside Sales and Computer Employees; Final Rule," *Federal Register* 69 (79) (2004), available at <http://www.dol.gov/whd/regs/compliance/fairpay/preamble.pdf>.

## **Basic labor standards 2.0: The Family and Medical Leave Act**

Even before the ink was dry on the Fair Labor Standards Act, policymakers knew that workers needed a basic labor standard to protect them when they were ill or their family members needed care, either due to illness or a new child coming into the family. Secretary of Labor Perkins started plans around 1943 to implement a social insurance scheme to cover workers when they had an illness, experienced nonindustrial accidents, or needed maternity care or hospitalization.<sup>51</sup> Yet it would take half a century to make progress at the federal level to help workers with these issues.

The first step was the Pregnancy Discrimination Act of 1978, which protects some new mothers from being fired and may provide them with access to some benefits, depending on their employers' policies. It amends Title VII of the Civil Rights Act to make it clear that sex discrimination includes discrimination on the basis of pregnancy, childbirth, or related medical conditions. But the Pregnancy Discrimination Act excludes employers with fewer than 15 employees, meaning that 15 percent of the workforce is automatically excluded.<sup>52</sup>

While this was a step forward, it did not establish a right to job-protected leave or other benefits specifically for pregnant workers. Even workers covered by the Pregnancy Discrimination Act may lack the protection they need to take time away to give birth and recover from it. A number of federal courts have interpreted the Pregnancy Discrimination Act to mean that employers that do not allow workers any leave or extremely limited leave to recover from an illness or a disability are under no obligation to provide leave to pregnant workers<sup>53</sup> or accommodate pregnancy-related health issues. Instead, the employer can legally fire the pregnant worker.<sup>54</sup> This means that many workers suffering from temporary, pregnancy-related disabilities are without any protection in the workforce.

The Family and Medical Leave Act was the first national legislation to provide workers with the right to take job-protected unpaid leave.<sup>55</sup> Passed and implemented in 1993, the FMLA allows eligible workers to take up to 12 weeks of unpaid, job-protected leave to recover from a serious illness; care for an ill family member; care for a newborn, newly adopted, or foster child; or for

military purposes.<sup>56</sup> The FMLA was an accomplishment because it was the first federal legislation to give workers access to time off to provide care.

The FMLA was signed into law eight years after its first introduction in Congress. President George H.W. Bush vetoed it twice, and President Bill Clinton made it law in February 1993.<sup>57</sup> Similar to the FLSA, the FMLA built on policies that developed in the states and followed in the footsteps of the 34 states that had already implemented some type of family and medical leave legislation.<sup>58</sup> Twenty-three of these states had laws that covered both private- and public-sector workers, and 11 had laws that only covered state employees.<sup>59</sup> Twelve states, as well as the District of Columbia, had laws in place prior to the FMLA that required firms to offer job-protected maternity leave.<sup>60</sup>

Also similar to the FLSA, the FMLA has been amended over time to help certain groups of workers better manage family responsibilities. (see Table 2) The FMLA was amended in 2008 to provide two special military leave entitlements: 26 weeks of military caregiver leave and 12 weeks of qualifying exigency leave that arose from a military member's active duty.<sup>61</sup> These military leave provisions were further clarified and expanded in 2010.<sup>62</sup> The FMLA was also amended in 2009 to establish special FMLA eligibility requirements for flight crews, given the unique scheduling of the airline industry.<sup>63</sup> Most recently, as a result of the Defense of Marriage Act being declared unconstitutional in July 2013, same-sex couples married in 17 states and the District of Columbia are now entitled to more than 1,000 previously denied benefits and protections, including the FMLA.<sup>64</sup>

**Table 2: Legislative evolution of the FMLA**

Date	Action	Substance
February 1993	FMLA signed into law	
2008	FMLA amendments	<p>The National Defense Authorization Act for Fiscal Year 2008 created two types of military family leave: qualifying exigency leave and military caregiver leave.</p> <p>Qualifying exigency leave “may be taken for any qualifying exigency arising out of the fact that a covered military member is on active duty or call to active duty status.” The Department of Labor permits eligible employees who are family members of a covered military member to take FMLA leave for a broad list of activities that are considered qualifying exigencies, including attending military-sponsored functions, making appropriate financial and legal arrangements, and arranging for alternative child care.</p> <p>Military caregiver leave may be taken by an eligible employee to care for a covered service member with a serious injury or illness.</p>
2009	FMLA amendments	The Airline Flight Crew Technical Corrections Act changed the way FMLA hours of work are calculated for airline flight crews, based on the unique scheduling requirements of the airline industry.
2010	FMLA amendments	<p>The National Defense Authorization Act for Fiscal Year 2010 modified and expanded the FMLA’s military caregiver leave and qualifying exigency leave provisions.</p> <p>The act “extended military caregiver leave to eligible employees whose family members are recent veterans with serious injuries or illnesses, and expanded the definition of a serious injury or illness to include serious injuries or illnesses that result from preexisting conditions.”</p> <p>The act also “expanded qualifying exigency leave to eligible employees with family members serving in the Regular Armed Forces, and added a requirement that for all qualifying exigency leave the military member must be deployed to a foreign country.”</p>

Sources: Gerald Mayer, “The Family and Medical Leave Act (FMLA): An Overview” (Washington: Congressional Research Service, 2012), available at <http://www.fas.org/sgp/crs/misc/R42758.pdf>; U.S. Department of Labor, “Military Family Leave Provisions of the FMLA (Family and Medical Leave Act): Frequently Asked Questions and Answers” (2008), available at <http://www.dol.gov/whd/fmla/finalrule/MilitaryFAQs.pdf>; U.S. Department of Labor, “Notice of Proposed Rulemaking to Implement Statutory Amendments to the Family and Medical Leave Act,” available at <http://www.dol.gov/whd/fmla/NPRM/index.htm> (last accessed December 2013).

## Meeting the needs of modern families

Since its passage, U.S. workers have used the FMLA more than 100 million times to help balance the demands of the workplace and home.<sup>65</sup> In addition to helping address the dual demands of the workplace and family care, the FMLA also recognizes that workers need time off from work to recover from unexpected medical emergencies.<sup>66</sup>

Since its introduction, advocates have viewed the FMLA as a standard that addresses workers’ needs. There is not, however, a record of discussion in congressional hearings about whether it should be an amendment to the FLSA.<sup>67</sup> During the aforementioned congressional hearings, however, policy experts repeatedly testified that the FMLA addressed a major gap in legislation and was consistent with other standards already in place, including the FLSA, the Social Security

Act, and the Occupational Safety and Health Act.<sup>68</sup> During a 1987 Senate hearing on the FMLA, Cheryle Mitvalsky, a member of the Association of Junior Leagues board of directors said:

The history of fair labor standards is clear. Pressing social problems can be alleviated by a Federal standard. ... Like the Social Security Act and the child labor laws, parental and medical leave legislation would be consistent with a long and established history of labor relations.<sup>69</sup>

The FMLA passed with bipartisan support, as both Democrats and Republicans agreed that family and medical leave is important for families. Just before the bill passed in 1993, Sen. Christopher Dodd (D-CT) and Sen. Edward Kennedy (D-MA) stated during a hearing that the FMLA “established a basic standard of decency.”<sup>70</sup> Sen. Christopher Bond (R-MO) said that “as a society, we need to make family obligations something we encourage rather than discourage.”<sup>71</sup> Secretary of Labor Robert Reich agreed with the senators’ statements, saying:

From the standpoint of minimal decency, minimal fairness, and from the standpoint of good business sense, pushing and prodding and encouraging our companies and our work force, pushing them into the 21st century, this bill is critical. ... The FMLA will signal a turning point in the history of American work force policy under the Clinton administration.<sup>72</sup>

### **A good protection, but more to do**

Although the FMLA helps workers balance work and care, not all eligible workers can afford to take unpaid time off. According to a 2012 survey conducted by the U.S. Department of Labor and Abt Associates, 46 percent of workers who needed leave but did not take it said that they could not afford to take it without pay.<sup>73</sup> Furthermore, about one-third of workers who took partial paid or unpaid leave cut their leave short due to lack of pay.<sup>74</sup> Today, the majority of families receive most of their income from employment, meaning that any disruption in employment could have significant impacts on finances.<sup>75</sup> In 2001, 25 percent of dual-income

families and 13 percent of single-parent families who filed for bankruptcy did so after missing two or more weeks of work due to their own illness or the illness of a family member.<sup>76</sup>

The fact that the FMLA is unpaid makes it that much harder for men to take time away from work, as they continue to bring home a significant portion of family earnings. Researchers have found that when family and medical leave is paid, men are more likely to take it in order to care for a new child or sick family member. In *Time Off with Baby: The Case for Paid Care Leave*—a 2012 book by Edward Zigler, Susan Muenchow, and Christopher J. Ruhm—the authors show that the share of men taking paid leave in California has steadily increased since the start of the program in 2004.<sup>77</sup> However, men in California are still more likely than women to take shorter lengths of leave.<sup>78</sup>

Furthermore, while the FMLA provides a needed protection for workers, eligibility requirements follow a traditional model of employment, which leaves out a large percentage of the workforce. Eligibility for the FMLA is tied to a worker's current employer. Employees must have worked for their current employer for at least 12 months, though not necessarily consecutively; provided at least 1,250 hours of service for their current employer in the year preceding the leave; and work for a covered employer, a private employer with 50 or more employees in a 75-mile radius, a state or local government, or a public or local education agency.<sup>79</sup> These rules left 4 in 10 workers—41 percent—ineligible for leave in 2012.<sup>80</sup>

The exclusion of small firms leaves more than one-third of workers categorically ineligible to take job-protected leave.<sup>81</sup> But even workers with larger employers often do not qualify due to the FMLA's minimum job-tenure and hour requirements, which are tied to working with a single employer. This leaves out many workers who need access to leave. Among African American workers ages 18 to 25 with a child under age 2 at home—exactly the kind of worker who needs access to job-protected leave—48 percent had been at their jobs for less than a full year in 2006, making them categorically ineligible for leave on the job-tenure criteria alone.<sup>82</sup> Part-time workers, many of whom work part time for caregiving or child care reasons, take longer to meet the hours-of-service requirement, even if they have more than one job.



Tying eligibility to a single employer is incompatible with the composition of today's workforce and puts younger parents and caregivers at a disadvantage.<sup>83</sup> Today, workers are much more likely to switch jobs throughout their career rather than work for one employer and make their way up the ladder in the company. According to the Bureau of Labor Statistics, workers ages 18 to 48 held 11.3 jobs on average between 1978 and 2010, changing jobs about once every two years.<sup>84</sup> Furthermore, younger workers at the start of their careers are more likely to switch jobs. Requiring employees to work for their current employers for at least 12 months may result in workers staying in unsuitable jobs to keep their FMLA eligibility.

### **Basic labor standards 3.0: Family and medical leave insurance**

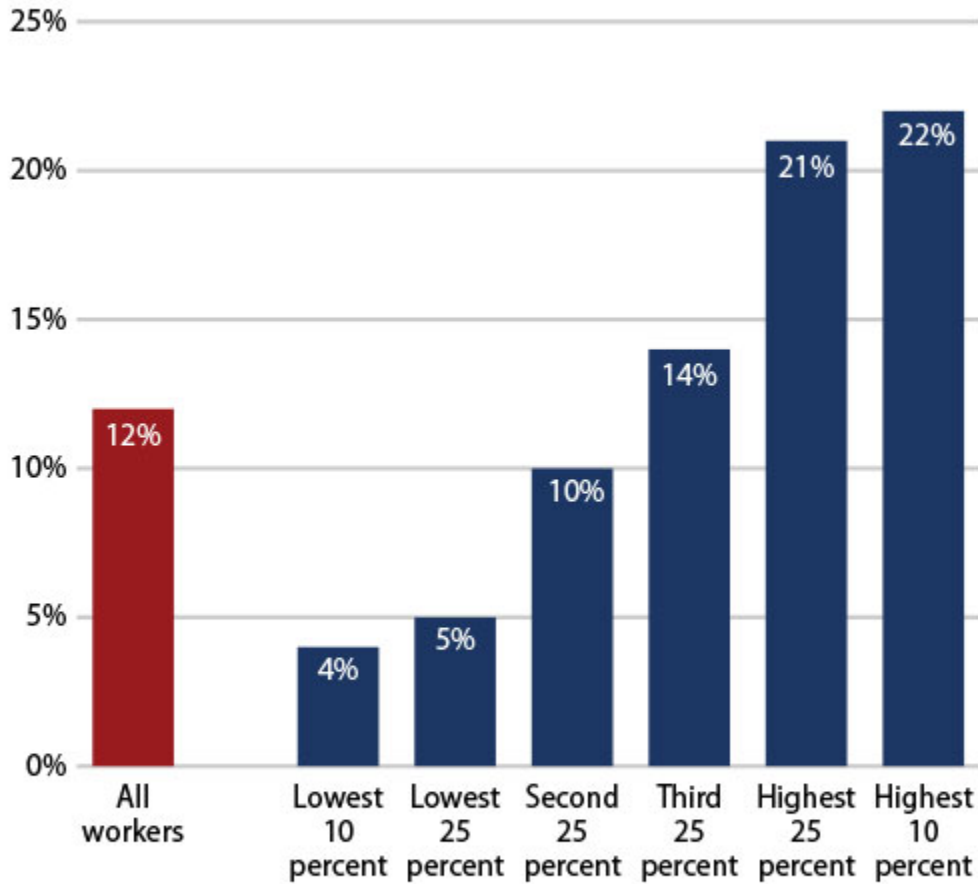
The lack of paid family and medical leave insurance creates challenges for families and is the new policy frontier. Too many workers lack the protections of the Family and Medical Leave Act, and too many cannot make use of unpaid leave because they cannot afford it. The reality is that workers need to take time off from work for caregiving regardless of whether they are covered by the FMLA or can afford it. Family and medical leave insurance, also known as paid family and medical leave, would provide a critical protection to America's workforce by providing wage replacement to workers who take leave. It would help families be less financially vulnerable as they balance work, illness, and family care.

Most workers not only hold down a full-time job but, at some point in their career, they also take care of either young children or ailing family members. But even though the majority of U.S. workers will need to take leave some time during their careers, employers have not stepped in to provide this benefit, or other work-family benefits.<sup>85</sup> (see Figures 1-5) The National Compensation Survey, which is a survey the Bureau of Labor Statistics conducts of employers nationwide, reports that only 12 percent of workers received paid family and medical leave in 2013.<sup>86</sup> (Figure 1) One in four private-sector workers have access to employer-provided temporary disability insurance, which can be used to recover from a serious illness or pregnancy but cannot be used to care for a sick family member or bond with a new child.<sup>87</sup> (See Figure 2)

Employers often view paid family and medical leave as a perk for higher-paid workers, and too often, low- and middle-wage workers, young workers, less-educated workers, and workers of color do not have access to paid family and medical leave. Workers whose wages are in the lowest 25 percent of average wages are approximately four times less likely to have access to paid family and medical leave than those in the highest 25 percent.<sup>88</sup> (see Figure 1)

FIGURE 1

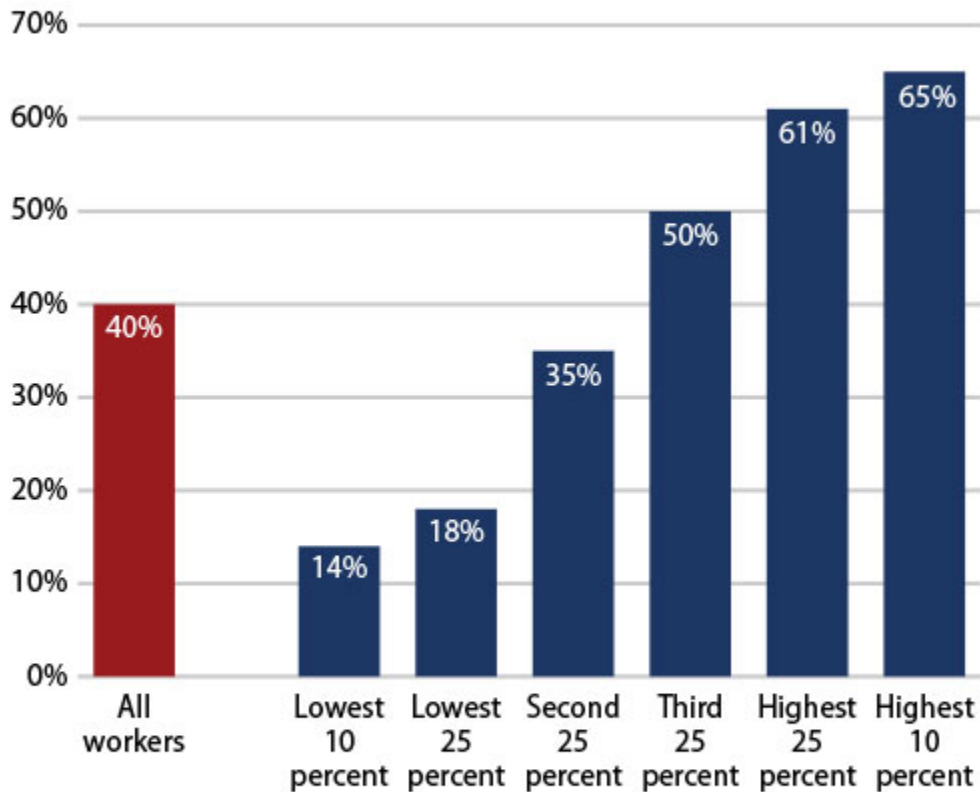
### Share of workers with paid family leave through their employer, by average wage



Notes: Includes all private industry workers. The categories above are based on the average wage for each occupation surveyed. In 2013, the states of California and New Jersey required paid family leave coverage. Source: Bureau of Labor Statistics, *Table 32. Leave benefits: Access, private industry workers, National Compensation Survey, March 2013* (U.S. Department of Labor, 2013), available at <http://www.bls.gov/ncs/ebs/benefits/2013/ownership/private/table21a.pdf>.

**FIGURE 2**

### Share of workers with short-term disability insurance through their employer, by average wage

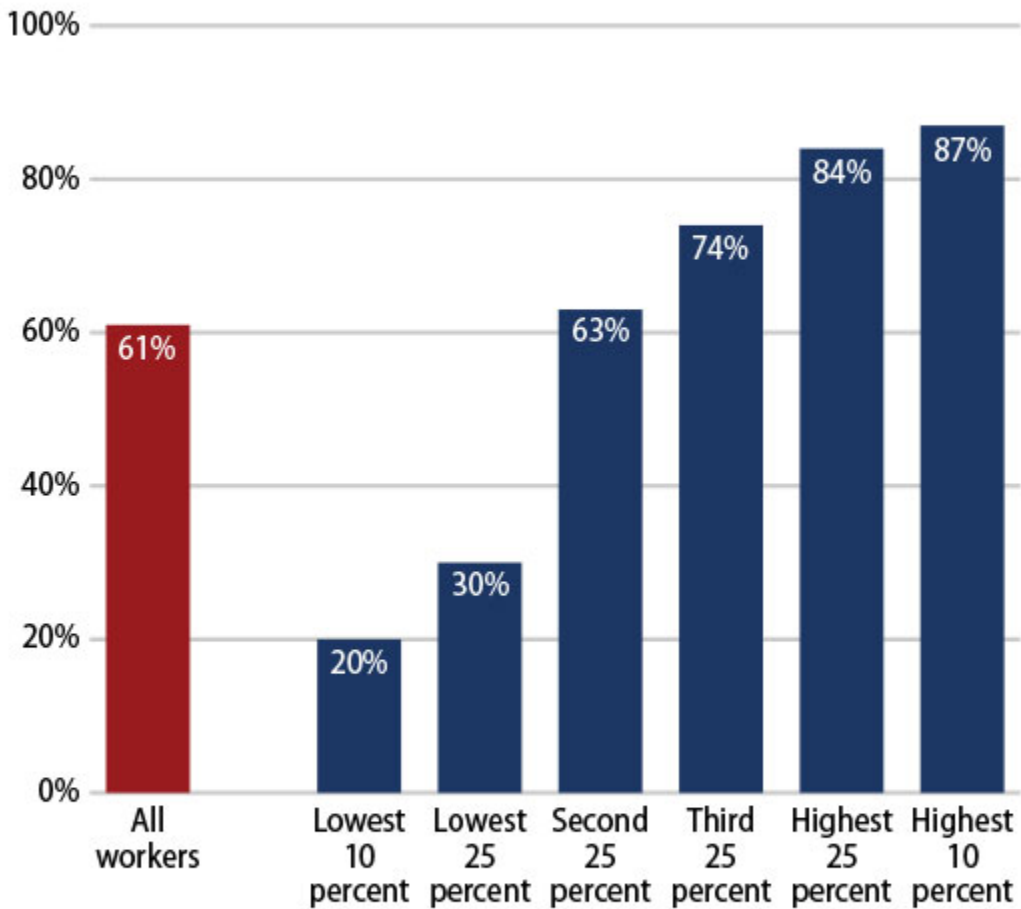


Notes: Includes all private industry workers. The categories above are based on the average wage for each occupation surveyed. The states of California, Rhode Island, Hawaii, New Jersey, and New York require temporary disability insurance, or TDI, coverage.

Source: Bureau of Labor Statistics, *Table 16. Insurance benefits: Access, participation, and take-up rates, private industry workers, National Compensation Survey, March 2013* (U.S. Department of Labor, 2013), available at <http://www.bls.gov/ncs/ebs/benefits/2013/ownership/private/table12a.pdf>.

**FIGURE 3**

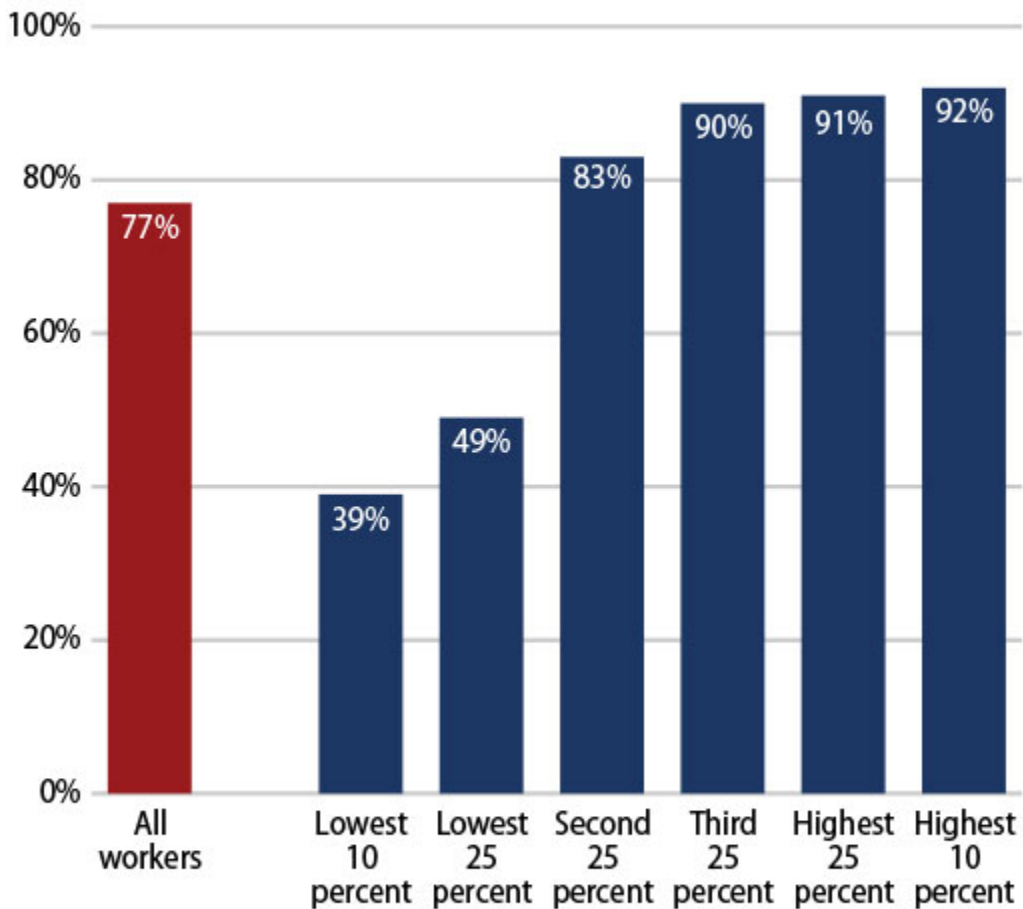
### Share of workers with paid sick days through their employer, by average wage



Notes: Includes all private industry workers. The categories above are based on the average wage for each occupation surveyed. The state of Connecticut, the District of Columbia, San Francisco, and Seattle require paid sick days coverage.

Source: Bureau of Labor Statistics, *Table 32. Leave benefits: Access, private industry workers, National Compensation Survey, March 2013* (U.S. Department of Labor, 2013), available at <http://www.bls.gov/ncs/ebs/benefits/2013/ownership/private/table21a.pdf>.

**FIGURE 4**  
**Share of workers with paid vacation through their employer, by average wage**

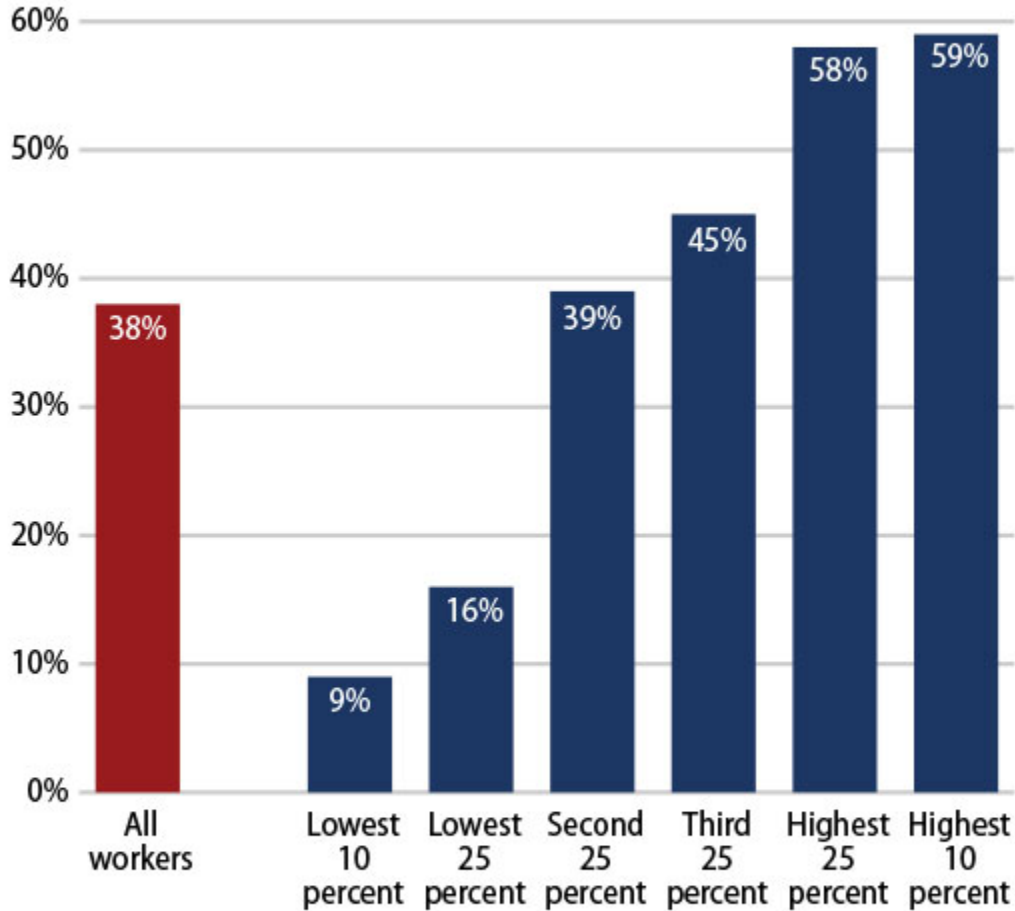


Notes: Includes all private industry workers. The categories above are based on the average wage for each occupation surveyed.

Source: Bureau of Labor Statistics, *Table 32. Leave benefits: Access, private industry workers, National Compensation Survey, March 2013* (U.S. Department of Labor, 2013), available at <http://www.bls.gov/ncs/ebs/benefits/2013/ownership/private/table21a.pdf>.

FIGURE 5

## Share of workers with paid personal leave through their employer, by average wage



Notes: Includes all private industry workers. The categories above are based on the average wage for each occupation surveyed.

Source: Bureau of Labor Statistics, *Table 32. Leave benefits: Access, private industry workers, National Compensation Survey, March 2013* (U.S. Department of Labor, 2013), available at <http://www.bls.gov/ncs/ebs/benefits/2013/ownership/private/table21a.pdf>.

### The United States can look to state programs and the experiences of other countries

There are a variety of models that policymakers can turn to in order to establish an effective national family leave insurance program. There are three active state-level family and medical leave insurance programs and five statewide disability insurance programs.<sup>89</sup> Also, all other developed nations provide some type of paid parental leave.<sup>90</sup>

Over the past decade, four states have passed legislation to provide workers with family leave insurance.<sup>91</sup> Three of these states have implemented family leave programs—California in 2004, New Jersey in 2009, and Rhode Island in 2014.<sup>92</sup> The fourth state, Washington, passed a parental leave law in 2007 but has since delayed it due to lack of funding mechanisms.<sup>93</sup>

Family leave insurance programs in California, New Jersey, and Rhode Island are extended provisions of the states' temporary disability insurance programs. California's and New Jersey's programs offer eligible workers up to six weeks in a 12-month period to bond with a newborn or care for an ill family member.<sup>94</sup> California's family leave program currently offers eligible workers wage replacement at 55 percent of their usual weekly earnings, up to a cap of \$1,075 per week;<sup>95</sup> the program is funded by an employee-paid payroll tax.<sup>96</sup> And New Jersey's family leave insurance program offers eligible workers wage replacement at two-thirds of their average weekly wage, with a maximum of \$595 per week.<sup>97</sup> The program is fully funded by employees,<sup>98</sup> and its temporary disability insurance program is funded by both employee and employer contributions, as are Hawaii's and New York's.<sup>99</sup> As of this year, Rhode Island provides workers with four weeks of temporary caregiving leave. The program is employee funded with benefits capped at \$752 per week.<sup>100</sup>

We can also look abroad to see how other countries have implemented paid family and medical leave. The United States is the only developed country that does not include paid leave as part of a package of basic labor protections.<sup>101</sup> All EU member states provide some form of paid parental leave, though the specific leave lengths and wage replacement amounts vary by country.<sup>102</sup> At a minimum, member countries must provide four months of unpaid parental leave for each parent for the birth or adoption of a child under Directive 2010/18/EU.<sup>103</sup> This directive provides a uniform unpaid job-protected leave standard for all member-state workers.<sup>104</sup>

Other English-speaking countries have all implemented some form of paid family and medical leave. In Canada, for example, paid maternity and parental leave is offered through the country's employment insurance program. Eligible workers outside the province of Quebec receive 15 weeks of paid maternity leave and 35 weeks of paid parental leave to share between parents.<sup>105</sup>



As of 2006, Quebec's Parental Insurance Policy is responsible for providing maternity, paternity, parental, and adoption leave benefits to Quebec workers.<sup>106</sup> Working Quebecois mothers are entitled to 15 to 18 weeks of paid maternity leave, while working fathers are entitled to 3 to 5 weeks of paid paternity leave. In addition, working parents are able to share 25 to 32 weeks of paid parental leave.<sup>107</sup> Regardless of province, Canadian workers are eligible for up to six weeks of paid caregiving leave, known as compassionate care benefits. Workers can use compassionate care benefits, which are also offered through employment insurance, when providing care to seriously ill family members who have a significant risk of death in the next six months.<sup>108</sup>

In Australia, the National Employment Standards established unpaid parental leave and paid personal and caregiver leave, the latter of which allows time to recover from an illness or care for an immediate family member.<sup>109</sup> As of 2011, Australian parents are eligible for up to 18 weeks of paid parental leave at the national minimum-wage level—currently a little less than \$15.00 per hour in U.S. dollars—to care for a newborn or newly adopted child.<sup>110</sup>

The United Kingdom provides maternity, paternity, and parental leave to its workers to help them manage caregiving responsibilities. Working mothers can receive statutory maternity pay for 39 weeks and take maternity leave for up to 52 weeks.<sup>111</sup> Working fathers are eligible for one to two weeks of paid ordinary paternity leave and up to 26 weeks of paid additional paternity leave.<sup>112</sup> Parents can also take up to 18 weeks of unpaid parental leave.<sup>113</sup> Starting in April 2015, parents will be able to share up to 50 weeks of existing maternity leave and return to their jobs afterward.<sup>114</sup>

## **A proposal for federal family and medical leave insurance**

Too often, people who need family or medical leave face financial hardship or the impossibility of taking unpaid leave. A new family and medical leave insurance program would make leave affordable and build on the FMLA's best practices, tying leave to the worker—rather than tying it to the child or family, as many European countries do. Based on what we have learned from experiences at the state level and in other countries—as well as what we already know about how to craft an effective program—the following sections outline the key components of a federal family and medical leave insurance program.

### **A realistic definition of need and a fair definition of family**

A family and medical leave insurance program should build on the Family and Medical Leave Act's definitions of the circumstances for family and medical leave. It should provide eligible employees with at least 12 weeks, or 60 workdays, of paid family and medical leave within a one-year period.<sup>115</sup> If a program were to build on the FMLA's qualifying leave criteria, employees would be able to take leave for their own serious illness, including pregnancy or childbirth; to care for an ill family member, including a child, parent, or spouse; to care for a newborn, newly adopted, or foster child; to care for an injured family member who is in the military; or to deal with exigencies that arise from a service member's deployment.<sup>116</sup>

Given the realities of how families live today, however, any new family and medical leave insurance program should broaden the definition of family to include domestic partners, siblings, nieces and nephews, aunts and uncles, and grandchildren and grandparents. Ten states and the District of Columbia have already done this to some extent.<sup>117</sup> The need for time off to provide care for extended kin may be even more important to workers in low-wage jobs, who are currently the least likely to get this kind of benefit and more likely to rely on extended kin to help with care.<sup>118</sup> Furthermore, as of this writing, 17 states and the District of Columbia recognize same-sex marriage. Therefore, excluding domestic partners is inconsistent with emerging views on what constitutes a family.<sup>119</sup>

Family leave insurance also should not discriminate against men. Tying leave to the worker allows and encourages men to take up leave.<sup>120</sup> While the United States is the only developed-nation member of the Organisation for Economic Co-operation and Development, or OECD, that does not provide paid maternity leave, it does offer the same amount of leave to both parents, provided they both work and are eligible for the FMLA. In other OECD nations, a portion of paid leave is provided as blocks of leave that can be taken by either parent in whatever combination they see fit.<sup>121</sup>

### Inclusivity

All workers should have access to family and medical leave insurance. From a fairness standpoint, eligibility should not be based on a workers' current employer but rather on their overall work history. If workers have paid into the system, both in terms of payroll tax contributions and time, they should be able to take leave as needed.

To make sure this is the case, policymakers can draw on what we have learned from states that have family leave insurance and from other federal benefit programs. As described above, the FMLA eligibility criteria disproportionately limit the FMLA eligibility of low-wage workers, women workers, workers of color, and younger workers. But states and other federal programs have done a better job of crafting more-inclusive programs.

One option is to tie eligibility to lifetime work history rather than current employer and job tenure, as is done in the programs administered by the Social Security Administration. For example, the eligibility criteria for Social Security Disability Insurance is more comprehensive and equitable than the FMLA since the amount of time employed in the workforce, rather than tenure with a specific employer, determines Social Security Disability Insurance eligibility. The amount of money an individual has paid into the fund in all working years, not just over the past 12 to 18 months, determines the level of wage replacement.<sup>122</sup> The number of credits necessary—and the time period in which they must have been earned—in order to be fully insured by Social Security Disability Insurance depends on a worker's age.<sup>123</sup>

### Include workers in firms of all sizes

Workers pay into family and medical leave over time, and benefit payments are possible through the pooling of risk and resources. A nonuniversal social insurance program would lead to unfair outcomes for too many workers. Exempting small businesses from a national paid family and medical leave program would mean that workers could pay into the system for decades, only to take a job with a noncovered employer and no longer be eligible for the benefits for which they have already paid. This is why the five states with temporary disability insurance programs, as well as the state paid family and medical leave programs, extend eligibility to all employees as long as they have a sufficient wage and earnings history, regardless of employer size. Arguments can be made as to why smaller employers should not have to offer job-protected leave, but they do not make sense for a system that workers are paying into over the course of their working lives.

The self-employed should also be included in any family and medical leave insurance program, particularly because our economy has large numbers of self-employed workers, independent contractors, and contingent workers.<sup>124</sup> These workers would be given access to this benefit when they are unable to work, regardless of their current employers. In California and New Jersey, self-employed workers are eligible for family leave and can opt in to coverage.<sup>125</sup>

### Benefits generous enough to have a meaningful effect

The amount of wage replacement for paid leave should be at a level that supports low-wage workers and promotes gender equity in providing care. In terms of benefit levels, federal policymakers could follow the lead of New Jersey, which provides a benefit that is equal to two-thirds of a worker's average weekly wages.<sup>126</sup> This level of wage replacement can help support low-wage workers who need to take leave. In order to keep costs under control and make sure that funds are well targeted, federal policymakers may decide to cap the benefit level. Here, we can learn from California, where benefits are currently capped at \$1,075 per week.<sup>127</sup>

In addition, providing wage replacement for paid leave would likely create incentives for men and women to share care responsibilities. Despite the changing structure of working families in

recent decades, men's earnings are still critical to families' financial security, which makes it difficult for them to take unpaid leave from work. Family leave insurance increases the likelihood that men will take leave—and take it for longer durations.<sup>128</sup>

### Consideration of an already-existing infrastructure

There are a number of ways to administer family and medical leave insurance, and the choice of how to do it will affect the program's design and implementation. Key criteria are:

- The agency must have access to all workers' employment and earnings records.
- The agency must be able to determine medical eligibility.
- The agency must be able to deliver payment in a timely manner.

State unemployment insurance agencies and the Social Security Administration, or SSA, already do similar tasks, and there are advantages and disadvantages to implementing a national family and medical leave insurance program through either of them. Both have offices in every state, so either could administer a federal program, and both could make eligibility determinations based on employment or earnings, as both track that data. But if we base our choice on the measures outlined above, it is evident that the SSA would be the better fit in terms of policy.

The SSA already has in place many of the elements that a family and medical leave insurance system would need. It already administers benefits to retirees, disabled workers, and family survivors. In addition, its system already tracks every U.S. worker's employment and earnings history and has a credit system to determine an individual's benefit eligibility.<sup>129</sup> The SSA has a system compatible with the proposed family and medical leave insurance program, making it relatively easy to create a new office and new trust fund within the agency. The federal leave program would be within an agency that has a culture of providing people much-needed benefits and experience with making medical determinations.

Administering family and medical leave insurance through the SSA would also face hurdles, not least of which would be the political shock of believing that we can add a new federal social insurance program to the basket of those we already have, something we have not done in more than 40 years. Once we push through this issue, however, the other hurdles will be easier to

overcome. The leave program could look to other Social Security programs to learn how to make medical determinations, process claims, and distribute benefits quickly and efficiently.<sup>130</sup>

Adding family and medical leave insurance to the unemployment insurance, or UI, system would face a series of legislative hurdles. There are also serious policy concerns. First, the UI system is implemented at the state level, meaning that there is not just one UI system; there are 50.

Administering paid leave under the UI system would require expanding the current federal-state partnership in which the U.S. Department of Labor oversees the administration of state UI agencies. All 50 states would need to grant their respective agencies the authority to administer the UI program and partner with the federal government.<sup>131</sup> This would be a heavy political lift, especially given our nation's recent experience with such a partnership in the form of Medicaid expansion under the Affordable Care Act.<sup>132</sup> States that refuse to grant authority would forfeit the federal funds for program operations and benefits, and state residents would not have access to a critical program even though they contributed to it.<sup>133</sup> If we administer family and medical leave insurance through SSA, the primary legislative hurdle is at the federal level.

Second, the state UI systems are not equipped to handle medical claims, including some qualifying events for paid leave.<sup>134</sup> Handling medical claims would require a ramp-up in the capacity of local unemployment insurance offices. SSA has experience with medical determinations for disability and would be well-positioned to learn from that process to set up the new process required for family and medical leave insurance.

Third, if we followed the UI model, state UI agencies would be responsible for determining eligibility and paying out benefits. This would, in all likelihood, result in disparities in access to paid leave. Currently, state UI eligibility requirements result in a disparity in the share of UI recipients by state that ranges from less than 20 percent to almost 70 percent.<sup>135</sup> Part-time, low-wage, and seasonal workers are disproportionately ineligible for unemployment insurance.<sup>136</sup> This kind of inequality poses a serious problem for a paid family and medical leave program, as the workers currently most likely to have access to paid leave are those at the very top of the wage distribution, and those low-wage, part-time, and seasonal workers who struggle with care issues and their own health are least likely to receive it. These workers are also among those likely to

lose a job due to health or family care issues; this only exacerbates their inability to climb up the wage ladder and increases the likelihood that they will have to rely on aid programs such as welfare.<sup>137</sup> If the program is established within the SSA, policymakers can work toward ensuring adequate benefits for all workers.

Fourth, the structure of UI financing is completely wrong for family and medical leave insurance. Currently, state UI systems are funded by state unemployment trust funds, which are financed by taxes levied on employers and are typically “experience rated.”<sup>138</sup> UI is insurance for job loss due to an employer decision; the system, therefore, is set up to discourage employers from laying off workers and, thus, discourage them from abusing UI. As part of this, when an employee makes a UI claim, their former employer’s tax rate rises—that is, the tax rate is based on the UI system’s experience with that employer. This is not an effective incentive within a family and medical leave insurance program. Employers’ paid leave contributions should not be experience rated. If employers’ tax rates rise when their employees take leave, it could potentially lead employers to discourage them from using paid family and medical leave. Clearly, the rules can be changed, but that would require every state to debate and pass them. Adding a new way to collect UI taxes and encouraging a new culture of benefit access may pose significant challenges.

Nevertheless, there has been experimentation with the UI route. In 2000, the Clinton administration implemented Birth and Adoption Unemployment Compensation, which allowed states the flexibility to implement paid parental leave within their UI systems.<sup>139</sup> The Bush administration, however, rescinded the rule in 2003 before any state took advantage of it.<sup>140</sup> Legal challenges stated that the new rule was inconsistent with federal Unemployment Compensation law and conflicted with interpretation of the Federal Unemployment Tax Act.<sup>141</sup> There were also concerns about lower state UI fund balances due to the recession in the early 2000s. According to the U.S. Department of Labor, the only effect of the regulation’s removal was that states could no longer use their UI funds to pay for paid parental leave.<sup>142</sup>

Regardless of where a new program is housed, it will need a new standalone office. It also makes sense to set up a trust fund specifically for family and medical leave, as policymakers did in

California, New Jersey, and Rhode Island. We estimate that fully funding a program based on the parameters above would require a new payroll tax of about 0.4 percent per worker; this could be split between employers and employees.

### **The Family and Medical Insurance Leave Act**

The Family and Medical Insurance Leave Act of 2013—also known as the FAMILY Act—proposes a family and medical leave insurance program that could provide paid leave for nearly every U.S. worker.<sup>143</sup> Introduced by Rep. Rosa DeLauro (D-CT) and Sen. Kirsten Gillibrand (D-NY), the FAMILY Act incorporates the key components of a national paid leave program outlined in the previous section.

The FAMILY Act would relieve the financial burden of taking unpaid time off for many families. The proposed leave program would provide benefits equal to 66 percent of an individual's typical monthly wages—such as New Jersey's program does—up to a capped amount.<sup>144</sup> These benefits would likely incentivize men and women to share care responsibilities. Despite women's growing role as family breadwinners, men continue to contribute a significant amount to families' earnings, making it difficult for them to take unpaid leave from work. Evidence from California suggests that when family leave is paid, men are more likely to take leave.<sup>145</sup>

The legislation ties family and medical leave to the worker, rather than to the child or family. Each eligible worker is entitled to 12 weeks—or 60 days—of paid leave.<sup>146</sup> Just as they can under the FMLA, workers have the ability to take leave for their own serious illness, including pregnancy or childbirth; to care for an ill family member; to care for a newborn, newly adopted, or foster child; to care for an injured family member who is in the military; or to deal with exigencies arising from a service member's deployment. The FAMILY Act would expand the definition of family to include domestic partners.<sup>147</sup>

The proposed national family and medical leave program would cover all workers who qualify for Social Security benefits. Unlike under the FMLA, workers in all companies, regardless of size, would be eligible for family and medical leave insurance under the FAMILY Act.



Expanding eligibility would especially benefit young, part-time, low-wage workers, who are often ineligible for unpaid leave under the FMLA.<sup>148</sup>

The FAMILY Act proposes administering the paid leave program through a new Office of Paid Family and Medical Leave within the SSA. The program would tap into existing infrastructure and build on the universality of Social Security. Almost every worker pays into the system and, therefore, is eligible for benefits. Family and medical leave insurance benefits would be paid through a newly created separate insurance fund, which would be funded by employee and employer payroll contributions—each two-tenths of 1 percent of a worker’s wages or 2 cents for every \$10 in wages.<sup>149</sup>

## Likely effects of family and medical leave insurance<sup>150</sup>

Based on the experience of California and New Jersey, as well as other countries, we know a good deal about the potential effects of paid family and medical leave on workers, their families, employers, communities, and the economy.

### Expand the labor force and help grow the economy

Research indicates that family and medical leave insurance programs provide workers with flexible options to remain in the labor force while taking care of a loved one or recovering from an illness or pregnancy. “Female Labor Supply: Why is the US Falling Behind?”, a 2013 study by Cornell University economists Francine D. Blau and Lawrence M. Kahn, finds that one reason why the United States fell from having the sixth-highest female labor-force participation rate among 22 OECD countries in 1990 to having the 17th-highest rate in 2010 was because it failed to keep up with other nations and adopt family-friendly policies such as parental leave.<sup>151</sup> Along these lines, Christopher J. Ruhm and Jackqueline L. Teague found that paid parental leave policies are associated with higher employment-to-population ratios and decreased unemployment for all workers.<sup>152</sup> Likewise, the authors found that moderate leaves—10 weeks to 25 weeks—are associated with higher labor-force participation rates for women.<sup>153</sup>

Although workers may take leave from work in the short term, family and medical leave insurance helps workers stay in the labor force, increasing labor-force participation and growing the economy in the long term. In his study of paid parental leave in European countries, Ruhm finds that leave legislation increases the female employment-to-population ratio by 3 percent to 4 percent—and even more for women of childbearing age.<sup>154</sup> Similarly, a study of paid maternity leave in OECD countries notes that an added week of paid maternity leave raises labor-force participation rates of young women ages 20 to 34 an average of 0.6 percentage points to 0.75 percentage points.<sup>155</sup> The positive effect of paid leave on labor-force participation seems to be greater with shorter to moderate leaves. A recent study, for example, found that the expansion of paid leave in Norway from a moderate leave of 18 weeks to a longer leave of 35 weeks had no effect on labor-force participation.<sup>156</sup>

## Help reduce employee turnover and limit employment disruptions for workers

Results from Eileen Appelbaum and Ruth Milkman’s 2009 and 2010 surveys of California employees and employers provide evidence of this: Workers with low-quality jobs who used family leave insurance while on leave were more likely to return to their pre-leave employer—82.7 percent—than those with low-quality jobs who did not—73 percent.<sup>157</sup>

Family leave insurance in California has reduced employee turnover and employer turnover costs. In 2009 and 2010, 93 percent of employers surveyed by Appelbaum and Milkman reported that family leave insurance had “a positive effect” or “no noticeable effect” on employee turnover.<sup>158</sup> Furthermore, economists Arindrajit Dube and Ethan Kaplan estimated that California’s family leave insurance program would save employers \$89 million per year in turnover reduction.<sup>159</sup>

Employers benefit when workers return to their pre-leave jobs. Zigler, Muenchow, and Ruhm note in their 2012 book that continuity of employment among workers taking leave could help protect specific human capital.<sup>160</sup> If workers quit their jobs in order to take leave, employers need to hire and train new employees, which is costly. The median cost to employers of worker turnover is approximately 21 percent of an employee’s annual salary.<sup>161</sup> In addition to added costs to the employers, workers need to spend time looking for a new job and might have difficulty finding a position that is a good match.

## Limited or positive effects on business operations

A study of companies listed in *Working Mother* magazine’s “100 Best Companies for Working Mothers” finds that the availability and usage of work-family programs and policies has a positive impact on company profits.<sup>162</sup> The authors explain that employers providing work-family programs can attract higher-quality workers, reduce absenteeism and tardiness among employees, and reduce employee turnover. As a result, these programs increase employee productivity, which in turn increases employer profitability.<sup>163</sup>

Another study finds that work-family policies positively affect firms' value. Using data collected from Fortune 500 companies, Professors Michelle M. Arthur and Alison Cook found that announcements in *The Wall Street Journal* of a company instituting work-family policies increased the share price of the firm the same day.<sup>164</sup> The authors explain that investors believe that the benefits of the work-family policies will outweigh the costs of the program, thereby increasing the expected profitability of the company.<sup>165</sup>

Furthermore, family and medical leave insurance can generate cost savings for employers since it can be coordinated with employer-provided benefits and reduce employee-turnover costs.<sup>166</sup> California employers report that the state's family leave insurance program has had no effect or a positive effect on business operations: 87 percent of employers surveyed by Appelbaum and Milkman in 2009 and 2010 noted that family leave did not result in any cost increases, and 60 percent of employers reported that they coordinated their benefits with the family leave program.<sup>167</sup> Herb Greenberg—founder and CEO of Caliper, a human resources consulting firm in New Jersey—has observed similar reductions in turnover costs:

Family Leave Insurance ... has been a huge positive for Caliper. When you think about the cost of individuals leaving, the cost of seeking new employees, the cost of maybe hiring the wrong person [and] training them, etc., and you compare that to the pennies that Family Leave costs you—there is just no comparison in terms of the pure balance sheet.<sup>168</sup>

With potential increases in employee productivity and reduced turnover costs, family and medical leave insurance can benefit rather than disrupt business operations. Ninety-one percent of employers in California, for example, reported “a positive effect” or “no noticeable effect” on business profitability and performance upon instituting family leave.<sup>169</sup>

## **Gives workers a way to stay in the labor force while taking leave, thereby increasing their lifetime earnings and retirement savings**

A recent study on U.S. caregiving costs calculated that women lose a total of \$274,044 and men lose a total of \$233,716 in lifetime wages and Social Security benefits by leaving the labor force early due to caregiving responsibilities.<sup>170</sup>

Family and medical leave increases the likelihood that workers—especially women—will return to their pre-leave jobs and therefore continue to earn their pre-leave wages. The U.S. Census Bureau reports that of the 80.4 percent of working mothers who returned to their pre-first-birth employer, 69 percent had the same hours, pay, and skill level as before they had children. Conversely, only 25.3 percent of working mothers who returned to a different employer had the same hours, pay, and skill level as before they had their first child.<sup>171</sup> Some of these declines in wages could be due to mothers choosing to reduce their work hours in order to spend time with their newborns. These declines in wages could also be due to women having to find new employment after taking leave. As Joyce P. Jacobsen and Laurence M. Levin find, women who exit the labor force to take leave often return to wages that are lower than those of women who remain in the labor force.<sup>172</sup>

Research by Columbia University Professor Jane Waldfogel suggests that family and medical leave insurance could help close the wage gap between workers who provide care and those who do not. In her study of maternity leave policies in the United States pre-FMLA and Britain, Waldfogel finds that the so-called family gap—the wage gap between mothers and other working women—is mostly eliminated for mothers who have access to unpaid or paid, job-protected maternity leave.<sup>173</sup> Women who had access to such leave were more likely to return to their original employer and experienced a positive wage effect that offset the family wage gap.<sup>174</sup> Similarly, a study by Rutgers University’s Center for Women and Work found that working mothers who take family leave for 30 or more days for the birth of their children are 54 percent more likely to report wage increases in the year following their children’s birth, relative to mothers who did not take family leave.<sup>175</sup> In addition, the Center for Women and Work found that women who took family leave after their children’s birth were 39 percent less likely to

receive public assistance in the following year, compared to mothers who returned to work but did not take any leave.<sup>176</sup>

### **Incentivize men and women to share care responsibilities**

Although women make up almost half the labor force and a majority of families now rely on their incomes for financial stability, women, rather than men, often take on the role of caregiver. When family and medical leave insurance is offered, however, the take-up rate among men is much higher. The percentage of family leave taken by men in California has increased since the institution of its program: Men's share of parent-bonding family leave—as a percentage of all parent-bonding family leave claims—increased from 17 percent from 2004 to 2005 to 29.2 percent from 2011 to 2012.<sup>177</sup> In addition, men in California are taking longer leaves than they did before family leave insurance was available.<sup>178</sup> Studies of international family leave programs find similar results. Child-bonding or caregiving family leave—specifically set aside for fathers—significantly increases the length and take-up of leave among men.<sup>179</sup>

Family and medical leave insurance could help counteract the cultural norm that caregiving is within the woman's realm. Although women today are playing a larger role as breadwinners in the majority of American families, women are more likely than men to pick up the second shift of caregiving and housework.<sup>180</sup> Family and medical leave insurance would provide the opportunity to balance care between men and women, resulting in fewer disruptions in employment and earnings for women.

## **Conclusion**

Updating our nation's labor standards is an important, ongoing goal. Today's labor force needs a comprehensive set of inclusive basic labor protections that help workers limit their hours and promote workplace flexibility. These labor protections should not work against working families but rather work with them, helping them balance work and home. The next step toward updating our protections is establishing a national family and medical leave insurance program. The program proposed in the FAMILY Act would address the new realities of our workforce, providing workers with the flexibility to address their caregiving responsibilities while they remain in the labor force.

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## Endnotes

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- <sup>122</sup> Eligibility for Social Security Disability Insurance is based on whether workers have earned a sufficient number of credits over their lifetimes and in recent years. In 2013, individuals received one credit for each \$1,160 of earnings, up to a maximum of four credits per year. This means that any worker who earned at least \$4,640 in 2013 earned the maximum of four credits. This is a relatively low threshold for eligibility: A worker employed for 20 hours per week at the current minimum wage of \$7.25 would only have to work 32 weeks out of the year in order to receive the maximum of four credits for that year. See Boushey, “The Role of the Government in Work-Family Conflict;” Social Security Administration, “Disability Planner: How Much Work Do You Need?,” available at <http://www.ssa.gov/dibplan/dqualify2.htm> (last accessed December 2013).
- <sup>123</sup> Individuals over the age of 42 must have earned 20 credits in the 10 years immediately before their leave, plus an additional two credits for each year over the age of 42. Workers between the ages of 31 and 42 must have earned 20 credits in the previous 10 years. Those between ages 24 and 31 must have earned credits for working half the time between age 21 and the point at which they need leave. For instance, a 29-year-old worker would need to have earned 16 credits—the equivalent of four years of work—in the past eight years. Individuals under the age of 24 typically need six credits, or one and a half years of work in the three years prior to their leave. Social Security Administration, “Benefits Planner: Number of Credits Needed For Disability Benefits,” available at <http://www.ssa.gov/retire2/credits3.htm> (last accessed December 2013).
- <sup>124</sup> Steven F. Hipple, “Self-employment in the United States,” *Monthly Labor Review* (2010), available at <http://www.bls.gov/opub/mlr/2010/09/art2full.pdf>; Bureau of Labor Statistics, “Contingent and Alternative Employment Arrangements” (U.S. Department of Labor, 2005), available at <http://www.bls.gov/news.release/pdf/conemp.pdf>.

- <sup>125</sup> State of California Employment Development Department, “Self-Employed,” available at <http://www.edd.ca.gov/disability/self-employed.htm> (last accessed December 2013); Ruth Milkman and Eileen Appelbaum, “Paid Family Leave in California and New Jersey: The Benefits for Working Families and Employers” (Cambridge, MA: Scholars Strategy Network, 2012), available at [http://www.scholarsstrategynetwork.org/sites/default/files/ssn\\_basic\\_facts\\_milkman\\_and\\_appelbaum\\_on\\_paid\\_family\\_leave\\_in\\_ca\\_and\\_nj.pdf](http://www.scholarsstrategynetwork.org/sites/default/files/ssn_basic_facts_milkman_and_appelbaum_on_paid_family_leave_in_ca_and_nj.pdf).
- <sup>126</sup> State of New Jersey Department of Labor and Workforce Development, “Benefit Calculation and Duration of Benefits.”
- <sup>127</sup> State of California Employment Development Department, “Paid Family Leave Benefits.”
- <sup>128</sup> Ruth Milkman and Eileen Appelbaum, *Unfinished Business: Paid Family Leave in California and the Future of U.S. Work-Family Policy* (Ithaca, NY: Cornell University Press, 2013).
- <sup>129</sup> Boushey, “Helping Breadwinners When It Can’t Wait.”
- <sup>130</sup> Ann O’Leary, Matt Chayt, and Eve Weissman, “Social Security Cares: Why America Is Ready for Paid Family and Medical Leave” (Washington: Center for American Progress, 2012), available at <http://www.americanprogress.org/issues/labor/report/2012/09/27/39331/social-security-cares/>.
- <sup>131</sup> Berkeley Center on Health, Economic & Family Security and Workplace Flexibility 2010, “Family Security Insurance: A New Foundation for Economic Security” (2010), available at [http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1002&context=pub\\_rep](http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=1002&context=pub_rep).
- <sup>132</sup> Center on Budget and Policy Priorities, “Status of the ACA Medicaid Expansion after Supreme Court Ruling” (2013), available at <http://www.cbpp.org/files/status-of-the-ACA-medicaid-expansion-after-supreme-court-ruling.pdf>.
- <sup>133</sup> Berkeley Center on Health, Economic & Family Security and Workplace Flexibility 2010, “Family Security Insurance.”
- <sup>134</sup> Ibid.
- <sup>135</sup> Heather Boushey and Jordan Eizenga, “Toward a Strong Unemployment Insurance System: The Case for an Expanded Federal Role” (Washington: Center for American Progress, 2011), available at [http://www.americanprogress.org/wp-content/uploads/issues/2011/02/pdf/ui\\_brief.pdf](http://www.americanprogress.org/wp-content/uploads/issues/2011/02/pdf/ui_brief.pdf).
- <sup>136</sup> Ibid.
- <sup>137</sup> Heather Boushey, Andrew Stettner, and Jeffrey Wenger, “Clearing the Path to Unemployment Insurance for Low-Wage Workers” (New York: National Employment Law Project and Center for Economic and Policy Research, 2005), available at <http://www.cepr.net/index.php/publications/reports/nelp-and-cepr-clearing-the-path-to-unemployment-insurance-for-low-wage-workers/>.
- <sup>138</sup> In all but three states, the UI taxes are entirely paid by employers. Economists would argue that in the end, all payroll taxes are effectively deductions out of wages, but the politics of who pays can affect policymaking in specific ways. See Chad Stone and William Chen, “Introduction to Unemployment Insurance” (Washington: Center on Budget and Policy Priorities, 2013), available at <http://www.cbpp.org/cms/index.cfm?fa=view&id=1466>.
- <sup>139</sup> Celinda Franco, “Unemployment Compensation: Benefits While on Leave for the Birth or Adoption of a Child” (Washington: Congressional Research Service, 2004), available at [http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1229&context=key\\_workplace](http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1229&context=key_workplace).
- <sup>140</sup> Ibid.
- <sup>141</sup> Ibid.
- <sup>142</sup> Ibid.
- <sup>143</sup> National Partnership for Women & Families, “The Case for a National Family and Medical Leave Insurance Program.”
- <sup>144</sup> Ibid.
- <sup>145</sup> Milkman and Appelbaum, *Unfinished Business*.
- <sup>146</sup> National Partnership for Women & Families, “The Case for a National Family and Medical Leave Insurance Program.”
- <sup>147</sup> Ibid.
- <sup>148</sup> Ibid.
- <sup>149</sup> Ibid.

- <sup>150</sup> Heather Boushey, Ann O’Leary, and Alexandra Mitukiewicz, “The Economic Benefits of Family and Medical Leave Insurance”(Washington: Center for American Progress, 2013), available at <http://www.americanprogress.org/issues/economy/report/2013/12/12/81036/the-economic-benefits-of-family-and-medical-leave-insurance/http://www.americanprogress.org/issues/economy/report/2013>.
- <sup>151</sup> Francine D. Blau and Lawrence M. Kahn, “Female Labor Supply: Why is the US Falling Behind?” Discussion Paper 7140 (Bonn, Germany: Institute for the Study of Labor, 2013), available at <http://ftp.iza.org/dp7140.pdf>.
- <sup>152</sup> Christopher J. Ruhm and Jackqueline L. Teague, “Parental Leave Policies in Europe and North America.” Working Paper 5065 (Cambridge, MA: National Bureau of Economic Research, 1995), available at [http://www.nber.org/papers/w5065.pdf?new\\_window=1](http://www.nber.org/papers/w5065.pdf?new_window=1).
- <sup>153</sup> Ibid.
- <sup>154</sup> Christopher J. Ruhm, “The Economic Consequences of Parental Leave Mandates: Lessons from Europe,” *The Quarterly Journal of Economics* 113 (1) (1998): 285–317, available at [http://libres.uncg.edu/ir/uncg/f/C\\_Ruhm\\_Economic\\_1998.pdf](http://libres.uncg.edu/ir/uncg/f/C_Ruhm_Economic_1998.pdf).
- <sup>155</sup> C. R. Winegarden and Paula M. Bracy, “Demographic Consequences of Maternal-Leave Programs in Industrial Countries: Evidence from Fixed-Effects Models,” *Southern Economic Journal* 61 (4) (1995): 1020–1035.
- <sup>156</sup> Gordon B. Dahl and others, “What Is the Case for Paid Maternity Leave?” Working Paper 19595 (Cambridge, MA: National Bureau of Economic Research, 2013), available at <http://www.nber.org/papers/w19595>.
- <sup>157</sup> Appelbaum and Milkman, “Leaves That Pay.”
- <sup>158</sup> Ibid.
- <sup>159</sup> Arindrajit “Arin” Dube and Ethan Kaplan, “Paid Family Leave in California: An Analysis of Costs and Benefits” (Berkeley, CA: Labor Project for Working Families, 2002), available at <http://www.paidfamilyleave.org/pdf/dube.pdf>.
- <sup>160</sup> The authors define “specific human capital”—as outlined by economist Walter Y. Oi—as the “investments in training and skill development that are specific to the employer, industry, or occupation.” See Zigler, Muenchow, and Ruhm, *Time Off With Baby*; Walter Y. Oi, “Labor as a Quasi-Fixed Factor,” *The Journal of Political Economy* 70 (6) (1962): 538–555, available at <http://www.ppge.ufrgs.br/GIACOMO/arquivos/ecop72/oi-1962.pdf>.
- <sup>161</sup> Heather Boushey and Sarah Jane Glynn, “There Are Significant Business Costs to Replacing Employees” (Washington: Center for American Progress, 2012), available at <http://www.americanprogress.org/issues/labor/report/2012/11/16/44464/there-are-significant-business-costs-to-replacing-employees/>.
- <sup>162</sup> Christine Siegwath Meyer, Swati Mukerjee, and Ann Sestero, “Work-Family Benefits: Which Ones Maximize Profits?”, *Journal of Managerial Issues* 13 (1) (2001): 28–44.
- <sup>163</sup> Ibid.
- <sup>164</sup> Michelle M. Arthur and Alison Cook, “Taking Stock of Work-Family Initiatives: How Announcements of ‘Family-Friendly’ Human Resource Decisions Affect Shareholder Value,” *ILRRReview* 57 (4) (2004): 599–613, available at <http://digitalcommons.ilr.cornell.edu/cgi/viewcontent.cgi?article=1099&context=ilrreview>.
- <sup>165</sup> Ibid.
- <sup>166</sup> Appelbaum and Milkman, “Leaves That Pay.”
- <sup>167</sup> Ibid.
- <sup>168</sup> Family Values @ Work, “From the Story Bank: Dr. Herb Greenberg’s Story,” available at <http://familyvaluesatwork.org/story/dr-herb-greenbergs> (last accessed August 2013).
- <sup>169</sup> Appelbaum and Milkman, “Leaves That Pay.”
- <sup>170</sup> MetLife Mature Market Institute, “The MetLife Study of Caregiving Costs to Working Caregivers.”
- <sup>171</sup> Lynda Laughlin, “Maternity Leave and Employment Patterns of First-Time Mothers: 1961–2008” (U.S. Department of Commerce, 2011), available at <http://www.census.gov/prod/2011pubs/p70-128.pdf>.
- <sup>172</sup> Joyce P. Jacobsen and Laurence M. Levin, “Effects of intermittent labor force attachment on women’s earnings,” *Monthly Labor Review* (1995): 14–19, available at <http://www.bls.gov/mlr/1995/09/art2full.pdf>.
- <sup>173</sup> Jane Waldfogel, “The Family Gap for Young Women in the United States and Britain: Can Maternity Leave Make a Difference?”, *Journal of Labor Economics* 16 (3) (1998): 505–545.



174 Ibid.

175 Houser and Vartanian, “Pay Matters.”

176 Ibid.

177 Milkman and Appelbaum, *Unfinished Business*.

178 Appelbaum and Milkman, “Leaves That Pay.”

179 The following research finds that leave specifically reserved for fathers—also known as daddy days—increases take-up rates of leave among fathers. See Ray, Gornick, and Schmitt, “Parental Leave Policies in 21 Countries;” Katherine Marshall, “Fathers’ use of paid parental leave,” *Statistics Canada* (75-001-X) (2008): 5–14, available at <http://www.statcan.gc.ca/pub/75-001-x/2008106/pdf/10639-eng.pdf>; Gornick and Meyers, *Families That Work*.

180 Arlie Hochschild and Anne Machung, *The Second Shift* (New York: Penguin Books, 2003).



# **Worker Centers, Worker Center Networks and The Promise of Protections for Low Wage Workers under the FLSA**

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## **Abstract**

The FLSA has been very effective at setting a floor on labor standards and providing workers with a legal and regulatory framework that can be used to raise concerns over pay and working conditions. But, there are uncertainties over the evolution of the low wage labor market including changes in the structure of industries, firms and jobs and how these impact the wages and working conditions of more vulnerable workers. Over the last two decades, a number of community-based and community-led organizations--known as worker centers--have been engaging in organizing, research, direct service provision, policy analysis and development, and advocacy with low-wage workers in the most marginalized sectors of the labor market. Worker centers and worker center networks engage in a broad range of labor market activities including: worker based programs, services, and campaigns; labor market intermediation; employer focused strategies; and a range of consumer and community education and engagement campaigns and initiatives. Worker centers and worker center networks play an essential role in low wage labor markets by identifying key sectors in the low wage economy where there are large numbers of vulnerable workers and labor violations; by organizing workers, developing and managing campaigns, and providing access to legal remedies for labor violations; and by developing strategies to improve pay, working conditions, and other aspects of job quality in low wage occupations. Any strategy designed to reduce labor violations and improve working conditions for low wage workers take into account the functions and roles of worker centers and worker center networks in articulating the needs of workers and devising strategies, programs, campaigns and initiatives designed to address them.

## **The Promise and Contributions of the FLSA**

The Fair Labor Standards Act (FLSA)<sup>1</sup> of 1938 is the cornerstone of labor law in the United States and regulates hours of work, minimum pay, overtime pay, and child labor. As we approach the 75<sup>th</sup> anniversary of this seminal legal and regulatory framework for worker protections it is important to take note of the many gains that workers have made over this long history and to discuss some of the key remaining challenges facing low wage workers. The basic promise of the FLSA is that workers will be paid a fair wage for a fair days work and that workers will not be cheated, or casually exploited, by those that seek to gain an unfair advantage over their competitors.

The FLSA has been very effective at setting a floor on labor standards and providing workers with a legal and regulatory framework that can be used to raise problems with pay and working conditions. But, there are growing concerns over the evolution of the economy including changes in the structure of industries and firms and the quality of jobs in the low wage labor market<sup>2</sup>; increases in the prevalence and incidence of various labor violations<sup>3</sup>; the evolving role and distribution of immigrant workers<sup>4</sup>; ways of extending the coverage and reach of the law throughout the labor market<sup>5</sup>; and the role of unions and emerging low wage worker organizations, worker centers and networks<sup>6</sup> in protecting workers, increasing the reach of labor law, and improving the pay, working conditions, and the lives of workers.

## **Sectors Excluded from the FLSA**

The FLSA was the legislative outcome of sustained debate and class conflict among a range of forces and stakeholders in American society following the great depression<sup>7</sup>. While labor was originally divided over the act, there is recognition that the growing power of organized workers provided key impetus for consideration and passage of the law. The FLSA as originally enacted, however, contained a number of exclusions that were the result of deal making between senators in order to convince the south to support it, and to carve out certain protections for a few sectors of the economy<sup>8</sup>. The FLSA has evolved over time and has been

<sup>1</sup> For the text of the FLSA see <http://www.dol.gov/whd/regs/statutes/FairLaborStandAct.pdf>

<sup>2</sup> Bernhardt, Annette, Heather Boushey, Laura Dresser, and Chris Tilly. 2008. *The gloves-off economy: Workplace standards at the bottom of America's labor market*. Ithaca, NY: ILR Press; Osterman, Paul and Beth Shulman. 2011. *Good jobs America: Making work pay better for everyone*. New York, NY: Russell Sage Foundation.

<sup>3</sup> Bernhardt, Annette, Ruth Milkman, Nik Theodore, Douglas Heckathorn, Mirabai Auer, James DeFilippis, Ana Luz Gonzalez, Victor Narro, Jason Perelshteyn, Diana Polson, and Michael Spiller. 2009. *Broken laws, unprotected workers: Violations of employment and labor laws in American cities*. New York, NY: National Employment Law Project.

<sup>4</sup> Cordero-Guzman, Hector and Desiree Nunez. 2013. "Immigrant Labor in the US Economy: A Profile" *New Labor Forum* 22(2):16-27.

<sup>5</sup> Fine, Janice. 2013. "Solving the Problem from Hell: Tripartism as a Strategy for Addressing Labor Standards Non-Compliance in the United States" *Osgoode Hall Law Journal* 50:813-843; Fine, Janice and Jennifer Gordon. 2010. "Strengthening Labor Standards Enforcement through Partnerships with Workers' Organizations" *Politics and Society* 38 (4): 552-585.

<sup>6</sup> Fine, Janice. 2006. *Workers Center: Organizing Communities at the Edge of the Dream*. Ithaca, NY: Cornell University Press; Yates Rivchin, Julie. 2004. "Building Power among Low-Wage Immigrant Workers: Some Legal Considerations for Organizing Structures and Strategies" *New York University Review of Law and Social Change* 28: 397; Cordero-Guzman, Hector, Pamela Izvanariu and Victor Narro. 2013. "The Development of Sectoral Worker Center Networks" *Annals of the American of Political and Social Science* 647 (May): 102-126; Milkman, Ruth, Joshua Bloom, and Victor Narro. 2010. *Working for justice: The L.A. model of organizing and advocacy*. Ithaca, NY: Cornell University Press.

<sup>7</sup> Brand, Horst.1983. "The Evolution of Fair Labor Standards: A Study in Class Conflict" *Monthly Labor Review* 106:25.

<sup>8</sup> Brand, Horst.1983. "The Evolution of Fair Labor Standards: A Study in Class Conflict" *Monthly Labor Review* 106:25.

amended to increase the minimum wage, to repeal exemptions for domestic workers (in 1974), and to provide overtime to certain types of hotel, motel and restaurant employees<sup>9</sup>.

There are several occupations and categories of workers that continue to be excluded from the FLSA. Some of these exclusions are in sectors where wages tend to be significantly higher than the legal minimum such as: executive, administrative, professional and outside sales employees who are paid on a salary basis; commissioned sales employees of retail or service establishments; and computer professionals<sup>10</sup>. But, there are other sectors where a combination of industry power and general reluctance to add regulations has kept workers excluded from the FLSA such as: salesmen, partsmen and mechanics employed by automobile dealerships; drivers, driver's helpers, loaders and mechanics employed by a motor carrier; workers in certain seasonal and recreational establishments; and farmworkers employed in small farms<sup>11</sup>.

The Motor Carrier Exemption under the Fair Labor Standards Act (FLSA)<sup>12</sup>, where interstate bus drivers are excluded from overtime protections, has been criticized as potentially compromising the security of customers and other users of roads and interstate highways<sup>13</sup>. Worker advocates have expressed concern over the exclusion of intercity bus operators from the FLSA and the adverse safety effects that result from drivers--for mostly nonunion and low-wage companies--exceeding the DOT's hours of service rules and often working well over the maximum limits. The inability of drivers to earn a decent living compels many to take on second jobs to support their families and the resulting fatigue can lead to horrific crashes.

There are a range of other minimum wage (MW), overtime (OT) and child labor (CL) exemptions that apply to specific occupations<sup>14</sup> and there is growing concern over the implications of these continuing exemptions for worker coverage, the growth of the labor force in excluded sectors, and changes in the characteristics of workers not covered by the FLSA<sup>15</sup>.

<sup>9</sup> Lin, James. 2013. "A Greedy Institution: Domestic Workers and a Legacy of Legislative Exclusion" *Fordham International Law Journal* 36: 706-706; Nadasen, Premilla. 2012. "Citizenship Rights, Domestic Work, and the Fair Labor Standards Act" *Journal of Policy History* 24(01): 74-94

<sup>10</sup> <http://www.dol.gov/elaws/esa/flsa/screen75.asp>

<sup>11</sup> <http://www.dol.gov/elaws/esa/flsa/screen75.asp>

<sup>12</sup> <http://www.dol.gov/elaws/esa/flsa/screen75.asp>

<sup>13</sup> Amalgamated Transit Union. ND. *Sudden Death Overtime: A Common Sense Bus Safety Proposal*. Washington, DC: AFL-CIO/CLC.

<sup>14</sup> <http://www.dol.gov/elaws/esa/flsa/screen75.asp> Aircraft salespeople (OT), Airline employees (OT), Amusement/recreational employees in national parks/forests/Wildlife Refuge System (OT), Babysitters on a casual basis (MW & OT), Boat salespeople (OT), Buyers of agricultural products (OT), Companions for the elderly (MW & OT), Country elevator workers (rural) (OT), Workers with disabilities (MW), Domestic employees who live-in (OT), Farm implement salespeople (OT), Federal criminal investigators (MW & OT), Firefighters working in small (less than 5 firefighters) public fire departments (OT), Fishing (MW & OT), Forestry employees of small (less than 9 employees) firms (OT), Fruit & vegetable transportation employees (OT), Homeworkers making wreaths (MW, OT & CL), Houseparents in non-profit educational institutions (OT), Livestock auction workers (OT), Local delivery drivers and driver's helpers (OT), Lumber operations employees of small (less than 9 employees) firms (OT), Motion picture theater employees (OT), Newspaper delivery (MW, OT & CL), Newspaper employees of limited circulation newspapers (MW & OT), Police officers working in small (less than 5 officers) public police departments (OT), Radio station employees in small markets (OT), Railroad employees (OT), Seamen on American vessels (OT), Seamen on other than American vessels (MW & OT), Sugar processing employees (OT), Switchboard operators (MW & OT), Taxicab drivers (OT), Television station employees in small markets (OT), Truck and trailer salespeople (OT), Youth employed as actors or performers (CL), Youth employed by their parents (CL).

<sup>15</sup> Goldberg, Harmony. Jackson, Randy. 2011. "The Excluded Workers Congress. Reimagining the Right to Organize" *New Labor Forum* 20 (3): 54-59.

## **The Main Characteristics of the Low-wage Labor Market**

The US economy and labor market have been shaped by a number of trends and developments.<sup>16</sup> First, the markets for capital, labor, production, and consumption have become increasingly globalized and inter-connected. The systems of production and systems of labor procurement, in particular, are now characterized by global chains, corporate networks, and transnational labor recruitment regimes<sup>17</sup>. These emerging networks of local and global production, labor procurement, and consumption are facilitated by advances in technology, transportation, and telecommunications and they have increased the power of global firms and actors over local workers and organized labor. Second, the productivity of US workers and firms has grown but compensation for workers has remained stagnant<sup>18</sup>. Many sectors, but especially manufacturing and services, are generating more output with lower labor inputs and fewer full-time workers. Meanwhile, there has been growth in outsourcing, subcontracting, and multiple production chains in a range of jobs and industries. This has led to increased use of flexible and temporary workers, the development of a temporary staffing industry, and increased reliance on labor market intermediaries to source and secure labor.<sup>19</sup> Finally, declining union participation across regions and sectors of the US economy has reduced the power of workers to bargain and negotiate working terms, conditions, and benefits.<sup>20</sup>

Changes in the structure of the economy have combined with demographic changes in the population (resulting largely from increased immigration) to produce a much more complex labor force and challenging labor market.<sup>21</sup> In 2005, immigrants represented 15 percent of the US labor force and their share in the labor force has been growing steadily. Immigrants who had entered the United States since 2000 accounted for 67 percent of the overall growth in the civilian labor force by 2005, and in 12 states, they accounted for over 80 percent of growth. However, new immigrant workers were overrepresented in low-skill jobs, making up more than a fifth (21 percent) of low-wage workers and almost half (45 percent) of workers without a high school education.<sup>22</sup>

In total, approximately 36.3 million workers are employed in 20 largest “low-wage occupations,”<sup>23</sup> although exact numbers vary depending on how the various sectors are defined

<sup>16</sup> Bernhardt, Annette, Heather Boushey, Laura Dresser, and Chris Tilly. 2008. *The gloves-off economy: Workplace standards at the bottom of America's labor market*. Ithaca, NY: ILR Press; Holzer, Harry J., Julia I. Lane, David B. Rosenblum, and Fredrik Anderson. 2011. *Where are all the good jobs going? What national and local job quality and dynamics mean for US Workers*. New York, NY: Russell Sage Foundation.

<sup>17</sup> An analysis of recent data suggests that the world's largest employers are Wal-Mart (in retail) at over 1.8 million (with 1.2 million “associates” in the US) and Manpower (in the staffing industry) with 350,000 employees in the US and 4 million globally. Other large US employers are in fast food including Yum Brands (523,000 workers) and McDonalds (440,000 workers), retail with Target (361,000) and Kroeger (343,000) and in logistics with UPS (400,000 workers). <http://www.usatoday.com/story/money/business/2013/08/22/ten-largest-employers/2680249/>

<sup>18</sup> Mishel, Lawrence, Josh Bivens, Elise Gould, and Heidi Shierholz. *The State of Working America*, 12th Edition. Ithaca, N.Y.: Cornell University Press. See data at <http://www.stateofworkingamerica.org/chart/swa-wages-figure-4u-change-total-economy/>

<sup>19</sup> Osterman, Paul and Beth Shulman. 2011. *Good jobs America: Making work pay better for everyone*. New York, NY: Russell Sage Foundation.

<sup>20</sup> Ness, Immanuel. 2005. *Immigrants, unions, and the new U.S. labor market*. Philadelphia, PA: Temple University Press.

<sup>21</sup> Osterman, Paul and Beth Shulman. 2011. *Good jobs America: Making work pay better for everyone*. New York, NY: Russell Sage Foundation.

<sup>22</sup> Randolph Capps, Karina Fortuny, Michael E. Fix. 2007. *Trends in the Low-Wage Immigrant Labor Force, 2000-2005*. Washington, DC; Urban Institute. <http://www.urban.org/url.cfm?ID=411426>

<sup>23</sup> In trying to better understand the location of low-wage work it can be useful to think about the segmentation of industries and occupations separately and then to think about how they are linked. There are industries that include high

and the kind of data used.<sup>24</sup> Table 1 includes the largest low-wage occupations in the United States arranged by broad sector and ranked from the lowest paid occupations to the higher paid ones. As Table 1 shows, the largest low-wage occupations in terms of numbers of workers are in retail sales (8.3 mm); food and beverage serving (6.4 mm); materials moving (4 mm); cooks and food preparation (2.9 mm), other professional care and services (2.3 mm); nursing, psychiatric and home care workers (2.3 mm); buildings cleaning and pest control (2.1 mm); other protective services (1.4 mm); other food preparation & serving (1.2 mm); grounds maintenance (909k); maids and housekeeping cleaners (894k).

The lowest paid occupations include food and beverage serving (\$8.88 hourly median); other food preparation and serving (\$8.91); entertainment attendants and related work (\$9.06); agricultural workers (\$9.14); maids and housekeeping cleaners (\$9.41); retail sales (\$9.56); animal care and service workers (\$9.60); cooks and food preparation (\$9.66); other personal care and services (\$9.92); other transportation workers (\$10.38); textile, apparel and furnishings (\$10.58); personal appearance workers (\$10.67), and building cleaning and pest control (\$10.85). Many of these occupations have segments with little access to worker protections and where labor and other rules and regulations are frequently violated.<sup>25</sup> In addition, these segments of the labor force include large proportions of immigrants--including undocumented workers--in relatively vulnerable positions; are subject to exploitation; and are not well connected to adult education, training, and other workforce development opportunities.<sup>26</sup>

### **Evolving Low Wage Labor Markets, Forms of Exclusion, and Access to the Promise of the FLSA**

Workers in sectors that are formally excluded from the FLSA are likely to be more vulnerable than workers in included sectors but the evolving nature of labor markets, firm structures, and employment relations leaves many workers that are formally covered by the act in a vulnerable position. Clearly, a central dimension of worker exclusion is “de jure” but there are several other dimensions of exclusion from access to the reach and benefits of labor laws that can lead to “de facto” lack of access<sup>27</sup>. Worker advocates have suggested that in addition to legal exclusions from minimum wage and overtime protections there are other forms of exclusion that impact low wage workers. First, exclusions from the right to organize encoded in the National Labor Relations Act (NLRA)<sup>28</sup> limit the tools available to low wage workers and opportunities to

proportions of low-wage workers (low-wage industries) but there are also low-wage workers in high wage industries. In terms of occupations there are high and low-wage occupations but even within occupations there is a distribution of earnings and we can categorize occupations as high and low-wage occupations with an understanding that there are likely to be some high wage workers in low-wage occupations and some low-wage workers in high wage occupations.

<sup>24</sup> The table includes the 20 lowest paid occupations from the 96 minor occupational groups as defined in the Standard Occupational Categories (SOC) of the US Department of Labor (<http://www.bls.gov/soc/>). I use the minor groups with the exception of Maid and Housekeeping Cleaners (a more detailed category) that are included in the Building Cleaning and Pest control workers in the original data but in this table they are excluded from that category and reported separately (and grouped with Personal and Household Services). The lowest median hourly wage for the 20 occupations included in the table is \$8.88 (Food and Beverage Serving Workers) and the highest is \$11.74 (Tour and Travel Guides).

<sup>25</sup> Bernhardt, Annette, Ruth Milkman, Nik Theodore, Douglas Heckathorn, Mirabai Auer, James DeFilippis, Ana Luz Gonzalez, Victor Narro, Jason Perelshteyn, Diana Polson, and Michael Spiller. 2009. *Broken laws, unprotected workers: Violations of employment and labor laws in American cities*. New York, NY: National Employment Law Project.

<sup>26</sup> Randolph Capps, Karina Fortuny, Michael E. Fix. 2007. *Trends in the Low-Wage Immigrant Labor Force, 2000-2005* Washington, DC; Urban Institute. <http://www.urban.org/url.cfm?ID=411426>; Osterman, Paul and Beth Shulman. 2011. *Good jobs America: Making work pay better for everyone*. New York, NY: Russell Sage Foundation.

<sup>27</sup> United Worker Congress. 2010. *Unity for Dignity: Expanding the Right to Organize to Win Human Rights at Work*. New York: United Worker Congress.

<sup>28</sup> <http://www.nlr.gov/resources/national-labor-relations-act>



act collectively<sup>29</sup>. Second, there continues to be significant discrimination in access to jobs<sup>30</sup> and a sense that the EEOC and related entities do not have the needed tools to prevent many forms of discrimination in access to jobs or pay<sup>31</sup>. Third, while all industries are covered by the Occupational Safety and Health Act (OSHA)<sup>32</sup> there are reporting exemptions for firms with less than 10 employees and recent guidance limits the number and types of workplace inspections potentially limiting the access of many workers to the protections of health and safety laws<sup>33</sup>. Fourth, subcontractors and other workers that are not formally classified as employees, such as taxi drivers, are often excluded from protections and employers wield a disproportionate amount of power in terms of their ability to define the terms and conditions of employment<sup>34</sup>. Lastly, guest workers face particular challenges in terms of working conditions and their ability to articulate and exert their rights<sup>35</sup> and there are distinct challenges in applying both US and home country laws to temporary migrant workers<sup>36</sup> and to the estimated 11.7 million undocumented immigrants in the US<sup>37</sup>.

There are legally sanctioned forms of exclusion from labor protections but there are other dimensions of exclusion that evolve around the risk of exposure to labor violations (wage and hour violations or risk of hazards and injury) and the various forms of access to legal and other remedies once violations have occurred and have been identified by particular workers. Recent research by Bernhardt, Theodore, Milkman and their collaborators suggests that workers in a number of key occupations and industries face significant risk and exposure to a number of labor violations. The study finds that there were significant proportions of workers exposed to a range of labor violations during the week prior to the survey including 25.9% of workers that were paid below minimum wage, 19.1% of workers not being paid or underpaid overtime; 16.9% of workers not being paid for “off the clock” work, 58.3% of workers with meal break violations, and a range of other violations including 56.8% of surveyed workers not receiving a pay stub<sup>38</sup>.

The rates of minimum wage violations varied by occupation and industry with apparel and textile manufacturing (42.6%), personal and repair services (42.3%), and private households (41.5%) having the highest levels followed by retail and drug stores (25.7%), grocery stores (23.5%), security, building and grounds services (22.3%), food\ furniture manufacturing, transportation and warehousing (18.5%), restaurant and hotels (18.2%), residential construction (12.7%), home health care (12.4%), and social assistance and education (11.8%).

<sup>29</sup> For a detailed discussion of the limitations and opportunities imposed by the NLRA on low wage worker and worker center organizing see Yates Rivchin, Julie. 2004. “Building Power among Low-Wage Immigrant Workers: Some Legal Considerations for Organizing Structures and Strategies” *New York University Review of Law and Social Change* 28: 397

<sup>30</sup> Bertrand, Marianne and Sendhil Mullainathan. 2004. “Are Emily and Greg more Employable than Lakisha and Jamal? A Field Experiment On Labor Market Discrimination,” *American Economic Review* 94(4): 991-1013 (September).

<sup>31</sup> Pager, Devah and Bruce Western. 2012. “Identifying Discrimination at Work: The Use of Field Experiments.” *Journal of Social Issues* 68: 221–23

<sup>32</sup> [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=OSHACT&p\\_id=2743](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=OSHACT&p_id=2743)

<sup>33</sup> [https://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_table=DIRECTIVES&p\\_id=1519](https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=1519)

<sup>34</sup> Zatz, Noah. 2011. “Beyond Misclassification: Tackling the Independent Contractor Problem Without Redefining Employment.” *ABA Journal of Labor & Employment Law*, Vol. 26; UCLA School of Law Research Paper No. 11-15.

<sup>35</sup> Ness, Immanuel. 2011. *Guest Workers and Resistance to U.S. Corporate Despotism*. Chicago: University of Illinois Press.

<sup>36</sup> Chien, Marsha. 2010. “When Two Laws are Better than One: Protecting the Rights of Migrant Workers” *Berkeley Journal of International Law* 28 (1): 15-63

<sup>37</sup> Warren, R. and Warren, J. R. 2013. “Unauthorized Immigration to the United States: Annual Estimates and Components of Change, by State, 1990 to 2010.” *International Migration Review* 47: 296–329.

<sup>38</sup> Bernhardt, Annette, Ruth Milkman, Nik Theodore, Douglas Heckathorn, Mirabai Auer, James DeFilippis, Ana Luz Gonzalez, Victor Narro, Jason Perelshteyn, Diana Polson, and Michael Spiller. 2009. *Broken laws, unprotected workers: Violations of employment and labor laws in American cities*. New York, NY: National Employment Law Project.

In terms of occupations, the study found that the highest rates of minimum wage violations were among child care workers (66.3%) followed by beauty, dry cleaning & general repair workers (49.6%); sewing and garment workers (43.2%); maids and housekeepers (29.5%); retail salespersons and tellers (28.2%); building services and grounds workers (26%); factory and packaging workers (25.2%); car wash workers, parking lot attendants and drivers (23.9%); cooks, dishwashers and food preparers (23.1%); cashiers (20.9%); stock\office clerks and couriers (18.1%); home health care workers (17.5%); security guards (16%); general construction (10.5%); and waiters, cafeteria workers and bartenders (8.5%).

There is a putative difference between workers that are legally covered by labor law protections and those that are not but access to the promise and benefits of enforceable regulation exists along a continuum from lower to higher risk of exposure to violations and from higher to lower access to remedies. While workers in many of these occupations and industries are formally covered by labor protections, the complexity and multiplicity of challenges, the opportunities to work around the law, and the limited enforcement mechanisms and tools available to implement regulations leaves many low wage workers exposed and vulnerable to labor violations and with a feeling that the existing laws and rules do not apply to them in a meaningful way. From that perspective, community groups and organizations help narrow the gap between the promise of the law and its application and applicability to vulnerable low wage workers by articulating the needs and challenges faced by workers and developing strategies to address them.

Low wage worker organizations and worker centers tend to focus on sectors where workers face relatively high risks of exposure to labor law violations but relatively low access to institutional resources and remedies. As Jennifer Gordon and Janice Fine have argued, workers that are educated about their rights, organized into collective action, and connected to community based and advocacy organizations offer the best defense against leakages at the bottom of the labor market and abuses that trickle up, increase precariousness, and affect all workers<sup>39</sup>. But, what are the main elements of the emerging low wage worker infrastructure? What are the main activities and programs? What are some of the key organizations and networks supporting marginalized low wage workers?

## **The Emergence and Role of Worker Centers and Sector Based Worker Center Networks**

The last ten years have seen the emergence of a set of organizations--known as worker centers--that includes over 150 community-based and community-led organizations around the country that engage in organizing, advocacy, labor market intermediation, and provide a range of services to low-wage workers in the most marginalized sectors of the labor market.<sup>40</sup> Worker centers<sup>41</sup> follow a community based non-profit model focusing their main activities on helping low-wage immigrants navigate the various challenges involved in low wage work. Worker

<sup>39</sup> Fine, Janice. 2013. "Solving the Problem from Hell: Tripartism as a Strategy for Addressing Labor Standards Non-Compliance in the United States" *Osgoode Hall Law Journal* 50:813-843; Fine, Janice and Jennifer Gordon. 2010. "Strengthening Labor Standards Enforcement through Partnerships with Workers' Organizations" *Politics and Society* 38 (4): 552-585.

<sup>40</sup> Fine, Janice. 2006. *Workers Center: Organizing Communities at the Edge of the Dream*. Ithaca, NY: Cornell University Press.

<sup>41</sup> Ibid.

Centers engage in a variety of strategies and initiatives to improve wages and working conditions for disadvantaged workers and their main activities fit into six key areas:

- **Organizing**, helping workers develop a collective voice (often within a specific metropolitan area or neighborhood, rather than an individual worksite); and training workers to take action on their own behalf and with other stakeholders and supporters.
- **Research**, focusing on workers and their characteristics and needs; local labor markets and employers; and a range of community issues.
- **Direct service provision**, bringing information and services on workers' rights, legal aid, English-language training, adult education, and other social services;
- **Policy\Advocacy**, exposing incidents of exploitation by specific employers or patterns in particular industries; designing and calling for policy change and reforms; and developing strategies to address worker needs, remove barriers, and find resources for their activities.
- **Network building**, connecting to other workers centers and low wage worker organizations.
- **Field building and stakeholder engagement**, identifying and connecting to various external stakeholders including education institutions, think tanks, employer groups, elected officials, appointed officials, police departments, funders, and other stakeholders.

Various types of worker centers exist, including centers organized around a particular area or community;<sup>42</sup> centers based on managing and supporting workers in particular day-labor corners;<sup>43</sup> centers that are part of multiservice social services organizations;<sup>44</sup> centers that are part of multi-service organizations focused on labor and low-wage workers;<sup>45</sup> centers that are part of interfaith groups;<sup>46</sup> centers that are started by coalitions of organizations;<sup>47</sup> centers that are publicly supported and organized by municipalities;<sup>48</sup> centers that are union related;<sup>49</sup> centers based on ethnic or national origin affiliations;<sup>50</sup> and industry/occupation-based centers.<sup>51</sup> It is the labor\employment focus and the combination of the advocacy, services, and organizing elements that distinguishes worker centers from other community-based organizations that work with immigrants.

Worker centers have shown some effectiveness at addressing the needs of low-wage workers and developing strategies that improve the quality of low-wage jobs by focusing on sectors with high proportions of low-wage workers (see Table 1), and where they see potential for making jobs better through a combination of worker training, industry- and employer-based strategies, research, and public policy development. Worker Centers focus on sectors where there are allegations of significant numbers of health, wage, and hour violations; that have significant proportions of people of color and new entrants in the workforce; and that are relatively ubiquitous but the work is often unseen or happens “behind the scenes” (the visible but invisible maid, or nanny, or the busboy at the restaurant). However, they also look for sectors where there

<sup>42</sup> For example Albany Park Workers Center in Chicago; Casa Latina in Seattle<sup>42</sup>; Workers Defense Project in Austin; New Orleans Worker Center for Racial Justice; El Centro del Immigrante in Staten Island.

<sup>43</sup> Jornaleros Unidos de Freehold in NJ; Workers Justice Project in NY.

<sup>44</sup> Coalition for Humane Immigrant Rights of LA [CHIRLA], Casa de Maryland.

<sup>45</sup> Tenants and Workers United in Virginia; the Hispanic Resource Center of Larchmont and Mamaroneck.

<sup>46</sup> Eastern North Carolina Interfaith Workers Rights Center.

<sup>47</sup> Coalicion Hispana de Ossining, Hispanic Westchester Coalition.

<sup>48</sup> Pomona Day Laborer Center.

<sup>49</sup> Harris County AFL-CIO, Justice & Equality in the Workplace Program.

<sup>50</sup> Pilipino Workers' Center, Korean Immigrant Workers Advocates [KIWA].

<sup>51</sup> Domestic Workers United, Garment Workers Center, Restaurant Opportunities Center, Direct Care Alliance.

is the potential for policy advancement and network building, and some organizing capacity and experience.

## The Development of Sector-based Worker Center Networks

Over the last decade, as worker centers have continued to develop their work, programs, strategies, and policies, many have come together to join existing worker center networks. In 2007, national worker center networks were few and far between. They included **Enlace**,<sup>52</sup> a campaign-based network with members throughout the United States and Mexico focused on campaigns in specific sectors such as garment work, food manufacturing, and farming/fishing; and **Interfaith Worker Justice (IWJ)**,<sup>53</sup> which included a range of vibrant faith-based worker centers that focused on low-wage industries and engaged in worker rights education and campaigns against workplace abuses and wage theft.

Worker centers have been increasingly collaborating and working together to address conditions in particular places and metropolitan areas, to join forces in specific campaigns, and to develop strategies to work together in particular sectors of the low wage labor market. Worker center networks have now evolved to serve several key industries with large concentrations of low-wage and immigrant workers (see Table 1). These networks provide substantial support including assistance in organizing workers, developing a set of training protocols and programs, working to help establish guidelines on the various jobs and positions in the industry, developing an analysis of employers in the industry and trying to better understand the prospects for job growth in their labor market sectors at the local and national level. Worker center networks have been formed to serve workers in the construction, landscaping, demolition and laborer sectors; the restaurant industry; domestic workers; and the home health care sector.

Some of the key sector based networks include:

- **The Restaurant Opportunities Center (ROC)**<sup>54</sup> was originally founded after September 11, 2001 to support and organize restaurant workers displaced from the World Trade Center's "Windows of the World" restaurant. **ROC** organizes workers in several cities and offers training and workforce development services to its members. In addition, **ROC** engages in strategic research and policy analysis, workplace organizing and justice campaigns against 'low-road' restaurant companies, and the promotion of 'high-road' restaurants and business practices. **ROC** seeks improvements in working conditions and opportunities for career to ladders, better pay, and other benefits for restaurant workers.
- **The National Day Labor Organizing Network (NDLON)**<sup>55</sup> was launched in 2001 and now includes over 50 organizations. The network aims to strengthen, connect, and expand the work of member organizations to become effective and strategic in building leadership, advancing low-wage worker and immigrant rights, and developing successful models for organizing immigrant contingent/temporary workers. The construction, landscaping,

<sup>52</sup> *ENLACE* was founded in 1998 as a strategic alliance by a group of organizations working to promote and protect human and labor rights and provide better employment opportunities for low-income residents and immigrants in both the U.S. and Mexico. <http://enlaceintl.org/>

<sup>53</sup> *Interfaith Workers Justice* was founded in 1998. Its mission is "to engage the religious community in issues and campaigns to improve wage, benefits and working conditions for workers, especially low-wage workers." <http://www.iwj.org/>

<sup>54</sup> <http://rocunited.org/>

<sup>55</sup> <http://www.ndlon.org/en/>

demolition, and home repair industries are quite large and there is great variation and diversity in the types of employers, workplaces, and working conditions. NDLO has played a key role in segmenting and regularizing the bottom of the labor market and connecting it to apprenticeship opportunities and career ladders, often in collaboration with organized labor. NDLO has also been central to the development of adult education and training for workers, increased training in occupational safety and health, and the development of worker-led campaigns to improve access to jobs, improve working conditions, and increase job quality.

- **Direct Care Alliance (DCA<sup>56</sup>)** was founded in 1998 is a national non-profit dedicated to improving working conditions for direct care workers, professionalizing the industry, developing training standards, and providing other support for workers. Direct care work, the fastest-growing occupation in health care, is primarily staffed by women of color, including a large immigrant population who see it as a pathway out of welfare and poverty. DCA tackles the growing gap between the supply and demand for direct-care workers; the training needs of workers, employers, and consumers; the working conditions of direct care workers; and the policy and social barriers that impact this workforce.
- **The Domestic Workers Alliance (NDWA<sup>57</sup>)** consists of more than 17 grassroots organizations across the United States that have come together to organize domestic workers, end the exclusion of domestic workers from recognition and labor protection, and support the development of training models and the professionalization of the domestic work industry.

The sector based worker center networks are made up of organizations that are quite different with different histories, staffing patterns, resources and at different stages of development. But they share the main goals and strategies of the network, similar sets of challenges and needs supporting workers, and a common need to secure resources to support their work. The networks share information with their members and affiliates about particular programs, practices, policy campaigns and challenges that are relevant to workers in specific occupations and industries; provide opportunities for collaboration and sharing of experiences and best practices; aggregate the voice of individual organizations for broader reach and impact in research, advocacy, and policy; engage in public education and develop communication strategies to reach other stakeholders, constituencies and the public; collaborate on research projects and initiatives; provide management support and leadership development opportunities; and help acquire, pool, and manage resources attained at the network level and provide them to individual member organizations.

In addition to national networks in the construction, landscaping, demolition and laborer sectors; the restaurant industry; domestic workers; and the home health care sector there are a number of organizations operating in other low wage sectors that can lead to the emergence of new sector based national networks. Some of the key organizations working in low wage sectors of the labor market include,

- **Fast food<sup>58</sup>, Fast Food Forward** is an organization that has been organizing workers in fast food restaurants and raising visibility about low wages in the sector.

<sup>56</sup> <http://www.directcarealliance.org/>

<sup>57</sup> <http://www.domesticworkers.org/>

<sup>58</sup> <http://fastfoodforward.org/>

- **Garment work**<sup>59</sup>, The *Garment Worker Center* (GWC) is an incorporated non-profit worker rights organization founded in 2001 to organize low-wage garment workers in Southern California.
- **Retail**<sup>60</sup>, *The Retail Action Project* (RAP) is an organization of retail workers founded in 2005 as a community labor partnership between the Retail, Wholesale and Department Store Union (RWDSU, UFCW) and the Good Old Lower East Side (GOLES) a membership organization that has been supporting campaigns in the retail sector.
- **Car Wash**<sup>61</sup>, the *CLEAN Carwash Campaign* is a joint effort between CLEAN, a diverse coalition of immigrant rights, legal, and labor organizations, and the Carwash Workers Organizing Committee (CWOC) of the United Steel Workers.
- **Warehouse**<sup>62</sup>, *Warehouse Workers United* was started in 2009 in southern California by a number of community groups including CLUE-CA, CCAEJ, UCLA Labor Occupational Safety and Health Program, Council on Occupational Health and Safety, the Food Chain Workers Alliance, and National Day Labor Organizing Network to provide support to the large warehouse and logistics industry in southern California and is supported by Change to Win, a labor coalition. *Warehouse Workers for Justice* provides workshops about workplace rights, supports workers defending their rights at work, builds community support and develops policy changes focusing on warehouse and logistics workers in Illinois. WWJ is an independent workers center founded by the United Electrical Workers (UE).
- **Street Vendors**<sup>63</sup>, The *Street Vendor Project* is a membership-based project with nearly 2,000 vendor members part of the Urban Justice Center, a non-profit organization that provides legal representation and advocacy for low wage workers.
- **Laundry**<sup>64</sup>, *Laundry Workers Center United* was started in 2011 to support strategies that improve the living and working conditions of workers in the laundry industry.
- **Nail and Beauty Salons**<sup>65</sup>, the *National Healthy Nail and Beauty Salon Alliance* was started in 2007 to develop strategies, programs and initiatives to increase the health, safety, and rights of salon workers. A key focus of activity was reducing the exposure of workers to toxic chemicals. The Alliance is collaboration between The California Healthy Nail Salon Collaborative and Women’s Voices for the Earth.
- **Taxi workers**<sup>66</sup>, the *National Taxi Workers Alliance* was started in 2012 to support taxi workers by focusing on protection on the job; health and wellness issues; due process rights in industry courts; and for better earnings and working conditions.

Emerging organizations have established a sector based approach focused on developing services and programs for workers, amassing an understanding the uniqueness of their industries, recognizing key actors, stakeholders, and potential allies, identifying communications and consumer education approaches, developing targets and solidarity for specific actions and campaigns, and coming together as groups and organizations to form broader networks of organizations that can expand, intensify, and amplify the depth of the work, the reach of the strategies and their impact on low wage workers and labor markets.

<sup>59</sup> <http://garmentworkercenter.org/>

<sup>60</sup> <http://retailactionproject.org/>

<sup>61</sup> <http://www.washnewyork.org/> and <http://cleancarwashla.org/the-clean-carwash-campaign>

<sup>62</sup> <http://www.warehouseworkersunited.org/> and <http://www.warehouseworker.org/>

<sup>63</sup> <http://streetvendor.org/>

<sup>64</sup> <http://lwcu.org/>

<sup>65</sup> <http://nailsalonalliance.org/>

<sup>66</sup> <https://nytwa.org/>

A recent development in the worker center field has been the development of two new types of networks: a) production and consumption chain based networks such as the Food Chain Workers Alliance<sup>67</sup> and b) emerging networks of worker center networks like the United Worker Congress<sup>68</sup>.

The **Food Chain Workers Alliance** (FCWA) was started in 2009 as a collaboration<sup>69</sup> between Brandworkers International<sup>70</sup>, the Center for New Community<sup>71</sup>, Cincinnati Interfaith Worker Justice Center<sup>72</sup>, the Coalition of Immokalee Workers (CIW)<sup>73</sup>, el Comité de Apoyo a los Trabajadores Agrícolas (CATA)<sup>74</sup>, Fair World Project<sup>75</sup>, Farmworker Association of Florida<sup>76</sup>, the International Labor Rights Forum<sup>77</sup>, Just Harvest USA<sup>78</sup>, Mississippi Worker Center for Human Rights<sup>79</sup>, the Northwest Arkansas Workers' Justice Center (NWAJWC)<sup>80</sup>, ROC United<sup>81</sup>, Rural and Migrant Ministry<sup>82</sup>, Street Vendor Project<sup>83</sup>, Teamsters Joint Council 7, UNITE-HERE Food Service Division<sup>84</sup>, UE Research and Education Fund<sup>85</sup>, Warehouse Workers United<sup>86</sup>, and the United Food and Commercial Workers (Local 770<sup>87</sup> and Local 1500<sup>88</sup>) to bring together organizations that support workers along all of the segments of the food chain from the agricultural workers that pick the food, through goods production, transportation and movement, warehouse and logistics and all the way up to the restaurants and street vendors that make the food available to consumers. The FCWA represents the first attempt to create a national multi-stakeholder based network focused on a broadly defined food industry and attempting to identify and organize workers along all of the steps in the production and consumption chain. With increasing public attention to food and safety issues, food quality, food deserts and the availability of fresh fruit and vegetables in low income communities, interest in organic foods, locally sourced foods and growing interest in the food sector more generally, the FCWA has an opportunity to bring together workers and consumers around strategies and campaigns that improve the wages and working conditions of food chain workers and that minimize their exposure to hazardous work environments and violations of wage, hour, safety and health laws and that could also potentially put at risk the health of consumers.

The **United Worker Congress** (UWC)<sup>89</sup> is a broad coalition of organizations and networks<sup>90</sup> that brings together workers in a range of labor market sectors that are marginalized

<sup>67</sup> <http://foodchainworkers.org/>

<sup>68</sup> <http://www.excludedworkers.org/>

<sup>69</sup> For an updated list of members see [http://foodchainworkers.org/?page\\_id=7](http://foodchainworkers.org/?page_id=7)

<sup>70</sup> <http://www.brandworkers.org/>

<sup>71</sup> <http://newcomm.org/>

<sup>72</sup> <http://www.cworkers.org/>

<sup>73</sup> <http://ciw-online.org/>

<sup>74</sup> <http://www.cata-farmworkers.org/>

<sup>75</sup> <http://fairworldproject.org/>

<sup>76</sup> <http://floridafarmworkers.org/>

<sup>77</sup> <http://laborrights.org/>

<sup>78</sup> <http://justharvestusa.org/>

<sup>79</sup> <http://www.msworkers.org/>

<sup>80</sup> <http://www.nwawjc.org/>

<sup>81</sup> <http://rocunited.org/>

<sup>82</sup> <http://ruralmigrantministry.org/>

<sup>83</sup> <http://streetvendor.org/>

<sup>84</sup> <http://unitehere.org/fs/>

<sup>85</sup> <http://www.ueref.org/>

<sup>86</sup> <http://www.warehouseworkersunited.org/>

<sup>87</sup> <http://www.ufcw770.org/>

<sup>88</sup> <http://www.ufcw1500.org/>

<sup>89</sup> <http://www.excludedworkers.org/>

due to exclusions from labor laws or because of their race, gender or other particular condition (residence, criminal record, or migrations status). The United Workers Congress (UWC) is made up of organizations working in formally excluded sectors like farmworkers (represented by Coalition of Immokalee Workers [CIW] and Comite de Apoyo a los Trabajadores Agricolas [CATA]), domestic workers (National Domestic Workers Alliance [NDWA] and Direct Care Alliance [DCA]), day laborers (National Day Laborer Organizing Network [NDLON]) and taxi workers (New York Taxi Workers Alliance<sup>91</sup>, Taxi Workers Alliance of PA<sup>92</sup> and LA Taxi Workers Alliance<sup>93</sup>) together with groups that support tipped workers in restaurant (Restaurant Opportunities Center United [ROC United]) and other industries, southern workers in right to work states (National Jobs with Justice [Jw]<sup>94</sup>), Mississippi Workers Center for Human Rights, and Black Workers for Justice<sup>95</sup>), immigrant guest workers (National Guestworkers Alliance<sup>96</sup>), workfare workers (Community Voices Heard [CVH]<sup>97</sup> and SF Living Wage Coalition<sup>98</sup>) and formerly incarcerated workers (All of Us or None<sup>99</sup>).

As Goldberg and Jackson have argued: “in response to a changing economy and changing working conditions, excluded workers are now leading transformative campaigns and building the foundation for a new workers movement.”<sup>100</sup> The UWC has focused on three broad types of activities: a) developing the network and identifying campaigns where forces can be combined for added strength and impact; b) developing and managing agreements, partnerships and alliances with organized labor unions and federations; and c) convening to analyze the joint challenges faced by workers in these sectors of the economy; develop strategies, campaigns, communication tools and policies to address the challenges; and discuss the adequacy of current labor frameworks in addressing the needs and challenges faced by low wage workers.

## **The Role of Worker Centers in Protecting Labor Rights and Improving Job Quality**

Worker centers and worker center networks engage in a broad range of activities including labor market initiatives that include: worker based programs, services, and campaigns; labor market intermediation activities; strategies to address the demand or employer side of the labor market; and a range of consumer education and engagement campaigns and initiatives. Worker-based activities focus on providing direct services to workers while demand or employer-based activities and approaches seek to develop strategies to improve job quality by focusing more directly on the jobs themselves and working with employers to improve working conditions, pay, and benefits. Consumer education and engagement campaigns mainly involve

<sup>90</sup> <http://www.excludedworkers.org/members>

<sup>91</sup> <https://nytwa.org/>

<sup>92</sup> <http://www.twapa.org/>

<sup>93</sup> <http://latwa.org/>

<sup>94</sup> <http://www.jwj.org/>

<sup>95</sup> <http://blackworkersforjustice.org/>

<sup>96</sup> <http://www.guestworkeralliance.org/>

<sup>97</sup> <http://www.cvhaction.org/>

<sup>98</sup> <http://www.livingwage-sf.org/>

<sup>99</sup> <http://www.prisonerswithchildren.org/our-projects/all-of-us-or-none/>

<sup>100</sup> Goldberg, Harmony. Jackson, Randy. 2011. “The Excluded Workers Congress. Reimagining the Right to Organize” *New Labor Forum* 20 (3): 54-59. Quote is from P. 57.



educating consumers about the characteristics of the workers and the working conditions in the jobs, highlighting the labor practices of particular employers, and/or seeking to direct consumer demand towards employers that provide higher pay, better working conditions and benefits to their employees. Worker centers and networks situate themselves as labor market intermediaries managing a number of initiatives and programs with workers (supply side) and developing strategies to better understand and work with employers (demand side). In addition, through research, policy analysis and development, network building, public education and communications campaigns they bring attention to the challenges faced by marginalized workers and develop strategies to address those challenges.

### **Worker-Based Activities of Worker Centers**

Worker centers engage in a number of worker organizing, constituency building and membership building activities that connect them in organic ways to their members, constituencies, and communities. Most worker centers have active worker committees that meet regularly and develop strategies to build and maintain their membership. Over time, worker centers have developed a repertoire of worker-based activities that keep them connected to their membership including:

- Strategies to enhance and increase member recruitment.
- Support for identifying specific training needs of workers and best approaches and ways to deliver those training services to marginalized workers.
- Development of strategies and programs to provide adult education, human capital building, and training services and programs for workers including the use of popular education, contextual language learning, literacy, and related pedagogical tools and materials.
- Training in occupational health and safety including support for training seminars at the Occupational Health and Safety Administration (OSHA) on proper use of work equipment, safety procedures, how to identify potential safety hazards, and workplace health issues.
- Building opportunities for worker centers to acquire federal government resources for training.
- Developing training programs and opportunities for workers to connect to career ladders in a range of sectors.
- Labor market intermediation and support in job placement.
- Support for research and other activities that have investigated the challenges facing marginalized workers in accessing existing career ladders and have included reports with path breaking research on day laborers, restaurant workers, domestic workers, and other low wage sectors.
- Strategies to improve wage enforcement and worker rights including the development of relations with state departments of labor investigative and enforcement teams.
- Leader identification and training, leadership development, and organizational change management to support the development of the next generation of organization leaders, organizers, advocates and service providers.
- Strategies to understand the key industries where workers concentrate and activities to engage and better understand the needs of employers in these sectors.
- Connections to organized labor specialized training providers and community colleges to develop connections and opportunities for workers associated with worker centers to participate in training and the education opportunities offered by these institutions.

## Employer-Based Activities and Work on Job Quality

In addition to the worker based activities, worker center networks have developed a range of strategies designed to work on the demand side of the labor market and with employers in order to increase access to training, improve job quality, and better the livelihoods of low-wage workers. Many of the worker center networks have been developing “high-road” policies<sup>101</sup> for their industries. The development of these strategies is complex and varies between the construction sector, restaurant industry, home care, and other industries. There is a need not only to know more about what the high road is, but also to help workers and employers distinguish between high-road, medium-road, and low-road firms. To do this, workers, employers, and customers must be educated about the criteria and data that are used to determine, and potentially certify, the employers and establishments that maintain high-road practices and identify those that do not. There is also a need to know more about the internal (or worker-driven) motivations, such as higher worker productivity or better customer service, versus external (or customer/market) driven motivations for adopting and operating in the high road.

Some of the strategies worker centers have started to develop to focus on employers and improve working conditions and job quality include:

- Understanding and articulating the needs of employers particularly around labor needs and management of workers.
- Developing training protocols and curriculum in particular industries and workplaces.
- Supporting the identification and development of career ladders within and across firms
- Support for training and education in occupational safety and health.
- Support for the identification of best employer practices with workers and work promoting high road employers.
- Human resource management, labor procurement, and the establishment of promotion regimes in firms.

The Restaurant Opportunities Center (ROC) has been one of the most innovative in terms of the complexity and sophistication of their employer-based strategies and using both aggressive militant tactics and collaborative approaches.<sup>102</sup> ROC’s national reputation was built after close to 13 aggressive public campaigns against high end restaurants that yielded approximately \$7 million dollars in settlements and changes in the practices of those restaurants.<sup>103</sup> The targets were selected after discussions with workers revealed that many employers would routinely break all aspects of labor law, repeatedly abused workers, and were underbidding or unfairly competing with other businesses by cheating and abusing their workers. ROC members argued that competition in the industry should be on the basis of quality product and quality service not

<sup>101</sup> “High-road” employers are considered those that pay living wages, provide benefits (such as health insurance, paid sick days, family leave and others) and provide training and upward mobility opportunities for their workers. Bernhardt, Annette, Heather Boushey, Laura Dresser, and Chris Tilly. 2008. *The gloves-off economy: Workplace standards at the bottom of America’s labor market*. Ithaca, NY: ILR Press

<sup>102</sup> Sen, Rinku and Fekkak Mamdouh. 2008. *The Accidental American*. San Francisco: Berrett-Koehler Publishers.

<sup>103</sup> <http://rocunited.org/about-us/our-history/>

based on the ability of employers to squeeze profits from their lowest paid workers by breaking wage and hour or occupational safety and health laws and regulations<sup>104</sup>.

While continuing the more militant campaigns, ROC has also developed a “high-road strategy” with employers includes a number of elements that other groups, organizations and sectors have been examining to see if they can be replicated in other industries. The first element of the strategy includes the identification of the best workplace practices from the perspective of workers. The second element is exploring the conditions under which those practices can be put in place in other workplaces. The third element involves improving worker voice and input in the workplace by distributing the *Restaurant Owners’ Guide* to every restaurant that gets a license to operate educating the owners of their responsibilities. The guide includes information on all relevant laws, worker rights, and best practices in the industry from a health and safety perspective.

ROC’s strategy has been to collaborate with workers and high-road employers to educate other workers, employers, and consumers on best practices in the industry. ROC also advocates directing customer demand and support to places that treat their workers properly and increasing the penalties that can be levied against low-road and other employers that routinely violate health, safety, wage/hour and worker rights and laws. ROC has worked with a network of high-road employers and advocates to encourage the development of the high road in the industry and to increase employer education on the potential for adopting high road practices. The use of collaborative approaches has charted a new model of immigrant worker organizing with implications for other low wage sectors and industries and has raised questions about the balance that is needed between incentives (supports and subsidies) and penalties (enforcement) in order to improve working conditions and reduce the extent and rate of labor violations that is endemic in many in low wage sectors.<sup>105</sup>

### **Worker Centers, Worker Center Networks and Strategies for Improving Conditions in the Low Wage Labor Market**

Worker center networks and organizations identify the main challenges faced by low wage workers and connect them to needed social services and programs while working to improve the quality of jobs in low-income communities<sup>106</sup>. Most worker centers feature collaborations between workers and social service professionals to identify programs and approaches that improve working conditions and job quality and that help secure access to training opportunities for workers.<sup>107</sup> Worker centers and their networks are unique institutions in that they focus on immigrant, low-wage and other vulnerable workers and are involved in direct labor market functions related to employment, training, or worker education in the most marginalized sectors of the US labor market. Worker Centers are also involved in advocacy, research, and policy development while helping to build and manage relations with other

<sup>104</sup> Jayaraman, Saru. 2013. *Behind the Kitchen Door*. Ithaca, NY: Cornell University Press.

<sup>105</sup> Bernhardt, Annette, Ruth Milkman, Nik Theodore, Douglas Heckathorn, Mirabai Auer, James DeFilippis, Ana Luz Gonzalez, Victor Narro, Jason Perelshteyn, Diana Polson, and Michael Spiller. 2009. *Broken laws, unprotected workers: Violations of employment and labor laws in American cities*. New York, NY: National Employment Law Project.

<sup>106</sup> Ibid.

<sup>107</sup> Cordero-Guzmán, Héctor. 2005. Community-based organisations and migration in New York City. *Journal of Ethnic and Migration Studies* 31 (5): 889-909.

stakeholders in the labor market including educational institutions, specialized training providers, and organized labor<sup>108</sup>

Worker centers have been engaging with workers, employers, customers and other community based organizations and--through organizational management, development and network building activities--have been able to develop the kind of infra-structure and institutional relationships that have re-shaped the field of worker's rights. In addition they have built relationships with organized labor and education institutions, and have enhanced their ability to influence policy makers. But, improving conditions in the low wage labor market also requires an adequate regulatory framework and the capacity to enforce it.

In their assessment of the contemporary FLSA framework for addressing labor standards in the low wage labor market, Janice Fine and Jennifer Gordon argue that: "workers organizations as well as firms [need to] to partner with government to detect violators, relying on the incentives of unions and high wage enterprises to patrol their industries and labor markets for unfair competition."<sup>109</sup> They propose a strong system of partnership and collaborations between worker centers and labor enforcement agencies focusing on outreach, detection, investigation, enforcement, and deterrence. Fine and Gordon recognize that in order for such a labor enforcement system to be viable and work, there need to be effective community based strategies to support low wage workers and a vibrant set of groups, organizations and networks that can support the work.

Low wage worker organizations have made a positive difference by identifying key sectors in the low wage labor market where there are large numbers of vulnerable workers and labor violations; by organizing workers; by developing and managing successful campaigns; by providing access to legal remedies for violations; and by developing strategies to improve pay, working conditions and other aspects of job quality in low wage occupations.

However, there are a number of challenges due to the inherent difficulties of organizing workers in the current labor market, working with immigrant and vulnerable populations, and engaging well organized and challenging employer adversaries seeking to maximize their wealth and power and eager to retain control over workers and the labor market<sup>110</sup>. The first challenge includes instability in funding levels and sources for workers centers. While the centers have access to modest foundation and labor resources, some fees for services, modest individual donations, and some membership dues they are more limited than other non-profits in receiving support from government, corporations, and high net-worth individuals. Second, while worker centers have been able to grow steadily over time, there are questions about growing membership, the scaling of activities to reach more workers, and the level of penetration or density of workers centers into the labor forces in key sectors. The geographic concentration of worker centers in metropolitan areas means that workers in vast regions of the country do not have access to their activities. In order to increase their scope and reach, worker centers are going to have to develop new outreach and service strategies and that can often change the character and operations of closer knit groups. Third, worker centers are coming under

<sup>108</sup> Fine, Janice. 2006. *Workers Center: Organizing Communities at the Edge of the Dream*. Ithaca, NY: Cornell University Press.

<sup>109</sup> Fine, Janice and Jennifer Gordon. 2010. "Strengthening Labor Standards Enforcement through Partnerships with Workers' Organizations" *Politics and Society* 38 (4): 552-585. Quote in page 553.

<sup>110</sup> Greenhouse, Steven. 2014. "As Worker Advocacy Groups Gain Momentum Businesses Fight Back." *New York Times*, January 17, 2014 at <http://www.nytimes.com/2014/01/17/business/as-worker-advocacy-groups-gain-momentum-businesses-fight-back.html>

increasing attack by employer associations, lobbyist groups and their allies in government<sup>111</sup>. This means that worker centers need to be increasingly alert to dirty tricks, public relations attack tactics, and politically motivated harassment. This requires focus and can take away time, energy and resources from organizations that are often over stretched and under-resourced.

The organizations that are part of the growing low wage worker infrastructure, including worker centers and worker center networks, have been developing a comprehensive framework to understand exclusion\inclusion from the reach and promise of labor laws and labor protections. Worker Centers have also developed strategies to help low wage workers in the most marginalized sectors of the economy to come out of the shadows and truly be welcomed as full and equal members of the community. The most profound and lasting social change in the United States happens when organized individuals are able to shed light into difficult conditions and engage in collective actions that challenge the nation to live up to its values and beliefs in fairness and justice and in this way make their demands of their government real.

<sup>111</sup> Manheim, Jarol. 2013. *The Emerging Role of Worker Centers in Union Organization: A Strategic Assessment*. Washington, DC: US Chamber of Commerce at [http://www.workforcefreedom.com/sites/default/files/WFI\\_ManheimStudy%2011-21-2013.pdf](http://www.workforcefreedom.com/sites/default/files/WFI_ManheimStudy%2011-21-2013.pdf)

**Table 1 Low Wage Occupations in the US Labor Market (May 2012)<sup>112</sup>**

<u>Rank</u>	<u>Occupational Title</u>	<u>Total Employment</u>	<u>Hourly Mean</u>	<u>Hourly Median</u>	<u>Annual Mean</u>	<u>Annual Median</u>
	<b>Food Workers</b>	<b>11,352,870</b>	<b>\$9.97</b>	<b>\$9.26</b>	<b>\$20,732</b>	<b>\$19,256</b>
1	Food and Beverage Serving Workers Other Food Prep & Serving Related	6,485,990	\$9.54	\$8.88	\$19,840	\$18,460
2	Workers	1,275,900	\$9.36	\$8.91	\$19,470	\$18,530
8	Cooks and Food Preparation Workers	2,870,010	\$10.52	\$9.66	\$21,890	\$20,090
19	Food Processing Workers	720,970	\$12.68	\$11.72	\$26,380	\$24,380
	<b>Agriculture &amp; Animal Care</b>	<b>527,070</b>	<b>\$10.69</b>	<b>\$9.28</b>	<b>\$22,226</b>	<b>\$19,311</b>
4	Agricultural Workers	365,760	\$10.54	\$9.14	\$21,920	\$19,020
7	Animal Care and Service Workers	161,310	\$11.02	\$9.60	\$22,920	\$19,970
	<b>Personal &amp; Household Services</b>	<b>3,199,040</b>	<b>\$11.07</b>	<b>\$9.78</b>	<b>\$23,023</b>	<b>\$20,333</b>
9	Other Personal Care and Service Workers	2,304,120	\$11.29	\$9.92	\$23,490	\$20,630
5	Maids and Housekeeping Cleaners	894,920	\$10.49	\$9.41	\$21,820	\$19,570
	<b>Retail and Protective Services</b>	<b>9,744,410</b>	<b>\$11.64</b>	<b>\$9.86</b>	<b>\$24,218</b>	<b>\$20,521</b>
6	Retail Sales Workers	8,326,900	\$11.35	\$9.56	\$23,610	\$19,890
17	Other Protective Service Workers	1,417,510	\$13.36	\$11.65	\$27,790	\$24,230
	<b>Entertainment &amp; Related Services</b>	<b>1,110,880</b>	<b>\$11.50</b>	<b>\$9.95</b>	<b>\$23,920</b>	<b>\$20,707</b>
3	Entertainment Attendants & Related Work	530,880	\$10.23	\$9.06	\$21,280	\$18,850
12	Personal Appearance Workers Baggage Porters, Bellhops, and Concierges	478,160	\$12.68	\$10.67	\$26,370	\$22,190
14		66,360	\$12.27	\$11.00	\$25,510	\$22,880
20	Tour and Travel Guides	35,480	\$13.19	\$11.74	\$27,440	\$24,430
	<b>Health Care Aides</b>	<b>2,391,750</b>	<b>\$11.69</b>			
15	Nursing, Psychiatric, and Home Health Aides	2,391,750	\$11.69	\$11.07	\$24,320	\$23,030
	<b>Construction, Maintenance, &amp; Production</b>	<b>8,021,940</b>	<b>\$12.69</b>	<b>\$11.29</b>	<b>\$26,397</b>	<b>\$23,484</b>
13	Building Cleaning and Pest Control Workers	2,172,290	\$12.06	\$10.85	\$25,086	\$22,571
10	Other Transportation Workers Textile, Apparel, and Furnishings Workers	329,100	\$13.02	\$10.38	\$27,090	\$21,600
11		575,080	\$11.62	\$10.58	\$24,170	\$22,000
16	Grounds Maintenance Workers	909,350	\$12.72	\$11.53	\$26,460	\$23,970
18	Material Moving Workers	4,036,120	\$13.15	\$11.65	\$27,350	\$24,230
	<b>Total Number of Low Wage Workers</b>	<b>36,347,960</b>				

<sup>112</sup> The U.S. Department of Labor's (DOL) Standard Occupational Categories (SOC) includes 23 major occupation groups that are further subdivided into 96 minor groups (<http://www.bls.gov/soc/>). This table uses data from the 96 minor groups with the exception of Maid and Housekeeping Cleaners that are included in the Building Cleaning and Pest control workers in the original data but in this table they are excluded from that category and reported separately. The table includes the 20 lowest paying occupations based on median hourly earnings arranged by broad sector and ranked from the lowest paid occupations to the higher paid ones. For the data see [http://www.bls.gov/oes/oes\\_dl.htm](http://www.bls.gov/oes/oes_dl.htm).



# Minimum Wages and the Distribution of Family Incomes

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## Abstract

I use data from the March Current Population Survey between 1990 and 2012 to evaluate the effect of minimum wages on the distribution of family incomes for non-elderly individuals. I find robust evidence that higher minimum wages moderately reduce the share of individuals with incomes below 50, 75 and 100 percent of the federal poverty line. The elasticity of the poverty rate with respect to the minimum wage ranges between -0.12 and -0.37 across specifications with alternative forms of time-varying controls and lagged effects; most of these estimates are statistically significant at conventional levels. For my preferred (most saturated) specification, the poverty rate elasticity is -0.24, and rises in magnitude to -0.36 when accounting for lags. I also use recentered influence function regressions to estimate unconditional quantile partial effects of minimum wages on family incomes. The estimated minimum wage elasticities are sizable for the bottom quantiles of the equivalized family income distribution. The clearest effects are found at the 10th and 15th quantiles, where estimates from most specifications are statistically significant; minimum wage elasticities for these two family income quantiles range between 0.10 and 0.43 depending on control sets and lags. I also show that the canonical two-way fixed effects model—used most often in the literature—insufficiently accounts for the spatial heterogeneity in minimum wage policies, and fails a number of key falsification tests. Accounting for time-varying regional effects, and state-specific recession effects both suggest a greater impact of the policy on family incomes and poverty, while the addition of state-specific trends does not appear to substantially alter the estimates. I also provide a quantitative summary of the literature, bringing together nearly all existing elasticities of the poverty rate with respect to minimum wages from 12 different papers. The range of the estimates in this paper is broadly consistent with most existing evidence, including for some key subgroups, but previous studies often suffer from limitations including insufficiently long sample periods and inadequate controls for state-level heterogeneity, which tend to produce imprecise and erratic results.

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# 1 Introduction

At least since Gramlich (1976), economists have recognized that the ability of minimum wage policy to aid lower-income families depends on the joint distribution of wage gains, potential job losses, and other sources of family income. However, while there is a large and active literature on the effects of minimum wages on employment, there are relatively fewer studies that empirically estimate the impact of the policy on family incomes. Compounding the problem, the existing papers suffer from a number of key shortcomings including small samples, the use of periods with limited minimum wage variation, and insufficient controls for state-level heterogeneity, all of which tend to produce somewhat erratic and imprecise estimates. Furthermore, these papers have evaluated the impact of the policy for disjoint sets of demographic groups and have focused attention on a limited set of outcomes. As a result, it is somewhat difficult to interpret the existing evidence on the topic and to assess the reliability of the findings.

In this paper, I use individual-level data from the March Current Population Survey (CPS) between 1990 and 2012 to estimate the effects of U.S. minimum wage policies on the distribution of family incomes for the non-elderly population.<sup>1</sup> I consider a wide range of distributional measures and demographic groups, and I utilize a rich set of controls for state-level time-varying heterogeneity. Overall, there is robust evidence that minimum wage increases lead to moderate increases in incomes at the lower tail of the family income distribution. For the poverty rate—the proportion of individuals under the federal poverty threshold—the minimum wage elasticity ranges between -0.12 and -0.30 across eight specifications, and most estimates are statistically distinguishable from zero at conventional levels.<sup>2</sup> The poverty-reducing effects generally extend between 50 and 125 percent of the federal poverty threshold, with the largest proportionate reductions occurring around 75 percent of the official threshold (elasticities ranging between -0.15 and -0.45). Accounting for the spatial heterogeneity in minimum wage policies suggests larger anti-poverty effects. The largest impact on the estimates comes from accounting for time-varying regional effects—which limits the identifying variation to within each of the nine Census divisions. The canonical two-way (state and year) fixed effects model—most commonly used in the literature—produces the smallest estimated magnitudes; but this model also fails some key falsification tests by implausibly suggesting income losses in the middle of the income distribution, as well as losses at the bottom prior to the minimum wage change. The most saturated model—with a separate set of year effects for each of the nine Census divisions, state specific recession controls, and state-specific linear trends—performs the best in terms of falsification tests, and estimates a poverty rate elasticity of -0.24. Allowing for lagged effects produces somewhat larger poverty rate elasticities ranging between -0.13 and -0.37, with a

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<sup>1</sup>In this paper, when I refer to the 1990-2012 period, I am referring to the survey years for the March CPS. Note, however, that respondents in March 2012 CPS survey are asked about their income during the year 2011.

<sup>2</sup>All original results in this paper are for the non-elderly population; so when I refer to “the poverty rate,” I am referring to the poverty rate among those under 65 years of age. Also, as a matter of terminology, in this paper virtually all elasticities are elasticities with respect to the minimum wage. For brevity, I will sometimes refer to “the elasticity of the poverty rate with respect to the minimum wage” as either “the minimum wage elasticity for the poverty rate” or simply “the poverty rate elasticity.” The same is true for elasticities of other outcomes with respect to the minimum wage, such as family income quantiles, the proportion under one-half poverty line, etc.

preferred estimate of -0.36. Both the contemporaneous and lagged poverty rate elasticities from the preferred set of controls are statistically significant at conventional levels, as are the estimates from most of the other specifications. The finding that the poverty rate elasticities are larger in magnitude when controls for state-level heterogeneity are included is consistent with previous work on employment effects of minimum wages. As shown in Allegretto, Dube, Reich and Zipperer (2013), better controls for such heterogeneity tends to produce estimates of employment elasticities that are small in magnitude and often close to zero. These findings are mutually consistent with an explanation that higher minimum wages tend to be more prevalent at times and places with (relatively) worse economic outcomes.

I find evidence of poverty reduction for five demographic subgroups that have been studied in the literature. For the preferred specification, the poverty rate elasticities are somewhat larger in magnitude for black or Latino individuals (-0.4), and for children under 18 (-0.31). They are somewhat smaller for single mothers (-0.16) and for younger adults 21-44 years of age (-0.20). However, the elasticities are larger in magnitude for 21-44 year olds with no more than a high school degree (-0.27). The somewhat greater poverty reduction from minimum wage increases among disadvantaged racial minorities and those without college education is shown more clearly in this paper than in the existing literature, which provides somewhat contradictory or imprecise evidence on this matter. Finally, the elasticities are broadly similar in the 1990s (-0.29) and 2000s (-0.23), though the estimates are, as expected, less precise for the sub-samples.

Turning to alternative definitions of poverty, higher minimum wages also reduce the poverty gap and squared poverty gap, which measure the depth and severity of poverty. Using the preferred (most saturated) specification, the minimum wage elasticities for these two measures are -0.32 (poverty gap) and -0.96 (squared poverty gap), respectively. The large magnitude of the squared poverty gap elasticity is consistent with my finding that minimum wage increases lead to sizable reductions in the proportion with incomes less than one-half the poverty line: the squared gap measure is particularly sensitive to movements in very low incomes. Besides the implicit equivalence scale used by the Census Bureau for official poverty calculations, I also consider the square-root scale that is used in recent studies making international comparisons (e.g., OECD 2011, OECD 2008). For the preferred specification, the poverty rate elasticity estimate using the square root scale (-0.33) is somewhat larger than the baseline estimate (-0.24).

An additional contribution of the paper is to apply the recentered influence function (RIF) regression approach of Firpo, Fortin and Lemieux (2009) to estimate unconditional quantile partial effects (UQPEs) of minimum wages on the equivalized family income distribution. The UQPE measures how a unit increase in the minimum wage affects, say, the 10th quantile of the unconditional (or marginal) distribution of family incomes—after controlling for other covariates such as family and individual demographics, unemployment rate, state and time effects, etc. It is useful to contrast the UQPE with estimates from the more familiar (conditional) quantile regression. The quantile regression provides us with an estimate of the the impact of minimum wages on, say, the 10th conditional quantile of family incomes. This tells us how the policy affects those with unusually low

income within their demographic group, e.g., a college graduate with an income that is low *relative* to others in her educational category. However, we are typically more interested in the effect of the policy on those with low incomes in an *absolute* (or unconditional) sense, while controlling for covariates such as education. This is exactly what UQPE measures.<sup>3</sup>

As I describe in section 3.2, there is a close link between how minimum wages affect the share of the population earning below certain income cutoffs (e.g., the poverty rate), and how they affect unconditional income quantiles. The key intuition underlying Firpo et al. (2009) is that we can invert the impact of the policy on the proportion under an income cutoff to estimate the effect of the policy on an income quantile. The RIF approach performs this inversion using a local linear approximation to the counterfactual cumulative distribution function. Estimating the RIF-UQPE essentially entails rescaling the marginal effect on the proportion above a cutoff by the probability density of the outcome at that cutoff.

I find positive effects of minimum wages on bottom quantiles of the equivalized family income distribution. The clearest impacts occur at the 10th and 15th quantiles, where estimates from most specifications are statistically significant, and the minimum wage elasticities for these family income quantiles range between 0.10 and 0.43 depending on control sets and lags. In the preferred (most saturated) specification, the family income elasticities with respect to the minimum wage are around 0.32 and 0.21 for the 10th and 15th quantiles, respectively, and diminish close to zero by the 30th quantile. When lagged effects are allowed, the long-run elasticities are slightly larger at 0.33 and 0.32 for the 10th and 15th quantiles, respectively. Overall, the evidence clearly points to moderate income gains for low income families resulting from minimum wage increases.

This paper substantially improves upon existing research on the topic of minimum wages, family income distribution and poverty. In section 2, I quantitatively assess estimates from the 12 key papers in the literature, and conclude that on balance, most of these studies point towards some poverty reducing effects from minimum wage policies. Considering nearly every extant estimate of minimum wage effect on the poverty rate, a simple “average of averages” of the 54 elasticities across 12 studies and a variety of demographic groups produces a poverty rate elasticity of -0.15; moreover, 48 of these estimates have a negative sign. Excluding the one study (i.e., Neumark et al. 2005) that, as I argue, uses a particularly unconventional and problematic methodology, the “average of averages” across the 11 other studies is -0.20. For the six of these 11 studies that actually report an estimate for overall poverty (as opposed to for narrower subgroups), the “average of averages” of poverty rate elasticities is -0.15. These averages are broadly consistent with the range of findings in this paper. However, the existing evidence is clouded by serious shortcomings in these studies: insufficient controls for state-level heterogeneity; short time periods; over-statement of precision due to improper methods of statistical inference; and the use of idiosyncratic sets of outcomes and

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<sup>3</sup>In the case of the conditional mean, the law of iterated expectations implies that in expectation, the partial effect of an independent variable is the same on both the conditional and unconditional means of the outcome. This, however, is not true for quantiles. An alternative to the UQPE approach taken here would be to integrate the conditional quantile partial effects (CQPEs) over covariates in order to estimate the effect on the marginal (i.e., unconditional) distribution of the outcome. This route is taken in Machado and Mata (2005), who integrate over covariates via simulation.

target groups. In comparison, I use 23 years of data from a period with a tremendous amount of cross-state minimum wage variation. I also account for the fact that minimum wage variation is non-random by using a rich array of time-varying controls including division-specific time effects, state linear trends, and state-specific business cycle effects. Moreover, I assess the internal validity of various specifications using a host of falsification tests including estimating effects higher up in the income-to-needs distribution, as well as analyzing leading effects in a dynamic specification. I show that the inclusion of controls for such state-level heterogeneity tends both to improve performance on falsification tests and to increase the magnitude of the estimated elasticity of the poverty rate with respect to minimum wages.

This paper also adds to a small empirical literature on estimating distributional effects of policies by providing the first estimates of minimum wages on family income quantiles controlling for covariates. Card and Krueger (1995) estimate the impact of minimum wage changes on the 10th and 50th percentiles of family earnings using state-aggregated data and no individual-level controls. The only other paper that attempts at a full distributional analysis of minimum wages (Neumark, Schweitzer and Wascher 2005) makes much more restrictive and unrealistic assumptions about the changes in the family income distribution, and produces poverty rate elasticity estimates that are inconsistent with virtually all others in the literature, including ones from the authors' own subsequent work. Autor, Manning, and Smith (2010) estimate the effect of minimum wages on the hourly wage distribution. Unlike this paper, they do not include individual-level covariates, and for the most part use state-aggregated data.<sup>4</sup> There is a handful of other papers that have estimated UQPEs of policies in a difference in difference type setting. Frandsen (2012) reports effects of unionization on unconditional earnings quantiles using a regression discontinuity design. He finds that while the average effects of unionization on earnings is small, there is a sizable reduction in earnings dispersion, with large increases for bottom quantiles and some reductions at the top. Finally, Havnes and Mogstad (2012) also use RIF regressions in a difference-in-difference setting to study the distributional impact of universal child care and find that a small mean effect masks the more sizable increases in adult earnings at the bottom quantiles. To my knowledge, the latter study is the only other application of the Firpo et al. (2009) estimator to a repeated cross-sectional setting.

The rest of the paper is structured as follows. Section 2 reviews the existing literature. In section 3, I describe the data and research design, including the RIF estimation of unconditional quantile partial effects. Section 4 presents my empirical findings on the effect of minimum wages on the proportions below various low-income cutoffs as well as on income quantiles. Section 5 concludes with a discussion of the policy implications.

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<sup>4</sup>They also estimate quantile regressions but do so without individual level covariates to avoid having to integrate the conditional quantile partial effects over the distribution of covariates.

## 2 Assessing the existing research on minimum wages, family incomes and poverty

In this section, I review the key papers on the topic of minimum wages and family income distribution based on U.S. data, and discuss their findings and limitations. My primary goal here is to provide a quantitative summary of the existing evidence, focusing on the poverty rate elasticity as the most commonly estimated distributional statistic. I begin by describing the process of selecting studies for this review. First, I only consider peer-reviewed publications since the early 1990s, i.e., the beginning of the “new economics of the minimum wage” literature. Second, I only include studies that report estimates for some statistic based on family incomes (such as poverty, quantiles, etc), and not other outcomes such as utilization of public assistance.<sup>5</sup> I review one additional paper (Neumark and Wascher 2002) that I do not include in my quantitative summary. As I explain below, their estimates on gross flows in and out of poverty do not have a clear implication for net changes in poverty. Third, studies are included only when they empirically estimate the effect of minimum wages, as opposed to simulate such effects. This selection process yields 13 studies, 12 of which are used in my quantitative summary. I note that there is also a forthcoming book by Belman and Wolfson on minimum wages, and they also provide a review of many of the same papers.<sup>6</sup> Finally, I note that seven of these 13 papers were also reviewed by Neumark and Wascher in their 2008 book, *Minimum Wages*; Dube (2011) discusses some of the shortcomings of that review.

As a way to quantify the existing evidence, Table 1 reports the key estimates from the 12 studies for which I could construct an elasticity of the poverty rate with respect to the minimum wage. When the original estimates are not reported as poverty rate elasticities, I use information in the paper to convert them (and standard errors) to that format for comparability.<sup>7</sup> To minimize the impact of subjective judgment, I have used the following guidelines for selecting estimates. (1.) I report estimates for all of the demographic groups studied in each paper; the sole exception is for workers, since minimum wages can affect who is in that group and lead to sample selection problems. (2.) When a study uses multiple econometric specifications, I include all of them in Table 1, except: (a.) the handful of estimates that did not include state and time fixed effects (or equivalent) as controls; (b.) estimates from sub-periods reported in a few of the papers, and (c.) specifications with lagged minimum wages reported in a few of the papers.<sup>8</sup> Overall, these guidelines lead me to

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<sup>5</sup>I do not include Paige, Spetz and Millar (2005) in my quantitative summary as they do not consider the impact on family incomes generally, but rather only on welfare caseload. However, I note that this study stands out methodologically in using a wide array of specifications, some of which are similar to the ones used in this paper, such as state-specific trends and state-specific business cycle controls. The authors tend to find a positive impact of minimum wages on welfare caseload, which appears to go against the tenor of my findings. However, as they point out, their estimates seem to vary based on the sample period. Moreover, since the definition of family incomes used in this paper (and in official poverty estimates) include public assistance, it is possible for both poverty to fall and welfare caseload to rise.

<sup>6</sup>I thank Belman and Wolfson for sharing their pre-publication manuscript with me. They also discuss a number of papers which consider outcomes other than functions of family incomes, something I do not pursue here.

<sup>7</sup>For simplicity, I convert the standard errors to elasticities using the same conversion factor as the point estimate.

<sup>8</sup>The omission of lagged minimum wage estimates is solely due to space consideration, and not because I do not consider them relevant. However, including these long-run elasticities reported in three of the reviewed papers do not

report 54 elasticities in Table 1, which represent either all or nearly all of the estimates of minimum wage impact on the poverty rate available in each of the papers.<sup>9</sup> Finally, besides the poverty rate, I also report estimates for some of the other distributional statistics that are reported in the papers, including elasticities for proportions earning below cutoffs other than the official poverty line, family earnings quantiles, and the squared poverty gap.

In my discussion below, I mostly use a chronological order, except for the three papers by Neumark and Wascher which I discuss together at the end. After reviewing the individual papers, I provide summaries of the poverty rate elasticities in the literature. I also discuss and compare the individual estimates for specific demographic groups when I present results from my own subgroup analysis in section 4.3.

Card and Krueger (1995) consider the short run impact of the 1990 federal minimum wage increase on the poverty rate for those 16 years or older, and regress the change in the state-level poverty rate between 1989 and 1991 on the the proportion earning below the new federal wage in 1989 (“fraction affected”). While they do not report minimum wage elasticities *per se* (reporting instead the coefficient on “fraction affected”), I calculate the implicit elasticities for the poverty rate and family earnings percentiles with respect to the minimum wage for ease of comparability.<sup>10</sup> Their bivariate specification has an implied minimum wage elasticity for the poverty rate of -0.39, but controls for employment and regional trends reduce the overall elasticity in magnitude to the range (-0.36, -0.08), and the estimates are not statistically significant at the conventional levels. They also find that the 10th percentile of the (unadjusted) family earnings distribution responds positively to the minimum wage increase, with an implied elasticity between 0.28 (bivariate) and 0.20 (with controls); these are statistically significant at conventional levels.<sup>11</sup> A major problem with this analysis is that the estimates are imprecise. This is mainly due to the very short panel structure. For example, the 95 percent confidence interval associated with the poverty rate elasticity in their most saturated model is quite wide: (-0.65, 0.49). Other limitations include the use of the “fraction affected” measure of the treatment: it is possible that there were different latent trends in poverty across low- and high-wage states. Subsequent work has mostly used as the treatment measure the log of the effective minimum wage (originally suggested in Card, Katz and Krueger 1994).

Addison and Blackburn (1999) consider teens, young adults, and junior high dropouts between

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alter the averages I provide below, or any of the conclusions drawn in this review.

<sup>9</sup>Due to space consideration, for one paper I omit two intermediate specifications that fall within the guidelines above (Addison and Blackburn 1999). These specifications did not include the unemployment rate as a control but the results were virtually identical for all three groups studied in that paper. Their exclusion also has no impact on any of the summaries I provide or conclusions I draw.

<sup>10</sup>The mean of “fraction affected” is 0.074, the minimum wage increased by 26.9% in 1990, and the average poverty rate in their sample is reported to be 10.6% during 1989-1991. Starting with a coefficient of -0.15 from a regression of “fraction affected” on the proportion under poverty, I multiply this coefficient by a conversion factor of  $\frac{0.074}{0.269}$  to obtain a minimum wage semi-elasticity for the proportion under poverty, and then I further divide by 0.135 to obtain the minimum wage elasticity for the proportion under poverty:  $-0.15 \times \frac{0.074}{0.269} \times \frac{1}{0.106} = -0.39$ . I use the same conversion factor to obtain the standard errors, and perform analogous conversions for family earnings percentiles.

<sup>11</sup>Because they are using state-aggregated data from only two periods, these results are not subject to the criticism of using standard errors that are likely understated due to intraclass or serial correlation (Bertrand Duflo Mullainathan 2004), a problem which does affect numerous other papers in the literature as described in the text.

1983-1996. Using state-year aggregated data and two-way fixed effects, they find sizable poverty rate elasticities for teens and junior high dropouts in the range of (-0.61, -0.17), with an average of -0.43. They find more modest sized estimates for young adults (an average elasticity of -0.24). Their estimates for teens and junior high dropouts are often statistically significant, but the estimates are likely less precise than reported since they do not account for serial correlation. Additionally, their teen results are somewhat sensitive to the inclusion of state trends, as shown in Table 1. Morgan and Kickham (2001) study child poverty using a two-way fixed effects model with data between 1987 and 1996, and find a poverty rate elasticity of -0.39. Their estimate is statistically significant using panel-corrected standard errors (which however may be inadequate). Stevans and Sessions (2001) consider the overall poverty rate in the 1984-1998 period; their most comparable estimate is from a two-way fixed effects model, and appears to yield an elasticity of -0.28.<sup>12</sup> Gunderson and Ziliak (2004) consider the impact of a variety of social policies on the poverty rate and the squared poverty gap using both post and pre-tax income data between 1981 and 2000. For the population overall, they find a small overall poverty rate elasticity of -0.03, with a range of -0.02 to -0.06 across demographic groups. However, they specifically control for the wage distribution, including the ratio of 80th-to-20th percentile wages. This inclusion of the inequality measures is problematic, as it could block the key channel through which minimum wages would actually reduce poverty, namely raising wages at the lower end of the wage distribution.<sup>13</sup> Additionally, while their estimates are statistically significant, their standard errors are likely overstated since they do not account for serial correlation. DeFina (2008) uses state-aggregated data from 1991-2002 and finds that minimum wages reduce child poverty in female-headed families, including those headed by someone without a college degree. The estimated poverty rate elasticities are -0.42 and -0.35, respectively; while they are statistically significant, the standard errors also do not account for serial correlation.

Burkhauser and Sabia (2007) examine the effects on state-level poverty rates for 16-64 year olds and single mothers during the 1988-2003 period using specifications with two-way fixed effects. Depending on controls, their estimates of the poverty rate elasticity range between -0.08 and -0.19 for the population overall, and between -0.07 and -0.16 for single mothers. While none of the estimates are statistically significant, the point estimates are all negative, and the confidence intervals are consistent with sizable effects.<sup>14</sup> In a follow-up study, Sabia and Burkhauser (2010) consider the 2003-2007 period and income cutoffs of 100, 125, and 150 percent of the federal poverty line for the population of 16-64 year olds, and find little effect. This study is limited by a rather short sample

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<sup>12</sup>I say “appears” because although Stevans and Sessions say they are estimating a log-log model, their Table 2 reports a “log of poverty rate” sample mean of 14.6, a “log of minimum wage” sample mean of 3.42, and a coefficient on the log minimum of -1.18. These three statistics suggest that the estimated specification was actually in levels, so that the implied elasticity is likely given by  $-1.18 \times \frac{3.42}{14.6} = -0.28$ . I note additionally that their standard errors also do not account for serial correlation.

<sup>13</sup>Another potentially problematic aspect of their methodology is the inclusion of lagged outcomes as controls along with state fixed effects; they do state in a footnote that their results are robust to various IV strategies to account for the bias. Furthermore, in contrast to other studies discussed here, Gunderson and Ziliak (2004) limit their sample to families with some positive income (not necessarily earnings).

<sup>14</sup>Moreover, their estimates’ precision is likely overstated due their use of conventional (as opposed to clustered) standard errors. Some of their estimates use a parametric serial correlation correction which may also be inadequate (see Bertrand Duflo Mullainathan 2004).

period. Since it is an update of their previous paper, it is unfortunate that they do not also report estimates using the full sample (1988-2007) instead of just considering a five year period. While their point estimate is small (-0.05), the 95 percent confidence interval is fairly wide (-0.34, 0.24).

Sabia (2008) uses individual level CPS data from 1992-2005, and a two-way fixed effects specification augmented with state-specific quadratic trends to study the effect on single mothers. He finds statistically insignificant but again mostly negative and often sizable estimates, with a poverty rate elasticity of -0.22 from his main specification; for single mothers without a high school degree, the estimate is larger in magnitude (-0.28) while still not statistically significant. Sabia and Nielsen (2013) use the SIPP between 1996-2007 and find an overall point estimate of -0.31 (without state-specific linear trends) or -0.03 (with trends). However, these are imprecise estimates, as the 95 percent confidence intervals are (-0.93, 0.30) and (-0.27, 0.22), respectively—the former set is consistent with nearly all other estimates in the literature. Their estimates also appear to be sensitive to the inclusion of state-specific trends, but again, the imprecision of the estimates makes it difficult to draw any firm conclusion. Overall, two of the four papers coauthored by Burkhauser and/or Sabia suggest small to modest negative effects, while the other two produce fairly imprecise or fragile estimates. However, the overall evidence from their papers does not actually rule out moderate sized poverty rate elasticities.

Neumark and Wascher have coauthored three papers that are of particular relevance. Neumark and Wascher (2002) consider movements in and out of poverty by forming two-year panels of families with matched March CPS data between 1986 and 1995. Because they do not directly estimate the effect of the policy on poverty rates, Table 1 does not include estimates from this paper. Their results seem to suggest that initially poor individuals are less likely to remain poor after a minimum wage increase, while the initially non-poor are slightly more likely to enter poverty. They interpret the greater churning as a negative attribute of minimum wages in creating “winners and losers.” However, there are several major problems with the paper. First, the welfare implications of their findings on flows are far from clear. For example, the greater churning might be a positive attribute if it spreads both the gain and the pain more widely, and reduces the duration of poverty spells. Second, their estimated effects on net flows into poverty (the difference between inflows and outflows) are quite imprecise, and the standard errors are likely understated as they do not account for within-state correlations. They speculate that their results suggest that there was likely no effect on the overall poverty rate, but this would have been easy to check using a regression where the dependent variable is simply an indicator for being poor.<sup>15</sup>

Neumark, Schweitzer and Wascher (2005) is the only existing paper which attempts at an analysis of the impact of minimum wages on the entire distribution of family incomes. Like Neumark and Wascher (2002), they also use two-year panels of families between 1986 and 1995. They estimate the effect of discrete minimum wage treatments on the distribution of the income-to-needs ratio, and their estimates suggest that an increase in the minimum wage actually increases the fraction

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<sup>15</sup>In general, looking at the impact of the treatment on year-to-year inflows and outflows does not tell us what its impact is on the stock. In the long run (i.e, reaching a new steady state) the effect of the treatment on the in- and outflows will have to be equal by definition, even if the stock is increased or decreased.



of the population in poverty: they report a poverty rate elasticity of +0.39. This is the only paper in the literature that I am aware of which finds such a poverty-increasing impact of the policy for the overall population, so it is important to compare its methodology to other papers on the topic as well my approach here. The authors are interested in estimating the counterfactual distribution of income-to-needs ratio for the treated state-years that experience a minimum wage increase. They implement a type of propensity score reweighting to adjust for demographic factors. Beyond this, however, there are numerous non-standard aspects of their research design. Their method does not properly account for state and year fixed effects. They “mimic” state and year fixed effects by shrinking all families’ incomes by the proportionate change in the median income in that state (pooled over years) and also by analogously shrinking the median change in that year (pooled over states).<sup>16</sup> This constitutes an assumption that state and year effects are scale shifts that proportionately shrink the entire family income distribution. In other words, they impose the assumption that various counterfactual quantiles in states are moving proportionately to the median, which is an unattractive assumption, and much more restrictive than the inclusion of state and year dummies in a regression of the poverty rate on minimum wages.<sup>17</sup> Additionally, they use an *ad hoc* adjustment in the change in densities to account for the fact that some observations have both contemporaneous and lagged increases.<sup>18</sup> These non-standard techniques raise serious questions about the study, especially since it stands out in terms of producing a sizable positive poverty rate elasticity. To my knowledge, no one, including any of the authors, has used this methodology in any previous or subsequent paper.

In contrast, Neumark and Wascher (2011) uses a more conventional approach to study the interactive effects of EITC with minimum wages over the 1997-2006 period. Although their focus is mostly on wage and employment effects, they do provide some evidence of minimum wage effects on the share of 21-44 year olds with incomes below the poverty line and one-half the poverty line. They also report these estimates for sub-groups including single females, single females with no more than a high school degree, and single black/Hispanic females with high school or lesser education. Like most of the literature, they include state and year fixed effects; they also include demographic and state-level controls similar to this paper.<sup>19</sup> Unfortunately, the authors do not report an overall minimum wage effect, and instead focus on their interaction effects with EITC. However, we can use the regression coefficients along with other information provided in that paper to back out a poverty rate elasticity with respect to the minimum wage using straightforward calculations. For the broadest group that they considered—21-44 year old family heads or individuals—their results suggest a minimum wage elasticity of -0.29 for the proportion with an income under the

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<sup>16</sup>They also report results from a specification without any time or state fixed effects at all, and the poverty rate elasticity from that specification was very similar. Since I screen on specifications to include (or attempt to include) state and time fixed effects, those estimates are not reported in Table 1.

<sup>17</sup>In this paper, my distributional analysis allows the shares under all income cutoffs to have arbitrary time-invariant differences by state and years, as well as time-varying differences by census divisions, state-specific recession years, and state-specific trends.

<sup>18</sup>Their statistical inference does not account for clustering of standard errors, which are likely understated.

<sup>19</sup>They mention that their estimates for the interaction between minimum wage and EITC, and minimum wage and kids are are robust to the inclusion of state-specific trends.

poverty line, and -0.45 for the proportion with an income less than half the poverty line (“extreme poverty”).<sup>20</sup> For a group constituting the majority of non-elderly adults (and representing many children as well), the evidence from Neumark and Wascher (2011) suggests that minimum wages have a moderate-sized impact in reducing poverty and extreme poverty. These results seem to be qualitatively different from the findings in Neumark et al. (2005), and much more similar to rest of the literature. I also construct minimum wage elasticities for subgroups using estimates from Neumark and Wascher (2011), reported in Table 1. While there is not an indication of poverty reduction for single females or single mothers overall (elasticities range between 0.00 and 0.08), there is an indication of reduction in extreme poverty. There is also evidence of poverty reduction for single females and single mothers who are black/Hispanic, or without college education (elasticities range from -0.19 to -0.29).

To take stock, the results in this literature are varied and sometimes appear to be inconsistent with each other. But is it possible to filter out some of the noise and actually obtain a signal? First, I note that across these 12 studies, nearly all (48) of the 54 estimates of the poverty rate elasticity are negative in sign. Indeed, only one study by Neumark et al. (2005) suggests that minimum wages actually increase the overall poverty rate. Moreover, this study uses an unconventional methodology that is both different from all other studies, and is also problematic.

Second, if we take an “average of averages” of the poverty rate elasticities for the overall population across the seven studies that provide such an estimate so that (1) each study is weighted equally, and (2) within each study, all specifications reported in Table 1 are weighted equally as well, we obtain an average poverty rate elasticity of -0.07.<sup>21</sup> However, excluding Neumark et al. (2005), the “average of averages” of the poverty rate elasticities is -0.15. After excluding the one study that uses a highly unconventional technique, the existing evidence points towards a modest impact on the overall poverty rate.

Besides these seven studies, five additional studies reviewed here provide estimates for subsets of the population. If we take an “average of averages” of the poverty rate elasticities across all 12 studies, while (1) weighting each study equally, and (2) weighting each specification and group

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<sup>20</sup>There are four minimum wage related variables included in their regression:  $MW$ ,  $MW \times kids$ ,  $MW \times EITC$ ,  $MW \times EITC \times kids$ . However, since both  $MW$  and  $EITC$  are demeaned, we can interpret the coefficients on  $MW$  and  $MW \times kids$  as the average effects of minimum wages on adults without and with kids, respectively, evaluated at the sample average of state EITC rates. Therefore, we can ignore the  $EITC$  interactions if we want to know the average impact of  $MW$  on the poverty rate. As shown in their Table 6a, for the broadest group considered in the paper (21-44 year old family head or individuals), the  $MW$  coefficient (semi-elasticity) is -0.07 for the poverty rate (and statistically significant at the 5 percent level). For the adults with kids the relevant semi-elasticity for the poverty rate is the sum of the coefficients on  $MW$  and  $MW \times kids$ , and this is -0.04. From Table 1c, we know that 50 percent of this 21-44 year old family heads or individuals have kids, so the average semi-elasticity for the poverty rate is  $0.5 \times (-0.07 - 0.04) = -0.055$ . Again from their Table 1c, the proportion of 21-44 year olds under the poverty level is 0.19, so this translates into a poverty rate elasticity of  $\frac{-0.055}{0.19} = -0.29$  for this demographic group. Analogous calculations were performed for sub-groups and for the proportion under one-half the poverty line. Because the implied elasticities involve linear combinations of coefficients, we unfortunately need more information than is reported in the paper to construct the implied standard errors.

<sup>21</sup>These seven studies are: Card and Krueger (1995), Stevans and Sessions (2001), Gunderson and Ziliak (2004), Neumark, Schweitzer, and Wascher (2005), Burkhauser and Sabia (2007), Sabia and Burkhauser (2010), and Sabia and Nielsen (2013). In the two studies authored by Burkhauser and Sabia, the overall poverty measure excludes those under 16 or over 64; Card and Krueger also exclude those under 16.

within study equally as well, we also obtain an elasticity of -0.15. If we exclude Neumark et al. (2005), the “average of averages” across the 11 studies is -0.20. There are, of course, other ways of aggregating estimates across studies.<sup>22</sup> However, when I consider the set of nearly all available estimates of the effect of minimum wages on poverty, the weight of the evidence suggests that minimum wages tend to have a small to moderate sized impact in reducing poverty.

While there is a signal in the literature that minimum wages tend to reduce poverty, it is also true that the existing evidence is clouded by serious limitations. These include (1) inadequate assessment of time-varying state-level heterogeneity, especially in light of the evidence in Allegretto et al. (2011, 2013) and Dube et al. (2010); (2) limited sample length and/or exclusion of more recent years that have experienced substantially more variation in minimum wages; (3) insufficient attention to serial and intra-group correlation in forming standard errors; (4) use of questionable estimators; and (5) frequent omission of demographic and other covariates. In this paper, I use more and better data along with more robust forms of controls to address these limitations in the existing literature.

### 3 Data and research design

#### 3.1 Data and sample construction

I use individual level data from the March Current Population Survey (CPS) between 1990 and 2012. I augment the CPS data with information on state EITC supplements,<sup>23</sup> state per-capita GDP, and state unemployment rates from the University of Kentucky Center for Poverty Research, and state and federal minimum wages from the U.S. Department of Labor. I take the average of the effective minimum wage (maximum of the state or federal minimums) during the year for which respondents report incomes. For example, I match the the effective monthly minimum wage averaged over January through December of 2011 in a given state to respondents from that state in the 2012 March CPS.

There is extensive variation in minimum wages over the 23 year period studied in this paper. Figure 1 plots the nominal federal minimum wage, as well as 10th, 50th and 90th percentiles of the effective nominal minimum wages (weighted by population). As the figure shows, the effective minimum wage varied substantially over this period across different states. It is also the case that the last 10 years have seen much more variation in minimum wages than the previous decade. Therefore, the inclusion of more recent data is particularly helpful as it allows us to estimate the effects of the policy more precisely.

The primary goal of this paper is to characterize how minimum wage changes affect the entire distribution of family incomes; for this reason, most of the analysis is performed for the non-elderly

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<sup>22</sup>Some other obvious candidates for aggregation point to a similar conclusion. The “median of median” elasticity across the 12 studies is -0.19. The simple mean of every elasticity in Table 1 is -0.17, while the median is -0.19.

<sup>23</sup>Many states specify a percentage of the federal EITC as a supplement to be paid to state taxpayers. I use this state EITC supplement rate in my analysis as a control variable.

population as a whole.<sup>24</sup> The exclusion of the elderly is motivated by the fact that they have much lower rates of poverty than the rest of the population, in part due to Social Security. For example, CPS data from March 2012 shows that 9.4 percent (2.7 percent) of the elderly had incomes under the poverty line (one-half the poverty line), whereas the corresponding proportions for the non-elderly population were 17.5 and 8.4 percent, respectively. For this reason, we are unlikely to learn very much about the impact of minimum wages on the bottom quantiles of the family income distribution from studying the elderly. Finally, a focus on the non-elderly is also common in the literature (e.g., Burkhauser and Sabia 2007, Sabia and Nielsen 2013).

Besides estimating the effect of minimum wages on the incomes of the non-elderly population overall, I also show key results by demographic groups similar to those that have been studied in the literature. These include (1) children under 18 years of age; (2) single (unmarried) mothers with children, (3) younger adults of 21-44 years of age, (4) 21-44 year olds with no more than a high school diploma, and (5) black or Latino individuals. As I discussed in section 2, a number of researchers have studied the impact of minimum wages on children and single mothers (e.g., Morgan and Kickham 2001, DeFina 2008, Gunderson and Ziliak 2004). Several studies have also considered younger adults, and adults with lesser education; these include Neumark and Wascher (2011), Addison and Blackburn (1999), and Sabia and Nielsen (2013). Unfortunately, the age and education categories are rarely aligned across studies. I have chosen the age group 21 to 44 primarily for the purpose of comparison with Neumark and Wascher (2011). The educational category of those with no more than a high school diploma similarly follows a number of other papers (Neumark and Wascher 2011, DeFina 2008). Finally, a number of studies (Neumark and Wascher 2011, Sabia and Nielsen 2013, Gunderson and Ziliak 2004) report results by race. My use of black or Latino individuals as a group again follows the categorization in Neumark and Wascher (2011).

### 3.2 Outcomes and research design

In this paper, I consider four classes of outcomes: the poverty rate, the poverty gap and the squared poverty gap, and family income quantiles. All of these are based on equivalized real family income, defined using the income-to-needs ratio,  $y_{it} = \frac{Y_{it}}{FPT(N_i, Children_i, t)}$ . As is standard,  $y_{it}$  is the ratio between family income,  $Y_{it}$ , and the federal poverty threshold  $FPT(N_i, Children_i, t)$ —which depends on family size ( $N_i$ ) and the number of children, and varies by year ( $t$ ). I use the same definition of family income as is used for official poverty measurement: pre-tax family income which includes earnings and cash transfers, but does not include non-cash benefits such as food stamps or housing subsidies.<sup>25</sup>

While most of the analysis in this paper uses the implied equivalence scale used for official

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<sup>24</sup>Official poverty measures do not include unrelated individuals under 15 years of age; for this reason I exclude them from the sample as well.

<sup>25</sup>Eligible income includes earnings (excluding capital loss or gains), unemployment compensation, workers' compensation, Social Security, Supplemental Security Income, public assistance, veterans' payments, survivor benefits, pension or retirement income, interest, dividends, rents, royalties, income from estates, trusts, educational assistance, alimony, child support, assistance from outside the household, and other miscellaneous sources.

poverty calculations, there are conceptual problems with that measure. The poverty thresholds were created in 1965 by constructing minimally adequate food budgets for families of different sizes and compositions. For families of three or more individuals, the poverty threshold was defined as three times the minimal food budget. For families with less than three individuals, however, the threshold was defined as 3.7 times the food budget, to account for the smaller portion spent by these families on food. Among other issues, this creates an arbitrary threshold at three individuals. As a robustness check, I also report the results using the square root scale that is used in recent OECD publications for making international comparisons (e.g., OECD 2011; OECD 2008). Using the square root scale, the alternative federal poverty threshold,  $F\tilde{P}T$ , for a family with  $N$  individuals is defined simply as  $F\tilde{P}T(N_i, t) = FPT(1, 0, t) \times \sqrt{N_i}$ . Unlike the equivalence scale implicit in the official poverty measure, the returns to scale in household production are assumed to be smooth under this alternative.

### Poverty rate and proportions under income-to-needs cutoffs

To estimate the impact of minimum wages on the proportion under a cutoff  $c$  of the income-to-needs ratio with individual data, I use a linear probability model where the dependent variable is simply an indicator for whether individual  $i$  is in a family whose income-to-needs ratio  $y_{it}$  falls below  $c$ :  $I_{cit} = \mathbb{1}(y_{it} < c)$ . As an example, the proportion under  $c = 1$  corresponds to the official poverty rate.

The canonical two-way (state and time) fixed effects regression specification is as follows:

$$I_{cit} = \alpha_c \ln(MW_{s(i)t}) + X_{it}\Gamma_c + W_{s(i)t}\Psi_c + \mu_{cs(i)} + \theta_{ct} + \epsilon_{cit} \quad (1)$$

The coefficient  $\alpha_c$  is a semi-elasticity of the proportion under the income-to-needs cutoff,  $c$ , with respect to the minimum wage,  $MW_{s(i)t}$ , indexed by the state of residence  $s(i)$  of individual  $i$  and time  $t$ . Additionally,  $\mu_{cs(i)}$  is the state fixed effect,  $\theta_{ct}$  is the time fixed effect, and  $\epsilon_{cit}$  is the regression error term. The regression coefficients and the error components are all indexed by  $c$  to clarify that they are from separate regressions for each income-to-needs cutoff  $c$ .

The vector of controls include individual-level covariates  $X_{it}$  (quartic in age, and dummies for gender, race and ethnicity, education, family size, number of own children, and marital status); and state-level covariates  $W_{s(i)t}$  (unemployment rate, state EITC supplement, and per capita GDP). We can calculate the minimum wage elasticity for the proportion under  $c$ ,  $\gamma_c$ , by dividing  $\alpha_c$  by the sample proportion under  $c$ . Therefore,  $\gamma_1$  corresponds to the elasticity of the poverty rate with respect to the minimum wage. The state-level unemployment rate and per-capita GDP are time-varying controls to account for aggregate economic trends in the state that are unlikely to be affected by the policy. All regressions and summary statistics in this paper are weighted by the March CPS sample weights. Finally, the standard errors are clustered by state, which is the unit of treatment.

A problem with the canonical model is that there are many potential time varying confounders.

As shown in Allegretto et al. (2013), high- versus low-minimum wage states over this period are highly spatially clustered, and tend to differ in terms of growth in income inequality and job polarization, and the severity of business cycles. To account for such confounders, I will report results from specifications that allow for arbitrary regional trends by the nine Census divisions, by incorporating division-specific year effects  $\theta_{cd(i)t}$ . This is motivated by the finding in Allegretto et al. (2011) and Dube et al. (2010) of the importance of spatial heterogeneity in estimating minimum wage effects on employment, and these papers utilize division-specific time effects as well. Additionally, I will consider specifications with state-specific linear trends,  $\sigma_{s(i)t}$ , to account for long run trend differences between states.<sup>26</sup>

Given the importance of the business cycle as a determinant of family incomes and movements in the poverty rate, I pay special attention to the issue in this paper. The inclusion of the state unemployment rate and year dummies are the usual means of accounting for cyclical factors. However, there are strong prior reasons to worry about business cycle heterogeneity across states when it comes to poverty and minimum wages. Allegretto et al. (2013) show that minimum wage increases are not uniformly distributed throughout the business cycle—they tend to occur more frequently during the second half of economic expansions. That paper also shows that states with higher minimum wages over the 1990-2012 period experienced sharper business cycle fluctuations. Moreover, states with higher minimum wages may systematically differ with respect to other attributes (such as unemployment insurance generosity) which may affect how a given change in the state unemployment rate translates into changes in family incomes or the incidence of poverty. For this reason, I also consider specifications that include state-specific recession-year indicators,  $\rho_{cr(t)s(i)}$ , whereby a dummy for each recessionary year is interacted with a dummy for the state: that is, state fixed effects interacted with separate dummies for each recessionary year: 1990, 1991, 2001, 2007, 2008, 2009.<sup>27</sup> This specification allows state level outcomes to respond arbitrarily to each recession, but as a consequence of the inclusion of the state-specific recession-year dummies, the identifying variation in such specifications is largely limited to non-recessionary periods. An added concern raised by Neumark et al. (2013) is that recessionary periods can influence the estimation of state-specific trends. As Allegretto et al. (2013) argue, this too can be handled by the inclusion of state-specific recession-year dummies.<sup>28</sup>

The most saturated specification is as follows:

$$I_{cit} = \alpha_c \ln(MW_{s(i)t}) + X_{it}\Gamma_c + W_{s(i)t}\Psi_c + \mu_{cs(i)} + \theta_{cd(i)t} + \rho_{cr(t)s(i)} + \sigma_{s(i)t} + \epsilon_{cit} \quad (2)$$

Besides equations 1 and 2, I also show results from all of the six intermediate specifications with combinations of the three sets of controls (division-specific year effects, state-specific recession-year

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<sup>26</sup>Using quadratic instead of linear trends produced virtually identical results.

<sup>27</sup>These correspond to CPS survey years 1991, 1992, 2002, 2008-2010.

<sup>28</sup>In studying minimum wage effects on welfare caseloads, Paige, Spetz and Millar (2005) also use state-specific business cycle controls, although they interact the unemployment rate with state dummies. My results using the unemployment rate interaction as opposed to recession-year interactions produced qualitatively similar results, as I discuss in footnote 34.

effects, and state linear trends), and discuss the full range of estimates. Additionally, I assess the relative contribution of each of the three sets of controls in explaining the difference between estimates from equations 1 and 2.

I estimate a series of regressions for alternative income-to-needs cutoffs. In the main tables, I report the impact of minimum wages on the proportions below the following cutoffs: 0.50, 0.75, 1.00, 1.25, 1.50, 1.75 and 2.00 times the federal poverty threshold. In the figures (and appendix tables), I show the effects between 0.50 and 3.00 times the threshold, which is close to the median income-to-needs ratio in the sample (3.04). I consider a wide range of income cutoffs for several reasons. First, the official poverty line may inadequately account for costs associated with a minimally acceptable standard of living, and alternative approaches define hardship considerably more broadly (e.g., Allegretto 2006). Second, there is an inherent arbitrariness in choosing any specific threshold. And third, the goal of this paper is to provide a full picture of how minimum wage policies affect the cumulative distribution of family earnings. For this reason, the figures show the impact (and confidence bounds) on proportions below all cutoffs between 0.50 and 3.00 times the federal poverty threshold in intervals of 0.25. Together, these estimates characterize the impact of the policy on the bottom half of the income-to-needs distribution. The estimates for cutoffs near the middle of the distribution are also useful as falsification tests, since we do not expect the minimum wage to substantially affect incomes in that range.

### Unconditional quantile partial effects

When we estimate the impact of a policy on the proportion of individuals below various income cutoffs, and do so for a large number of such cutoffs, the results summarize the effect of the policy on the cumulative distribution function (CDF) of family incomes. This is an example of *distribution regressions* as discussed in Chernozhukov, Fernandez-Val and Melly (2013). Moreover, if we have estimates for the impact of the policy on the CDF for all values of an outcome  $y$ , we can then invert the impact of the policy on the CDF to estimate the effect of the policy on a particular quantile  $Q_\tau$  of  $y$ . Figure 2 illustrates the concept:  $F_A(y)$  is the actual CDF of the outcome  $y$ , say equivalized family income. The function  $F_B(y)$  represents the counterfactual CDF, showing the distribution that would have occurred absent the treatment—say, a small increase in the minimum wage. Under the assumption of conditional independence of the treatment,  $F_B(y)$  is estimable using distribution regressions such as equations 1 or 2 of the outcome  $I_c = \mathbb{1}(y)$  on the treatment, along with a set of covariates, for every value of  $c$ . The resulting estimates would fully characterize the impact of the treatment on the CDF of  $y$ , i.e.,  $F_B(y) - F_A(y)$ , and hence form an estimate of the counterfactual distribution  $F_B(y)$ .

Say we are interested in the effect of the policy on the  $\tau^{th}$  quantile of the outcome  $y$ . The unconditional quantile partial effect (UQPE) estimand is defined as:  $Q_{B,\tau} - Q_{A,\tau} = F_B^{-1}(\tau) - F_A^{-1}(\tau)$ . It is a partial effect of minimum wages, since the distribution regressions used to estimate the counterfactual,  $F_B(y)$ , hold other covariates constant. It is an unconditional quantile effect because it measures the impact of the policy on quantiles of the unconditional (or marginal) distribution of  $y$ ,

which is more directly economically interesting than the conditional quantile partial effect (CQPE) that is the estimand associated with the quantile regression (Koenker and Bassett 1978). The latter represents the impact of the treatment on the  $\tau^{th}$  quantile of the distribution of  $y$  conditional on covariates. For example, the CQPE informs us of the impact of minimum wages on those with low family incomes within their educational group—be they college graduates or junior high dropouts. However, when thinking about distributional effects, we are not as interested in the impact of minimum wages on college graduates with unusually low family incomes—i.e., who are poor relative to other college graduates. We are more interested in the impact on those with low incomes in an absolute (or unconditional) sense.<sup>29</sup> We do wish to *control for* factors like education, but do not wish to *condition* the distributional statistic on (e.g., define “low income” based on) those factors. The UQPE,  $Q_{B,\tau} - Q_{A,\tau}$ , controls for covariates, but does not define the quantiles based on them; hence, it captures the effect of the policy on the bottom quantiles of the unconditional distribution.

It is possible to estimate the UQPE for the  $\tau^{th}$  quantile by (1) estimating the effect of the policy on the proportions under a large set of cutoffs,  $c$ , and forming an estimate for the counterfactual distribution  $F_B(\tau)$ , and then (2) globally inverting that distribution function and obtain an estimate for  $F_B^{-1}(\tau)$  and hence an estimate for  $F_B^{-1}(\tau) - F_A^{-1}(\tau)$ . This procedure is feasible, and outlined in Chernozhukov et al. (2013). However, it is computationally demanding as it requires estimating a very large number of distribution regressions to globally invert  $F_B(y)$  and estimate the quantile effects. As described in Firpo et al. (2009) and Fortin et al. (2010), we can also invert the counterfactual distribution function using a local linear approximation. Figure 2 provides the intuition behind this approach. We begin by defining a cutoff  $c$  associated with quantile  $\tau$  such that  $F_A(c) = \tau$  using the actual distribution. Next, we estimate the effect of the policy on the proportion below  $c$  using a single distribution regression. The effect on the proportion is graphically represented as  $\Delta = (F_B(c) - F_A(c))$  in Figure 2. Now, the quantity  $Q_{B,\tau} - Q_{A,\tau}$  can be locally approximated by the product of the vertical distance  $-\Delta = -(F_B(c) - F_A(c))$  divided by the slope of the distribution function at  $F_A(c) = \tau$ , which is just the PDF of  $y$  at the  $\tau^{th}$  quantile:  $f_A(F_A^{-1}(\tau))$ . The green dashed triangle shows the geometry of this local linear approximation, which can be written as  $UQPE \approx -\frac{F_B(c) - F_A(c)}{f_A(c)}$ . While the global inversion would require us to estimate a large number of regressions for different values of  $c$  in order to obtain the estimate for a single quantile  $Q_\tau$ , only one regression is needed for each quantile when inverting locally.

The key simplification here is taking a linear approximation to the counterfactual CDF which greatly simplifies the problem of inverting the counterfactual distribution function. This linearization works well for a relatively continuous treatment with a substantial variation in treatment intensity, and less well for lumpy or discrete treatments. Given the fairly continuous variation in minimum wage changes, the approximation error is unlikely to be a major concern here. Later in this section, I discuss a few additional features of the data that further reduce the scope of the approximation

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<sup>29</sup>To be clear, both the UQPE and CQPE measure the effect of the treatment on low income quantiles, and not specifically on people who would have earned low incomes (in either a conditional or an unconditional sense) absent the policy. The two concepts coincide only under the additional assumption of rank invariance, i.e., that the treatment does not alter the ranking of individuals.



error.

To operationalize the estimation, Firpo et al. use as the dependent variable the recentered influence function of  $y$ . The RIF for the  $\tau^{th}$  quantile,  $Q_\tau$ , is as follows:

$$RIF(y_{it}, Q_\tau) = \left[ Q_\tau + \frac{\tau}{f(Q_\tau)} \right] - \frac{\mathbb{1}(y_{it} < Q_\tau)}{f(Q_\tau)} = k_\tau - \frac{\mathbb{1}(y_{it} < Q_\tau)}{f(Q_\tau)} \quad (3)$$

Since the first term in the bracket is a constant, the regression estimate for the UQPE at the  $\tau^{th}$  quantile is simply a rescaled effect of the impact on the proportion under  $c(\tau) = Q_\tau$ , where the scaling factor is  $-\frac{1}{f_A(Q_\tau)}$ . This corresponds to the graphical demonstration of the technique in Figure 2.

I estimate a series of regressions for alternative quantiles,  $Q_\tau$ . Again, I use a range of controls for time-varying heterogeneity across eight different specifications. The most saturated specification is as follows:

$$RIF(y_{it}, Q_\tau) = \beta_\tau \ln(MW_{s(i)t}) + X_{it}\Gamma_\tau + W_{s(i)t}\Phi_\tau + \pi_{\tau s(i)} + \theta_{\tau d(i)t} + \sigma_{\tau s(i)t} + \rho_{\tau r(t)s(i)} + \epsilon_{\tau it} \quad (4)$$

$\beta_\tau$  is the minimum wage semi-elasticity for the UQPE at the  $\tau^{th}$  quantile of equivalized family income. Note that  $\beta_\tau = \alpha_{c(\tau)} \frac{1}{f(c(\tau))}$ , so there is a one-to-one correspondence between the estimates from equations 2 and 4. To obtain the minimum wage elasticity for the  $\tau^{th}$  income quantile, we divide  $\beta_\tau$  by  $Q_\tau = c(\tau)$ , so  $\eta_\tau = \frac{\beta_\tau}{c(\tau)}$ . Since both  $Q_\tau$  and  $f(Q_\tau)$  are estimated, in principle, the standard errors can be computed using bootstrapping. However, I find that the additional contribution of these estimations to the overall variance of the  $\hat{\beta}_\tau$  to be small, and for this reason the results here report standard errors without accounting for the estimation of  $Q_\tau$  and  $f(Q_\tau)$  due to computational reasons.<sup>30</sup>

A number of features of the data make it attractive for the application of the RIF-UQPE approach. Table 2 and Figure 3 show the cumulative distribution function for the income-to-needs ratio. I note that the CDF is nearly linear in the bottom half of the distribution, especially between income-to-needs ratios of 0.75 and 2.50, which roughly correspond to the 10th and 40th percentiles: in this range the PDF is essentially flat.<sup>31</sup> This is an useful feature of the data when it comes to the estimation of the UQPE, since the linearity of the actual CDF (in combination with a continuous treatment) reduces the scope of the approximation error when inverting the counterfactual CDF using the RIF approach, which is based on a linear approximation.

Additionally, Figure 4 shows that the income quantiles at the bottom of the distribution have been fairly stationary over the past two decades, although they do exhibit pro-cyclical tendencies.

<sup>30</sup>Using block-bootstrapping by state, I find that accounting for the estimation of the density around the cutoff increases the standard error by less than 3% in the case of the  $c = 1$  or right at the poverty threshold. Given the sample sizes, the large number of specifications and cutoffs, and the large number of covariates due to division-year dummies and state trends, the computational burden from using bootstrapped standard errors is substantial, and I do not pursue this strategy here.

<sup>31</sup>The kernel density estimation uses an Epanechnikov kernel and the STATA default bandwidth based on Silverman's rule-of-thumb.

This is corroborated in Table 3, which shows that the proportions below various income-to-needs cutoffs were quite similar in the 1990s and the 2000s. Figure 4 also shows that the probability densities at the associated income-to-needs cutoffs ( $f_A(c(\tau))$ ) have also been fairly stable over time, with the possible exception of the 5th quantile. The relative stability of the income-to-needs quantiles and densities is relevant for interpreting the UQPE estimates. The estimation of the UQPE for a particular quantile,  $\tau$ , is based on changes in the proportion below the income-to-needs cutoff  $c(\tau)$  associated with that quantile, along with the probability density of the income-to-needs ratio at that cutoff,  $f_A(c(\tau))$ . Both  $c(\tau)$  and  $f_A(y)$  are calculated by averaging over the entire sample. The relative stability of the mapping between  $c$  and  $\tau$  over this period suggests that the estimated impact on income around a given cutoff  $c$  is referring to roughly the same quantile over this full period.

Finally, the use of the full-sample distribution to estimate the cutoff  $c(\tau)$  and the density  $f_A(c)$  may be an issue if the treatment and control units had very different income distributions. However, all states receive treatment at some point during the sample, and the variation in minimum wages is fairly continuous and widespread; therefore, the the sample-averaged cutoffs and densities are broadly representative of where the minimum wage variation is coming from. Overall, the nature of both the treatment as well as the outcome facilitate the application of the RIF approach to a repeated cross-sectional setting.

### Other distributional measures: gap and squared gap indices

An attractive feature of the RIF approach is that it allows us to use individual level data to estimate the impact of of minimum wages on a variety of distributional statistics. For example, an additional statistic for measuring poverty is the poverty gap index, which measures how much we would need to increase incomes to bring everyone up to the poverty line. As such, it is more sensitive to the depth of poverty than is the poverty rate. As shown in Essama-Nssah and Lambert (2012), for a given cutoff,  $c$ , we can define the recentered influence function for the gap index as:

$$RIF(y_{it}, gap(c)) = \begin{cases} (1 - \frac{y_{it}}{c}) & \text{if } y_{it} < c \\ 0 & \text{if } y_{it} \geq c \end{cases}$$

Similarly, we can also estimate the impact of the policy on the squared poverty gap, which is used to measure the severity of poverty. The squared gap measure is more sensitive to income movements far below the cutoff,  $c$ . As also shown in Essama-Nssah and Lambert, the recentered influence function for the squared gap index is simply  $RIF(y_{it}, squared\ gap(c)) = [RIF(y_{it}, gap(c))]^2$ . I show the impact of minimum wages on these two additional poverty related indices for income-to-needs cutoffs ranging between 0.50 and 2.00.

### Dynamic effects

I also estimate dynamic specifications with a one-year lead and a one-year lag of log minimum wage, in addition to the contemporaneous value. I do so for both the poverty rate and the unconditional quantile regressions. For example, for the UQPE regressions, I estimate:

$$RIF(y_{it}, Q_\tau) = \sum_{k=-1}^1 \beta_{\tau,k} \ln(MW_{s(i),t+k}) + X_{it}\Gamma_\tau + W_{s(i)t}\Phi_\tau + \pi_{\tau s(i)} + \theta_{\tau d(i)t} + \sigma_{\tau s(i)t} + \rho_{\tau r(t)s(i)} + \epsilon_{\tau it} \quad (5)$$

In this distributed lag specification, I define  $(\beta_{\tau,-1})$  as the “leading value”, and  $(\beta_{\tau,0} + \beta_{\tau,1})$  as the “long term effect” on quantile  $Q_\tau$ . There are two distinct motivations behind the dynamic specification. First, the “leading values” provide us with a falsification test to discern the reliability of a research design. A statistically significant or sizable leading value,  $\beta_{\tau,-1}$ , indicates that the specification may not be able to account for pre-existing trends, and hence may provide misleading estimates. For example, Dube et al. (2010) and Allegretto et al. (2011, 2013) show that the canonical two-way fixed effects model often fails this falsification test when it comes to minimum wage impact on teen and restaurant employment. During the past 25 years, minimum wage increases have tended to occur at times and places where low-wage employment was unusually low or falling, and the two way fixed effects model is unable to account for these pre-existing trends. For this reason, I subject all the specifications to the leading value falsification test, and use this information as a criteria for model selection.

A second motivation for the dynamic specification is to allow for lagged effects from the policy change, and the  $(\beta_{\tau,0} + \beta_{\tau,1})$  term better captures the longer run effect of the policy. Previous work such as Addison and Blackburn (1999), Sabia (2008) and Sabia and Nielsen (2013) also consider lagged effects, although their conclusions do not appear to be substantially affected by the inclusion of lags. The explicit inclusion of the lagged treatment variable may be of particular relevance when the specification includes a state-specific linear trend. With state trends, but without lagged treatment included as a regressor, a delayed impact can lead to a mis-estimation of the state trends, attenuating the measured effect of the treatment (Wolfers 2006). Explicit inclusion of lagged minimum wages mitigates this problem. A few of the papers reviewed in section 2 have shown results using state trends or with lagged minimum wages, but not with both.

### 3.3 Descriptive statistics

Table 3 shows various distributional measures for the non-elderly population, as well as the five key demographic groups, using alternative income-to-needs cutoffs between 0.50 and 3.00. For these groups I calculate the proportions below the cutoffs using the standard equivalence scale (columns 4 through 11), and the square root scale (column 1). For the overall non-elderly population, I also show the gap index, and the squared gap index for the same cutoffs (using the standard equivalence scale). To clarify, for income-to-needs cutoff of 1.00, the columns 1, and 4 through 11, show the headcount poverty rates; column 2 shows the poverty gap index, and column 3 the squared poverty gap index.

For non-elderly adults as a whole, the poverty rate stayed stable at 0.15 over the 1990s and 2000s. The poverty rate for single mothers (0.38), black/Latino individuals (0.28), and children (0.21) were all higher than the average. Among adults 21-44 year old, those with high school or

lesser education had greater rates of poverty (0.21) than all adults of that age (0.14). These patterns are as expected, and are qualitatively similar when we consider income-to-needs cutoffs of 0.50 and 1.50 instead of 1.00. Moreover, the overall poverty rates do not differ substantially if we use the square root equivalence scale. Finally, the gap and squared gap indices tend to be somewhat less sensitive to the choice of income-to-needs cutoff than the headcount rate. For example, whereas moving the cutoff from 50 to 150 percent of the official poverty line increases the headcount rate by a factor of 3.4, it increases the gap index by a factor of 2.8, and the squared gap index by a factor of 2.3. This pattern reflects the greater sensitivity of the two gap measures to income changes further below the cutoff, as compared to the headcount rate, which only measures income movements near the cutoff.

## 4 Empirical findings

### 4.1 Main results for the poverty rate, and proportions below low-income cutoffs

Table 5 provides the estimates for the impact of minimum wages on the proportions under alternative income-to-needs cutoffs. For ease of interpretation, I report the estimates as elasticities ( $\hat{\gamma}_c$ ) by dividing the regression coefficients ( $\hat{\beta}_c$ ) by the sample proportion under each cutoff; this is true both for the point estimate and the standard errors.<sup>32</sup> The underlying regression coefficients, or semi-elasticities, and standard errors are reported in Appendix Table A1. I use eight different regression specifications that range from the canonical two-way fixed effects model in column (1) to the most saturated specification in column (8) which includes (a) division-specific year effects, (b) state-specific recession-year dummies, and (c) state linear trends. The six specifications in columns (2) through (7) exhaust all intermediate combinations of controls and provide us with evidence on how the inclusion of various types of time-varying controls affects the estimates.

First, I note that there is robust evidence that minimum wage increases reduce the share of individuals with very low family incomes. For income-to-needs cutoffs between 0.50 and 1.25 (i.e., between 50 and 125 percent of the official poverty threshold), and across the eight specifications, 30 out of the 32 estimates are negative in sign, and 22 are statistically significant at least at the 10 percent level. The canonical model in specification 1 stands out as the only one where none of the estimates for these income-to-needs cutoffs are statistically significant. Moreover, in the range where there are the strongest effects (i.e., income-to-needs cutoffs between 0.50 and 1.25), the point estimates from specification 1 are uniformly the smallest in magnitude. For example, specification 1 suggests a poverty rate elasticity of -0.12, which is similar to the average estimate of -0.13 in Burkhauser and Sabia (2007). However, for all other specifications (2-8), we find statistically significant poverty rate elasticities between -0.13 and -0.30. Moreover, we generally find evidence of reductions in the share under 75, 100 and 125 percent of the federal poverty threshold across

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<sup>32</sup>Since I divide both the regression coefficient and the standard error by the sample proportion under the cutoff, I am not accounting for the estimated nature of the sample proportion. However, I note that doing so would increase the estimated standard errors for the elasticities by a very small amount.

specifications 2-8. The share under 50 percent of the poverty threshold is also estimated to fall substantially when using within-division variation as in specifications 5-8.

Figure 5 provides corresponding visual evidence on how minimum wages affect the bottom half of the income-to-needs distribution. The most saturated specification 8 suggests that the distribution of family incomes with higher minimum wages first-order stochastically dominates the distribution with a lower value of the minimum. The shares below cutoffs are smaller for cutoffs up to 2.00 or so, and unchanged thereafter. Specification 1 suggests a different (and anomalous) pattern, with a rise in the share below cutoffs in the middle of the distribution. However, analogous graphs for most intermediate specifications, as shown in Figure A1, also corroborate the evidence that minimum wages tend to reduce shares of individuals with low incomes without significantly affecting the rest of the distribution.

The range of estimates raises the issue of model selection. There is an *a priori* case for using more saturated specifications that better account for time-varying heterogeneity across states. Allowing for time-varying regional effects and state-specific trends makes both intuitive sense, and receives strong support in existing work. For example, Allegretto et al. (2013) show that the inclusion of these controls mitigates contamination from pre-existing trends when it comes to estimating the effect of minimum wages on teen employment. They also provide evidence that synthetic control methods tend to put substantially more weight on nearby states in constructing a control group, providing additional validity to the intuition that nearby states are better controls. They further show that the amplitude of business cycles tend to be greater in states with higher minimum wages, suggesting that business cycle heterogeneity may be an important factor to control. The main argument against using more saturated models would be that they lack the statistical power to detect an effect.<sup>33</sup> In reality, however, for the relevant range of income-to-needs cutoff, the point estimates in specifications 2-8 are larger in magnitude than the canonical specification 1, while the standard errors are not necessarily so. Based on both *a priori* and *a posteriori* considerations, it is difficult to argue for the least saturated specification, while there is a strong case for preferring the most saturated model.<sup>34</sup>

Beyond this, I consider two types of falsification tests for model selection. First, I consider higher income thresholds falsification tests: these are minimum wage elasticities for proportion earning below 2.50 or 3.00 times the poverty line. It is safe to say that we should not expect minimum wages to affect the proportion earning under 3.00 times the poverty threshold, which roughly corresponds

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<sup>33</sup>A second rationale for excluding covariates is that some of them are “bad controls” in the sense of blocking a causal pathway between the treatment and the outcome. As I discussed above, the state-specific linear trends may constitute a problem if there are delayed effects of the policy, but this can be mitigated by including lagged treatment variables. I assess this issue later in this section.

<sup>34</sup>Additional variations in the control set did not qualitatively affect the findings here. As noted earlier, Paige, Spetz and Millar(2005) account for state-specific business cycle controls by interacting the unemployment rate with state dummies, and also use state-specific trends. When I estimate that model, the elasticities (and standard errors) for the proportions under 0.50, 0.75 and 1.00 times the poverty line are -0.221(0.073), -0.173(.076) and -0.161(0.056), respectively. For comparison, my analogous specification 4 (with recession year interactions) produces broadly similar estimates of -0.138(0.091), -0.202(0.105) and -0.146(0.070), respectively. The same is true when division-specific time effects are included in each of the previous two specifications. Finally, quadratic instead of linear trends by state produced virtually identical results.

to the median equivalized family income in the national sample. Therefore, reliable specifications should produce estimates for these cutoffs that are small or close to zero. Appendix Figure A1 plots the elasticities and the 95 percent confidence intervals for income-to-needs cutoffs between 0.50 and 3.00 for all eight specifications. We find that the estimates from the canonical specification 1 suggest that minimum wages *increase* the proportion of families with incomes under cutoffs ranging between 2.00 and 3.00 times the poverty threshold, and all of these estimates are statistically significant at the 5 percent level. These suggest that the state and year fixed effects (and the control variables) are not sufficiently capturing the non-random nature of minimum wages, which seem to be higher at times and places with an unusually large fraction of the state population with family incomes below the national median. In general, the inclusion of state-specific recession-year dummies and state-specific linear trends both tend to incrementally improve the performance when it comes to higher income thresholds falsification tests. By and large the best performance occurs for the most saturated specification 8, where the elasticities for thresholds of 2.00 or greater are virtually identical to zero. While the canonical specification 1 is the only one where there are statistically significant estimates at the middle of the distribution, some of the intermediate specifications (e.g., 3 and 5) also have non-negligible point estimates (see Appendix Figure A1).

Second, I consider the dynamic estimates from models similar to equation (5) which include as regressors a one-year leading and one-year lagged log minimum wage in addition to the contemporaneous value. I use the leading values as a second falsification test, analogous to tests used in Dube et al. (2010), Allegretto et al. (2010) and Allegretto et al. (2013). The results are shown in Table 5 and Appendix Figure A2. They indicate that specifications 1-4 without division-year controls all produce spurious positive estimates for the proportion below one-half the poverty line, and these are statistically significant at the 5 percent level.<sup>35</sup> Some of the specifications (especially specification 5) tend to produce spurious negative estimates at the income-to-needs cutoff of 0.75. Considering the full range of cutoffs, the most saturated specification 8 usually performs the best when it comes to the leading values falsification test, much like the higher income threshold falsification test.

Overall, the canonical two-way fixed effects model used in most of the existing studies fails falsification tests across the board when it comes to effects prior to the wage increase, as well as effects in the middle of the income distribution. Moreover, it does so in the same direction, suggesting higher minimum wages are correlated with negative economic outcomes unrelated to the policy. This is also consistent with the results from similar falsification tests in the context of employment effects from this period, which also suggest pre-existing trends contaminate the estimates from this canonical model (e.g., Allegretto et al. 2013). Moreover, the most saturated specification 8 performs very well on the falsification exercises, while the results from the intermediate specifications vary. Therefore, based both on *a priori* grounds as including the richest set of controls for time-varying heterogeneity, as well as its performance on the falsification tests, I consider 8 to be the preferred specification. However, I recognize that reasonable observers may disagree on exactly

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<sup>35</sup>The spurious positive leading minimum wage estimate for income-to-needs cutoff of 0.50 suggests that the lack of finding a reduction in the proportion under that cutoff in specifications 1-4 (see Table 4) may be driven by pre-existing trends.

which specification is ideal, or may place somewhat different weights on the evidence associated with each specification. For this reason, in this paper I often report the range of estimates across all eight specifications.

We can also use the dynamic models to study longer term impact of minimum wages. In Table 6, I report the “long-run” effect, which is the sum of the contemporaneous and one-year lagged log minimum wage coefficients, again converted to elasticities. (The actual sums of the coefficients, which are semi-elasticities, are reported in Appendix Table A2.) These estimated effects beyond the first year of policy change are typically as large or larger in magnitude as the estimates without lags. Among the 32 estimates for proportions below the income-to-needs cutoffs between 0.5 and 1.25, 24 of the long-run minimum wage elasticities are statistically significant at least at the 10 percent level. Of these 32 cases, in 23 the estimates with lagged effects are larger than their counterparts in Table 4, while most of the rest are similar. Of the 16 cases from specifications that include a state linear trend, 14 are larger when lagged minimum wages are included. In contrast, for the 16 cases without state trends, 9 are larger while the other 7 are not. Therefore, the inclusion of lags appears to mitigate the attribution of delayed effects to the estimation of state-specific trends, similar to Wolfers (2006).

For the proportion under one-half the poverty line, the long-run elasticities range between -0.28 and -0.40. Unlike the estimates in Table 4 without lags, now even specifications 1-4 suggest a clear reduction in the share below this cutoff. For the proportion under the poverty line, the long-run elasticities range between -0.13 and -0.37, as compared to the elasticities between -0.12 and -0.30 in Table 4. The preferred specification 8 suggests a long-run poverty rate elasticity of -0.36, somewhat larger than the elasticity of -0.24 without lags. Importantly, the long-run effects from the canonical model suggest sizable and statistically significant reductions in the proportions below 50 and 75 percent of the poverty threshold; even the poverty rate elasticity of -0.13 is statistically significant at the 10 percent level. Finally, as shown visually in Figure 7, the long-run elasticities for specification 1 are somewhat better behaved (i.e., closer to zero) for higher-income cutoffs. The preferred specification 8 continues to show sizable reductions at the bottom, tapering off to close to zero by 200 percent of the poverty threshold. The long run elasticities are plotted for all eight specifications in Appendix Figure A3. Although the estimates tend to be less precise than those from models without lags (Appendix Figure A1), the point estimates almost uniformly point toward moderate sized reductions in the low income shares, coupled with typically small and statistically insignificant effects at two or three times the poverty threshold.

## 4.2 Source of heterogeneity—trends, regions and business cycles

As the previous section shows, there are substantial differences in the minimum wage elasticities for low-income shares from the least and most saturated specifications (i.e., specifications 1 and 8, respectively). Since the most saturated specification includes three additional sets of time-varying controls—division-specific time effects, state-specific recession-year effects, state linear trends—it is somewhat difficult to disentangle their relative contributions. In this section, I provide some

additional evidence on this question by decomposing the difference between these two specifications into components attributable to each set of controls.

A challenge for such a decomposition is that the results depend on the order in which the controls are added. There are exactly six different orderings for incrementally adding the three sets of controls going from specification 1 to specification 8, and each of these orderings provides a different decomposition.<sup>36</sup> In Appendix Table A3, I report the incremental contributions of these three sets of controls averaged over all six orderings. I do so for the four income-to-needs cutoffs between 0.5 and 1.25, which constitutes the range where the minimum wage appears to have an effect. The top panel A presents the results from regressions with contemporaneous minimum wages only. The first section of the panel reports the contributions of each control set in terms of the actual elasticity estimates in Table 4; the second section converts these into proportions of the total difference between estimates from specifications 1 and 8. The last row of the panel further averages these proportions over the four income-to-needs cutoffs to provide an overall decomposition. What is clear from panel A is that the biggest impacts come from the inclusion of division-specific year effects (74 percent), followed by the state-specific recession-year effects (39 percent). Indeed, these two sum up to 113 percent, as they are offset by the average incremental impact of the state trends (-13 percent) which actually tend to, on average, slightly reduce the magnitudes of the elasticities.

We can also do an analogous decomposition for the long term effects, which are reported in Panel B of Appendix Table A3. Here, we find that it is the state-specific recession-year controls that make the most difference (77 percent) followed by division-year effects (25 percent). The inclusion of state-specific trends does little, on average, to explain the gap between the two specifications for any of the income cutoffs.<sup>37</sup>

To be sure, there are other reasonable ways to quantify the relative contributions of these sets of controls. However, the take-away from this exercise (and from a casual inspection of Tables 4 and 6, or Appendix Figures A1 and A3) is that the inclusion of time-varying regional effects, and controls for heterogeneous impacts of the business cycle, matter substantially. And unlike state-specific trends—which have smaller and more ambiguous impact on the size of the estimates—these two sets of controls have not been used in the existing literature on minimum wages and family incomes. It is an interesting question why the inclusion of business cycle heterogeneity seems to matter relatively more when lagged effects are included. One possible explanation concerns the timing of minimum wage increases, which tend to occur more frequently in later parts of economic expansions (Allegretto et al. 2013). As a consequence, the estimation of lagged effects may be more likely to encounter the heterogeneity of business cycles. However, further research is needed to gain insight

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<sup>36</sup>Denoting the three sets of controls as D (Division-specific time effects), R (state-specific recession-year effects), and L (state linear trends), the six orderings are as follows: DRL, DLR, RDL, RLD, LDR, LRD. There are four unique incremental contributions of each set of controls, but the contributions associated with orderings where a given set either comes first or last are weighted twice, because they appear in two different orderings.

<sup>37</sup>Although I do not report the results here, we can also decompose the differences between the specifications 1 and 8 for the leading values, and higher income thresholds, falsification tests. For outcomes where there is a non-trivial gap between the two specifications, all three of the control sets contribute towards the difference. This suggests all three sets of controls “matter.”



into this issue.

### 4.3 Effect for subgroups

In Table 7, I use the preferred specification 8 to show minimum wage elasticities for the proportions under alternative income-to-needs cutoffs disaggregated by time periods and demographic groups. First, I find that the poverty rate elasticities were comparable in the 1990-1999 sample (-0.29) as in the 2000-2012 sample (-0.23). The reductions in proportions were substantially larger in the 1990s for lower cutoffs (i.e., severe poverty), but somewhat smaller for higher cutoffs (i.e., near poor). However, as expected, the precision is lower when we disaggregate by periods.

Turning to the five demographic subgroups, for all of them I find sizable reductions in the proportions under 50, 75 and 100 percent of the poverty threshold. The 15 elasticities range between -0.16 and -0.57, and 13 are statistically significant at at least the 10 percent level. The poverty rate elasticities are larger than average for children (-0.31), black and Latino individuals (-0.40), and 21-44 year olds with high school or lesser education (-0.27). They are somewhat smaller for single mothers (-0.16) and 21-44 year olds generally (-0.20). The reductions in low-income shares extend somewhat further up the distribution for black and Latino individuals as well as for children under 18, for whom there are substantial and statistically significant reductions for up to 175 percent of the poverty threshold. The key conclusion from these findings is that when we focus on disadvantaged groups such as black or Latino individuals, or those with lesser education, the anti-poverty impact of minimum wages appears to be somewhat greater; however, for another group (single mothers) the impact is somewhat smaller.

Next, I compare my findings with what the existing research suggests about heterogeneous impact by age, single mother status, education, and race, as summarized in Table 1. First, if we take the poverty rate elasticities for groups under 20 years of age in the literature, my estimate for children (-0.31) is similar to Morgan and Kickham (-0.39) and Addison and Blackburn (average of -0.39 across specifications for teens). Therefore, both existing work and results in this paper point toward a greater poverty reducing impact of minimum wages among children than the population as a whole.

Second, for single mothers, I find elasticities for the proportion under the poverty line of -0.16, and under one-half poverty line of -0.32, which as noted are somewhat smaller than the population overall. The implied elasticities in Neumark and Wascher (2011) for 21-44 year old single females with kids are +0.08 (poverty) and -0.45 (half-poverty). However, their results suggest stronger anti-poverty effects when they consider single mothers who are either black/Hispanic (-0.20) or have at most a high school diploma (-0.22). Sabia (2008) finds a range of elasticities between -0.28 and -0.17 for single mothers, depending on the mother's education level. Burkhauser and Sabia (2007) find poverty rate elasticities for single mothers between -0.21 and -0.07 depending on specification. DeFina (2008) finds poverty rate elasticities in female headed households with kids of -0.42 (-0.35 when restricting to mothers without a college education). Finally, Gunderson and Ziliak finds very small effects for female headed households (-0.02). If we take an "average of averages" of

poverty rate elasticities for single mothers (or female heads of households) across these five studies, we get an average elasticity of -0.18, which is not very different from my estimate of -0.16.

The third comparison concerns heterogeneity in the effect by levels of education. Recall that among 21-44 year olds, I find that the poverty rate elasticity rises somewhat in magnitude from -0.20 to -0.27 when I restrict to those with high school or lesser education. First, I note that my estimated poverty rate elasticity for 21-44 year olds (-0.20) is somewhat smaller than the implied elasticity in Neumark and Wascher (2011) of -0.29. Second, while they do not provide estimates for 21-44 year olds by education, they do so for single females who are 21-44 year old. Within that category, the implied poverty rate elasticity for those with only a high school diploma is -0.19, as opposed to 0.00 for the group overall. A similar pattern obtains for single mothers as well, and these results are qualitatively similar to the findings in this paper. Sabia (2008) also finds larger reductions in the poverty rate for single mothers with less than a high school diploma (-0.28) than those with (-0.17), although neither estimate is statistically significant. In contrast, restricting to those with less education tends to slightly diminish the effects in DeFina, though they continue to be sizable (changing from -0.42 to -0.35). Sabia and Nielsen's estimates are highly imprecise and the impact of conditioning on education levels is contradictory across specifications. Finally, while Addison and Blackburn do not provide comparable estimates by levels of education, averages across their specifications do suggest a somewhat large elasticity (-0.43) for junior-high dropouts. While the estimates in the literature do not paint to a clear picture, on balance they do not suggest that the poverty reducing effect of minimum wages is smaller among those with less education. A contribution of this paper is to show more clearly that the minimum wage effects on poverty are somewhat *larger* among adults without any college education.

The fourth, and final, comparison concerns heterogeneity by race. Here, I find clear evidence of substantially stronger reduction in poverty, and near poverty, among black or Latino individuals as compared to the population as a whole. This is consistent with the implied estimates from Neumark and Wascher (2011), which suggest that that among single females, the poverty rate elasticity rises in magnitude from an average of 0 to -0.19 when they restrict the sample to black or Hispanic individuals. A similar pattern obtains for single mothers in their paper as well. Gunderson and Ziliak also find a slightly larger effect in the black population—though the magnitude is still very small (-0.06). Finally, Sabia and Nielsen's estimates are, again, imprecise and qualitatively differ by specification. Similar to the case of education, this paper provides sharper evidence than available in existing work that the impact of minimum wages on poverty rates tends to be somewhat greater among African Americans and Latinos.

#### 4.4 Alternative measures of poverty

Table 8 shows that the minimum wage elasticities for proportions under 0.50, 0.75, and 1.00 times the poverty threshold are either similar or somewhat larger when using the square root equivalence scale, as compared to the implicit scale used for official poverty calculations. The poverty rate elasticity rises in magnitude to -0.33 from the original -0.24, and is statistically significant at the 1

percent level. The estimates for cutoffs above the poverty line are slightly smaller in magnitude. Overall, the use of the square root scale continues to show a moderate reduction in poverty in response to minimum wage increases.

Table 9 also considers two other outcomes besides the headcount rate, namely the gap and squared gap indices. For the official poverty line, the poverty gap elasticity is somewhat larger in magnitude at -0.32 than the poverty rate elasticity of -0.24. The squared poverty gap is substantially larger in absolute value, with an elasticity of -0.96. Both the gap and squared gap elasticities are statistically significant at the 1 percent level. The findings for the gap and squared gap measures show that minimum wage increases do not reduce poverty by merely pushing some families above the poverty line, but rather by increasing incomes substantially and further below the poverty line. This finding is consistent with sizable reductions in the proportion below 50 and 75 percent of the poverty line, as shown in Table 8 and also in previous tables. Moreover, it is also consistent with findings on family income elasticities by quantile that I present below in section 4.5.

I want to make two additional points about the squared poverty gap elasticities. First, I note that the elasticity close to -1 is in sharp contrast to the near zero effect Gunderson and Ziliak found in their study, which mirrors my findings of larger anti-poverty effects of minimum wages generally than those found in that paper. Since I tend to find substantial effects not just at the poverty line, but also at 75 percent and 50 percent of the poverty line, it is not surprising that the disjuncture between the two studies is particularly large for the squared poverty gap measure, which is more sensitive to changes far below the poverty line.

Second, I also report estimates for the gap and squared gap indices using cutoffs above the poverty line. I find that the gap elasticities continue to be sizable and statistically significant for these higher income cutoffs, though they diminish in magnitude. This is as expected, since the gap index for a cutoff  $c$  is more sensitive to increases in incomes substantially below  $c$  than is the headcount rate measure for that same cutoff  $c$ . For example, if all the increases in incomes for families due to a higher minimum wage occur at or below 125 percent of the poverty line, the proportion under 150 percent of the poverty line will not be affected. However, such income gains will still affect the gap index when using a cutoff of 150 percent of the poverty line. Table 9 shows that the squared gap elasticities actually *increase* in magnitude at higher cutoffs. While this may seem surprising, it is not for a similar reason: the squared gap index is even more sensitive to income gains substantially below the cutoff. A given increase in income for, say, families around 75 percent of the poverty line is much more influential for the squared gap index when the cutoff is 150 percent of the poverty line than when the cutoff is the poverty line itself.

Overall, when considering alternative poverty measures, I continue to find substantial anti-poverty effects from minimum wage increases. The minimum wage effects are somewhat larger when it comes to the depth of the poverty as measured by the poverty gap. And the effects are substantially larger when I consider the severity of poverty as indicated by the squared poverty gap.

## 4.5 Effect on family income quantiles

As discussed above, we can use the impact of minimum wages on the proportions below alternative income cutoffs to estimate the impact on equivalized family income quantiles. The unconditional quantile partial effects ( $\beta_\tau$ ) are estimated using equation 3, or analogous regressions for the less saturated specifications. To convert the UPQE's into elasticities ( $\eta_\tau$ ), they are subsequently divided by the income-to-needs cutoffs corresponding to a given quantile. In Table 9, I present these equivalized family income elasticities for quantiles ranging from 5 through 50, in increments of 5. Recall that the 15th quantile is essentially at the poverty line during the sample period.

Consistent with the evidence on proportions, I find robust evidence that minimum wages lead to moderate increases in incomes for the bottom 20 percent of the equivalized family income distribution. Of the 32 estimates, 30 are positive in sign, and 19 are statistically significant at least at the 10 percent level. The 16 estimates for the 10th and the 15th quantiles range between 0.10 and 0.43, and 13 are statistically significant at least at the 10 percent level. As before, the two-way fixed effects specification 1 provides the smallest estimated magnitudes, and the inclusion of division-specific year effects and state-specific recession controls tend to increase the size of the estimates. These patterns are as expected, since the elasticities for the family income quantiles are simply rescaled semi-elasticities for the proportions below alternative income-to-needs cutoffs.

For the preferred estimate from specification 8, I find elasticities of 0.47, 0.32, and 0.21 for the 5th, 10th, and 15th quantiles of equivalized family incomes, respectively; all are statistically significant at least at the 5 percent level. I note that the minimum wage elasticity for the 10th percentile of family earnings in Card and Krueger (1995) ranges between 0.2 and 0.28. This is only slightly smaller than the family income elasticity for the 10th quantile from my preferred specification (0.32). Moreover, their estimate is well within the range of estimates across the eight specifications considered here, (0.13, 0.43).<sup>38</sup>

The minimum wage elasticities for family income quantiles from specifications 1 and 8 are also plotted in Figure 8, which shows that while the two-way fixed effects specification 1 produces smaller estimates at the bottom, it also implausibly suggests a statistically significant income elasticity of -0.09 at the median, indicating a failure of a falsification test. In contrast, we find substantial and statistically significant effects for the preferred specification 8 up to the 15th quantile, declining to close to zero by the 30th quantile. Corresponding figures showing the elasticities for family income quantiles using intermediate specifications are provided in Appendix Figure A1.

Table 10 and Figure 10 show the long-run elasticities for the income quantiles, based on the dynamic specifications (e.g., equation 5). All of the 32 estimates for the 5th, 10th, 15th, and 20th quantiles are positive, and 16 of them are statistically significant at the 10 percent level. Of these 32 estimates, 21 are larger when lagged effects are included as compared to the corresponding

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<sup>38</sup>However, I should note that the outcomes in the two papers are somewhat different. First, Card and Krueger's estimate relates to family *earnings*, while I am considering family *incomes*, a broader category. Second, and more subtly, they are estimating the effect on the 10th percentile of a *state's* family earnings distribution. In contrast, the effects in this paper are the unconditional effect on the 10th quantile of the *national* family income distribution. In other words, there are differences in both the definition of income, and the nature of the distributional statistic.

estimates from specifications without lags reported in Table 10; and the rest are mostly similar.<sup>39</sup> However, the precision is lower when we consider the long-run effects, and 27 of the 32 estimates noted above have larger standard errors. The clearest evidence of income increases come from the 10th and 15th quantiles, where the 16 estimates range between 0.11 and 0.39, and 13 of these are statistically significant at least at the 10 percent level. For the preferred specification, I find that the elasticities of 0.36, 0.33, 0.32 for the 5th, 10th, and 15th quantiles, with the latter two being statistically significant at the 5 percent level. Even the canonical specification (1) shows statistically significant long-run effects for the 10th and 15th quantiles, with elasticities of 0.18 and 0.11, respectively. I also note that while the estimates for the 5th quantile vary substantially across specifications without lagged minimum wages (elasticities ranging between -0.19 and 0.61 in Table 9), the long-run elasticities are more alike (ranging between 0.01 and 0.46, with six of the eight estimates larger than 0.2).

Overall, there is clear evidence that minimum wage increases raise family incomes at the bottom of the distribution, with the clearest effects at the 10th and 15th quantiles. When lagged effects are accounted for, the best performing specification 8 suggests that minimum wage elasticities for both of these quantiles slightly exceed 0.30. Across all models, the minimum wage elasticities for these family income quantiles range between 0.10 and 0.43 depending on the set of controls and the inclusion of lags.

## 5 Discussion

In a recent report, David Neumark concluded that “[T]he existing research literature provides no solid evidence of beneficial distributional effects of minimum wages for poor or low-income families on the whole. As a result, there is no basis for concluding that minimum wages reduce the proportion of families living in poverty or near poverty” (Neumark 2012). However, a careful look at the existing research does not seem to support this conclusion. The totality of evidence from the 12 published studies for which I could obtain or construct minimum wage elasticities point towards some poverty reduction from minimum wage increases. Only one study I reviewed stands out as suggesting that minimum wages actually increase poverty (Neumark, et al. 2005). However, as noted above, that study uses an unconventional methodology and makes a number of problematic assumptions; and its results seem to be qualitatively inconsistent with the rest of the literature. Indeed, the estimates I construct using Neumark’s own research with William Wascher from 2011 suggests that on net, minimum wages reduce the incidence of poverty for 21-44 year old adults, with an implied elasticity of -0.29. Excluding the one problematic study that appears to be an outlier (i.e., Neumark et al. 2005), a simple “average of averages” of 53 minimum wage elasticities across the 11 other studies and various demographic groups produces an estimate of -0.20; 48 of these elasticities are negative in sign. For the six of these 11 studies that actually report an estimate for the overall poverty rate (as opposed to for narrow subgroups), the “average of averages” produces a minimum wage elasticity

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<sup>39</sup>As before, the inclusion of lags is somewhat more likely to increase the magnitude of the coefficient when the specification includes state trends.

of -0.15. While averages across studies with different groups and specifications should always be taken with a grain of salt, they nevertheless contradict the claim that the literature does not provide evidence that minimum wages reduce the proportion of families living in poverty.

What *is* true about the existing studies is that they often suffer from serious limitations. These include imprecision owing to short sample periods, as well as inadequate controls for the type of state-level heterogeneity that I show to be quite important in this paper, and that have been shown to be important elsewhere with regard to minimum wages (e.g., Allegretto et al. 2013). However, the imperfection of the evidence does not constitute evidence of its absence. In this paper, I address these key imperfections by using a 23-year sample, a battery of controls for time-varying heterogeneity, a wide range of distributional statistics, and an array of falsification tests to assess the reliability of the models. I find robust evidence that minimum wages tend to reduce the incidence of poverty, and also proportions with incomes under one-half or three-quarters of the poverty line. Across all 16 specifications with alternative controls and lag structures, I find poverty rate elasticities ranging between -0.12 and -0.37, and most of these are statistically significant. Some of these specifications include ones that are very similar to ones used by Neumark and Wascher (2011), Burkhauser and Sabia (2007), and Sabia and Burkhauser (2010), except that I use more data.

An additional contribution of this paper is to estimate unconditional quantile partial effects of minimum wages on family incomes using the RIF regression approach of Firpo et al. (2009). I find moderate positive effects on the bottom quantiles of the equivalized family income distribution. The clearest increases are for the 10th and 15th quantiles, with elasticities ranging between 0.10 and 0.43 depending on controls and lags; my preferred specification suggests an elasticity of around 0.3 for the 10th quantile of equivalized family incomes.

I do find that the inclusion of time-varying regional controls and state-specific recession controls suggests larger anti-poverty effects of the policy, consistent with existing evidence on the non-random nature of minimum wage variation (e.g., Allegretto et al. 2013). Most notably, the canonical two-way fixed effects model that is used in most (though not all) of the literature both finds the smallest anti-poverty effects and also fails two types of falsification tests.<sup>40</sup> First, the canonical model suggests that minimum wages reduce the median family income (with an statistically significant elasticity of around -0.09), which is implausible; and this is true even with the inclusion of state per-capita GDP and unemployment rates as covariates. Second, the canonical model suggests that the share under one-half the poverty line rises *prior* to the minimum wage increase, even though the share is subsequently reduced after the increase. This pattern, too, is implausible. In contrast, the most saturated specification passes both of these falsification tests, lending additional support to the importance of controlling for spatial heterogeneity in minimum wage variation. I consider the most saturated specification to be the preferred one based both on its performance in these falsification tests, as well on *a priori* grounds of including a rich set of controls for the kind of heterogeneity that have been found to be important when studying employment effects. However, I recognize that

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<sup>40</sup>Overall, the inclusion of state-specific trends (the one form of time-varying effects that has been used in the existing minimum wage-poverty literature) does not appear to affect the estimates as much, especially when lags are included.

reasonable observers may disagree on exactly which specification is ideal, or on the relative weight to place on the evidence associated with each.<sup>41</sup> For this reason, I have shown much of my results using a wide range of specifications, and have reported and discussed the range of estimates across specifications, lags and cutoffs. It is important to note that Dube et al. (2010) and Allegretto et al. (2011, 2013) find that the inclusion of these time-varying controls tend to *reduce* the magnitude of estimated employment effects, while this paper finds that such controls *increase* the magnitude of the estimated effects on family incomes at the lower end of the distribution. These findings are mutually consistent with an explanation that higher minimum wages tend to more prevalent in times and places with worse economic outcomes—an interpretation that is further supported by the results from the falsification tests on the median income. These joint findings, however, are much less consistent with an explanation that the inclusion of spatial controls “throws out” too much identifying variation to be informative, as has been advanced by Neumark, Salas, and Wascher (2013).<sup>42</sup>

How do these moderate sized estimates of minimum wage impact on poverty and bottom income quantiles accord with cross-sectional evidence on the relationship between wages and family incomes? At least since Gramlich (1976), it has been recognized that the link between low wages and low family incomes is imperfect. First, it is true that workers in poverty disproportionately report earning wages at or below the minimum wage. Consider workers earning under \$10.10/hour, which is the proposed federal minimum wage under legislation currently in Congress, authored by Senator Tom Harkin and Congressman George Miller. Based on the March 2013 CPS, 63.2 percent of workers in poor families report hourly earnings of under \$10.10/ hour, as compared to 21.8 percent in the overall population. In other words, we expect minimum wages to affect earnings at the bottom of the family income distribution much more than elsewhere in the distribution, consistent with the results in this paper. At the same time, it is also true that many workers who report earning at or below the minimum wage are not in families below the official poverty line (e.g., Card and Krueger 1995, Sabia and Burkhauser 2010). For example, also from March 2013 CPS, I find that 18.9 percent of workers reporting earnings of under \$10.10/hour are in poverty, and 46.0 percent are under two times the poverty line. However, there are a number of problems in using the cross sectional relationship between reported wages and family incomes to simulate how the gains from a minimum wage increase will be distributed, as is done, for example, in Sabia and Burkhauser (2010). Most obviously, we would need to make assumptions about how behavior changes: this concerns not only employer activities on hiring and firing, but also worker actions including job search behavior, which could be vary by family income and other characteristics. In addition, simulations such as

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<sup>41</sup>One limitation of the preferred specification is that, for the most part, it does not use variation in minimum wages during recessionary periods. To the extent there may be heterogeneous impact by the phase of the business cycle, the estimates from the preferred specification are valid primarily for non-recessionary years.

<sup>42</sup>In their conclusion, they state the following. “We think the central question to ask is whether, out of their concern for avoiding minimum wage variation that is potentially confounded with other sources of employment change, [Allegretto et al. 2011] and [Dube et al. 2010] have thrown out so much useful and potentially valid identifying information that their estimates are uninformative or invalid. That is, have they thrown out the ‘baby’ along with – or worse yet, instead of – the contaminated ‘bathwater’? Our analysis suggests they have.”

these face a number of challenges which tend to suggest a weaker link between low wages and low family income than is truly the case. A key concern is measurement error in both wages and other sources of incomes (which includes wage and salary incomes of other family members). It is a straightforward point that measurement error in reported wages leads to an attenuation in the measured relationship between workers' wages and family incomes.<sup>43</sup> As a result, simulating wage changes for those earning around the minimum wage will typically suggest smaller effects on poverty and smaller income increases at the bottom quantiles than would occur in reality. This is because (1) some of the individuals with high reported wages in low income families are actually low wage earners, and (2) some of the low wage earners reporting high levels of other sources of income (including spousal wage and salary income) in reality are in poorer families. A related practical issue that arises from this is the treatment of sub-minimum wage workers. For example, in their simulations of raising the minimum wage from \$5.70 to \$7.25, Sabia and Burkhauser (2010) assume that all those with reported hourly earnings below \$5.55 will receive no wage increases because they are in the "uncovered sector." Moreover, they assume that no one above \$7.25 will get a raise. These particular assumptions seem implausible due to both measurement error issues, as well as the well known "lighthouse effect" phenomenon whereby even uncovered sector workers' wages are affected by minimum wages (Card and Krueger 1995; Boeri, Garibaldi, and Ribeiro 2011). Moreover, as Autor, Manning and Smith (2010) show, effects of the minimum wage extend up to the 20th percentile of the wage distribution, which would be unlikely absent some spillovers.<sup>44</sup> Therefore, results from simulation studies—such as those conducted by Sabia and Burkhauser (2010)—may not provide reliable guidance in assessing the impact of minimum wages on bottom incomes, making it critical for us to consider actual evidence from past minimum wage changes when analyzing policy proposals.

What does the evidence from this paper suggest about the likely impact on poverty from an immediate increase in the federal minimum wage from the current \$7.25/hour to \$10.10/hour, similar to the change proposed in the legislation by Senator Harkin and Congressman Miller? For my preferred specification, the estimated minimum wage elasticity for the poverty rate is -0.24, while

<sup>43</sup>Consider the relationship between own wage income,  $W$ , and family income  $F = W + I$ , where  $I$  represents other incomes (possibly others' wages). The linear approximation to the true relationship is represented by the population regression  $F = \beta W + u$ . Note that  $\beta = \frac{Cov(W+I, W)}{V(W)} = 1 + \frac{\sigma_{WI}}{\sigma_W^2}$ . So if wages are at all positively correlated with other sources of family incomes,  $I$ , as is likely, then  $\beta > 1$ .

Now consider the case where  $W$  is measured with error, so that  $\tilde{W} = W + e$ , and  $\tilde{F} = W + I + e$  are the observed wage and family income. This is slightly different from the textbook classical measurement error case because the measurement error,  $e$ , affects both the independent and dependent variables. Substituting the reported values into the true regression equation produces  $\tilde{F} - e = \beta(\tilde{W} - e)$ . Rearranging, we have  $\tilde{F} = \beta\tilde{W} + (1 - \beta)e = \beta\tilde{W} + \tilde{u}$ .

Note that  $\tilde{\beta} = \frac{Cov(\tilde{F}, \tilde{W})}{V(\tilde{W})}$  is the estimate from a population regression of  $\tilde{F}$  on  $\tilde{W}$ . Substituting  $\tilde{F} = \beta\tilde{W} + (1 - \beta)e$  into the expression for  $\tilde{\beta}$  we have  $\tilde{\beta} = \beta + (1 - \beta)\frac{\sigma_e^2}{\sigma_w^2 + \sigma_e^2}$ , which will be attenuated towards zero if  $\beta > 1$ , which is true if wages are at all positively correlated with other sources of family incomes.

<sup>44</sup>Autor, Manning and Smith also highlight how measurement error in wages and wage spillovers have similar implications about the effects of minimum on the observed wage distribution. This is an interesting point which affects the interpretation of the effects on higher wage quantiles. But for our purposes here, regardless of the interpretation of these effects as true spillovers or measurement error spillovers, ignoring them will tend to downward bias the predicted effects of minimum wages on poverty in simulation studies.



the elasticity accounting for lagged effects is -0.36. Starting from the current 17.5 percent poverty rate among the non-elderly population, the estimates suggest a 1.7 percentage point reduction in the poverty rate from a 39 percent increase in the minimum wage as proposed in the legislation. When we take lagged effects into account, the estimates suggest a somewhat larger reduction of 2.5 percentage points. Given the roughly 275 million non-elderly Americans in 2013, the proposed minimum wage increase is projected to reduce the number of non-elderly living in poverty by around 4.6 million, or by 6.8 million when longer term effects are accounted for. We can also expect the same minimum wage increase to raise family incomes by 12 percent at the 10th quantile of the equivalized family income distribution. For the average family near the 10th percentile in 2013, this translates into an annual increase of \$1,700.<sup>45</sup> Therefore, the increase in the federal minimum wage currently under consideration can play a modest but important role in reducing poverty and raising family incomes at the bottom. To put this in context, the poverty rate among the non-elderly rose by as much as 3.4 percentage points during the Great Recession; so the proposed minimum wage change can reverse at least half of that increase.

To be clear, if we were to assess public policies strictly based on their efficacy in reducing poverty, we should prefer more targeted policies like cash transfers, food stamps, and programs that raise the employment rate for highly disadvantaged groups. As many researchers, including Card and Krueger (1995), have pointed out, the minimum wage is a blunt tool when it comes to fighting poverty. In comparison, the EITC is better targeted at those with very low incomes. It is important to point out, however, that as currently structured, the EITC provides only minimal assistance to adults without children, and may hurt some of them through a negative incidence on wages (Rothstein 2011). More generally, in the presence of such incidence effects due to increased labor supply, the optimal policy calls for combining tax and transfers like the EITC with a minimum wage (Lee and Saez 2012).

However, motivations behind minimum wage policies go beyond reducing poverty. The popular support for minimum wages is in part fueled by a desire to raise earnings of low and moderate income families more broadly, and by concerns of fairness that seek to limit the extent of wage inequality (Green and Harrison 2010), or employers' exercise of market power (Fehr and Fischbacher 2004; Kahneman, Knetsch and Thaler 1986). The findings from this paper suggest that attaining such goals through increasing minimum wages is also consistent with a modest reduction in poverty, and moderate increases in family incomes at the bottom quantiles. Ultimately, this conclusion does not differ markedly from that reached by Card and Krueger (1995), or by Gramlich (1976) before them.

There are a number of outstanding issues that I did not address in this paper. The first set of issues concerns the definition of family income used in this analysis. Following official poverty

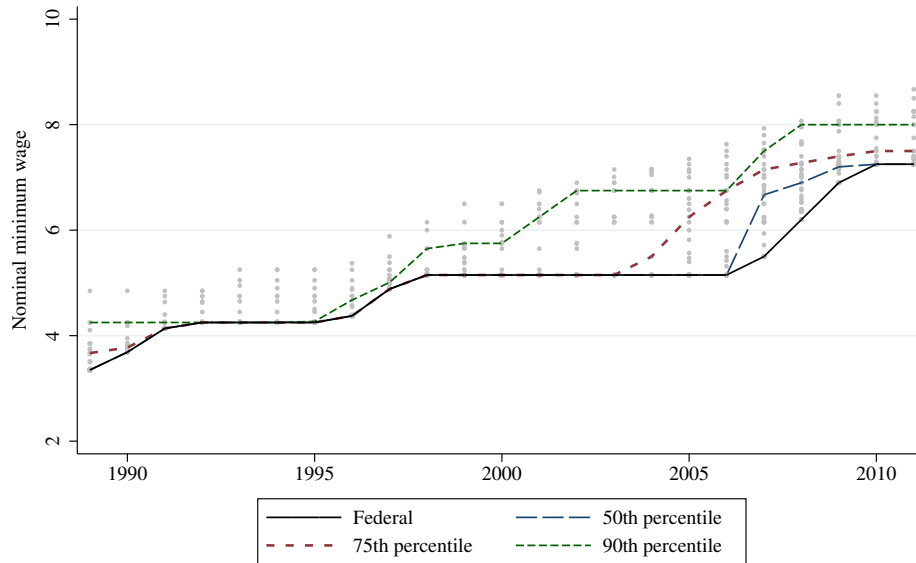
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<sup>45</sup>If we take the range of estimates from all specifications and lag structures, the proposed minimum wage changes can be expected to reduce the poverty rate among the non-elderly population by 0.8 and 2.9 percentage points, hence reducing the number of non-elderly individuals living in poverty by somewhere between 2.3 and 8.1 million. For the 10th quantile of family incomes, this translates to an annual income increase ranging between 5 and 17 percent, or between \$700 and \$2,400.

calculations, my family income definition includes both pre-tax earnings and cash transfers, and I have not decomposed the increase in income following minimum wage increases into component parts. At the same time, the estimates here do not capture the impact of minimum wages on non-cash transfers such as food stamps or housing, or on the receipt of tax credits such as EITC. Second, and relatedly, while my estimates control for state EITC supplements, I have not directly evaluated the interaction of EITC (or other policies) and minimum wages in this paper. As such, the minimum wage estimates I provide are the average effects over the sample period. At least for the poverty rate estimates, however, the effects appear to be qualitatively similar during the 1990s—a period with with less generous EITC—as compared to the 2000s with more generous EITC. And while existing work by Neumark and Wascher (2011) points to interactive effects of the two policies for some groups, this work does not directly show how the interactions affect the distribution of post-tax income that includes the tax credits themselves—which are of first order importance. Better understanding the source of income gains from minimum wage increases, as well as understanding the interactions of various policies in shaping the post-tax-and-transfer family income distribution, seem fruitful directions for future research.

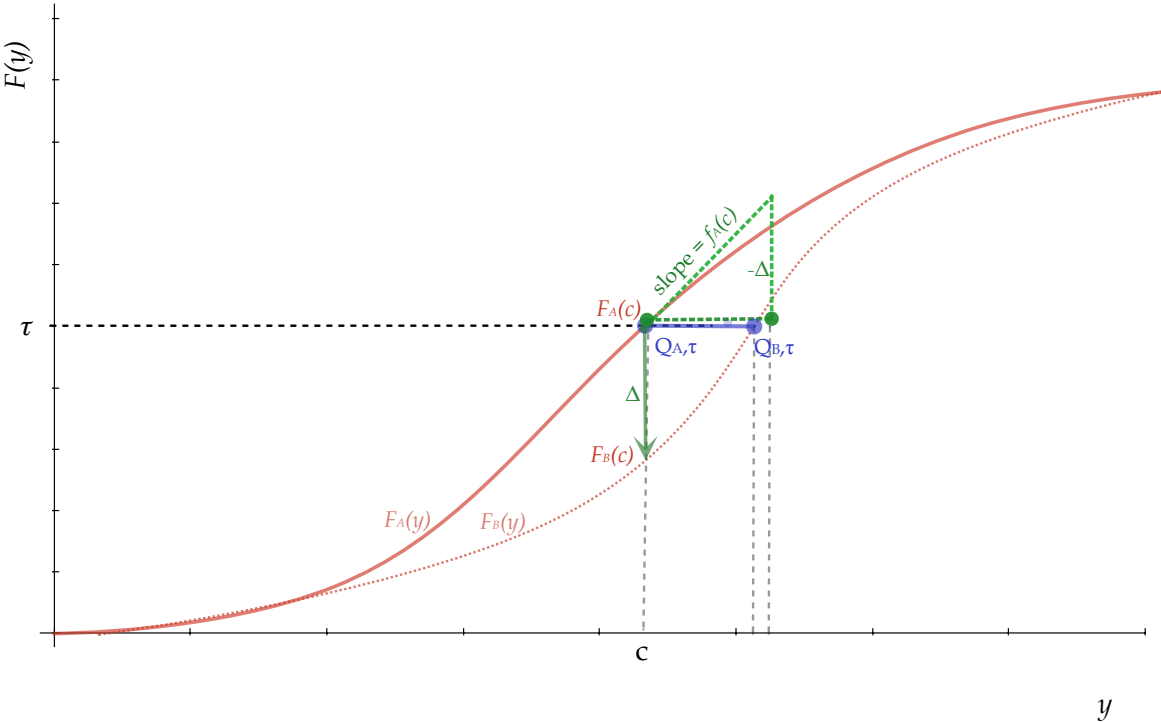
# Figures and Tables

Figure 1: Minimum wage variation over time



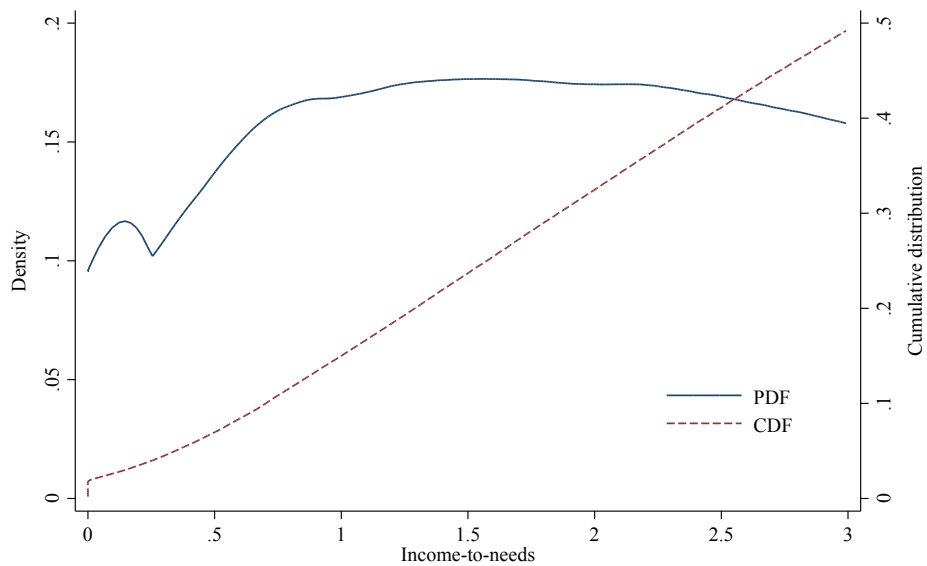
Notes: Annualized state-level minimum wages are constructed by averaging the effective nominal minimum wage (higher of the state or federal minimums) during the twelve months in a given year. Annualized minimum wage data from year  $t$  is matched with the CPS survey from March of year  $t + 1$ . The years in the horizontal axis represents year  $t$ , and not the CPS survey year  $t + 1$ . Minimum wage percentiles are weighted by the non-elderly population in the state using 1990-2012 March CPS surveys and person weights. The grey dots in the scatter plot represent annualized effective minimum wages in each state.

Figure 2: Unconditional quantile partial effects: locally inverting the counterfactual distribution



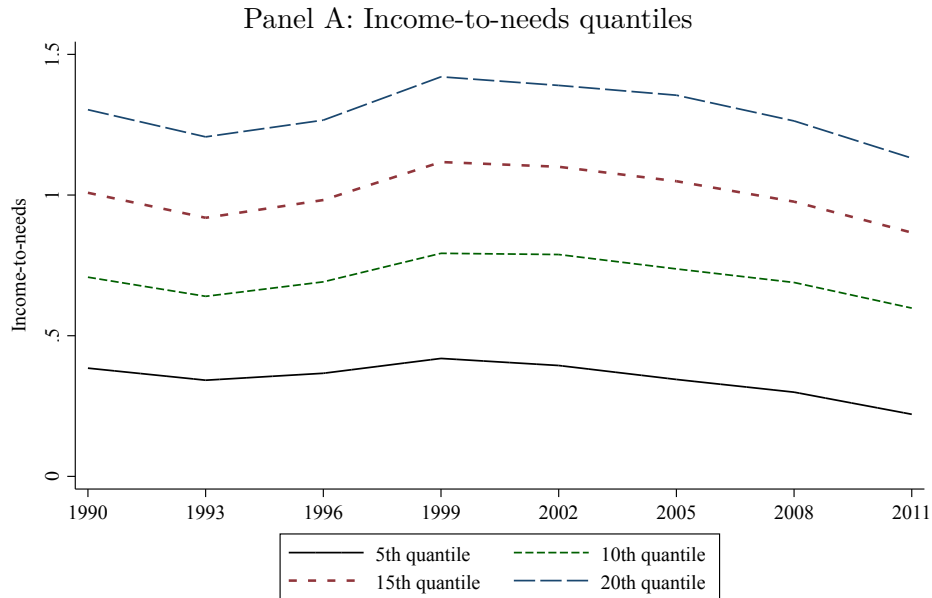
Notes. The figure shows how the unconditional quantile partial effect (UQPE) is approximately estimated for a treatment such as a small increase in the minimum wage.  $F_A(y)$  represents the actual distribution of outcome  $y$ , while  $F_B(y)$  is the counterfactual distribution absent the treatment. Under the assumption of conditional independence, the counterfactual distribution can be estimated using distribution regressions of the impact of the policy on the share below cutoffs  $c$  for all cutoffs. The UQPE for the  $\tau^{th}$  quantile is  $Q_{B,\tau} - Q_{A,\tau}$ , represented as the solid (blue) segment. The recentered influence function (RIF) regression approximates the UQPE by inverting the counterfactual CDF  $F_B(y)$  using a local linear approximation. After defining a cutoff  $c$  such that  $F_A(c) = \tau$  using the actual distribution  $F_A(y)$ , it uses the impact on the proportion below  $c$ , i.e.,  $F_B(c) - F_A(c)$ , and the slope of the CDF,  $f_A(c)$ , to estimate  $UQPE \approx -\frac{F_B(c) - F_A(c)}{f_A(c)}$ . The dashed (green) triangle shows the geometry of the RIF approximation to the UQPE, with is represented by the length of the triangle's base.

Figure 3: Probability density and cumulative distribution of income-to-needs: averages over 1990-2012 March CPS samples

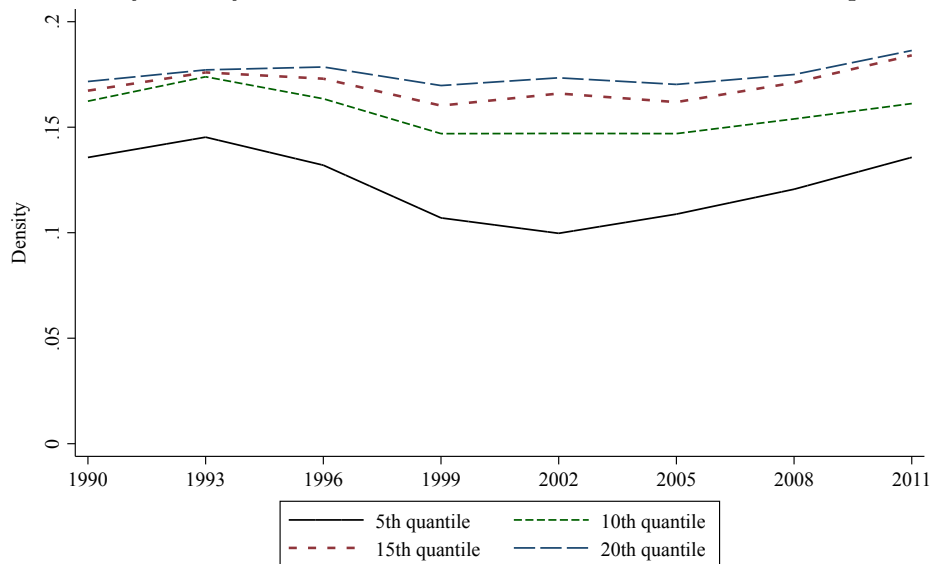


Notes: Both the probability density and cumulative distribution function are estimated using March CPS person weights for survey years 1990-2012 for the non-elderly population. The probability density is estimated using an Epanechnikov kernel and the STATA default bandwidth based on Silverman's rule-of-thumb.

Figure 4: Income-to-needs quantiles, and probability density at associated cutoffs over time

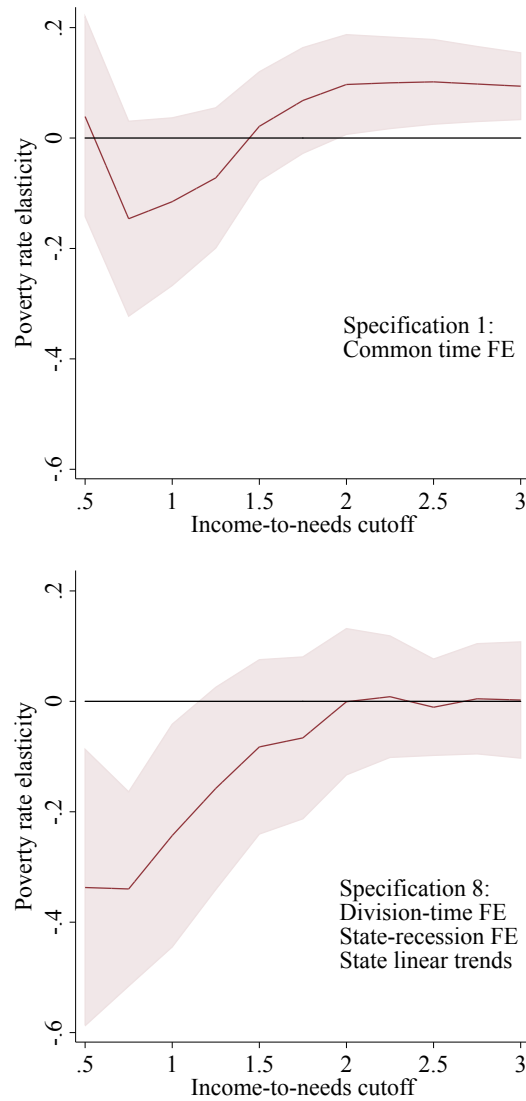


Panel B: Probability density of income-to-needs at cutoffs associated with specific quantiles



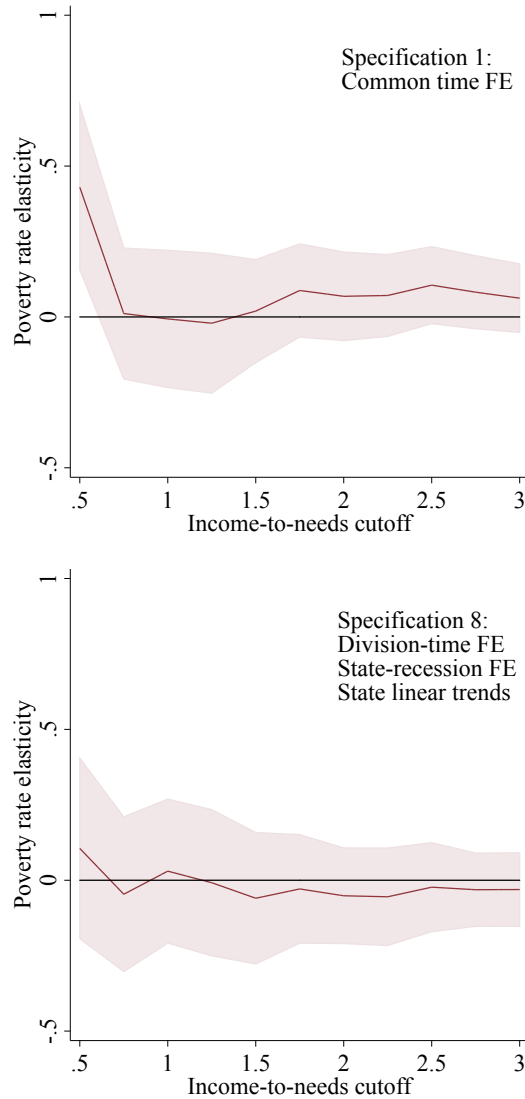
Notes: Panel A plots the values of the 5th, 10th, 15th and 20th quantiles of income-to-needs over time. Panel B plots the probability density of income-to-needs at specific cutoffs associated with each of these quantiles over time. Both panels are calculated for non-overlapping three-year intervals using March CPS person weights, where the horizontal axis indicates the beginning year of the interval. The final interval consists only of two years (2011, 2012). The probability density is estimated using an Epanechnikov kernel and the STATA default bandwidth based on Silverman's rule-of-thumb.

Figure 5: Minimum wage elasticities for proportions under alternative income-to-needs cutoffs



*Notes.* A series of linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 3.00) on log minimum wage and covariates. Elasticities are calculated by dividing the coefficient on log minimum wage by the sample proportion under the income-to-needs cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95 percent state-cluster-robust confidence intervals.

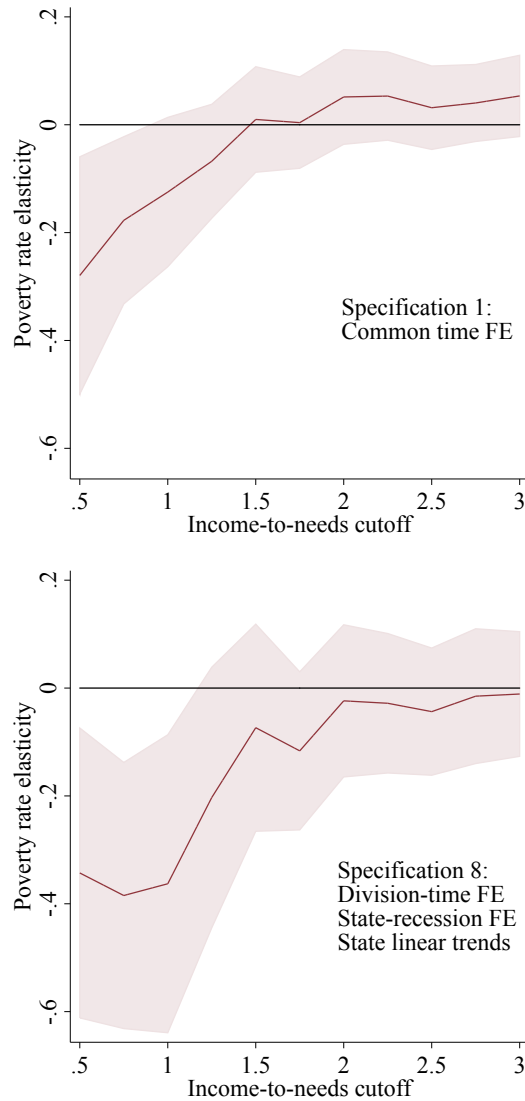
Figure 6: One-year leading minimum wage elasticities for proportions under alternative income-to-needs cutoffs



*Notes.* A series of linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 3.00) on distributed lags of log minimum wage and covariates. The leading elasticity is the one-year leading minimum wage coefficient divided by the sample proportion under the cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.

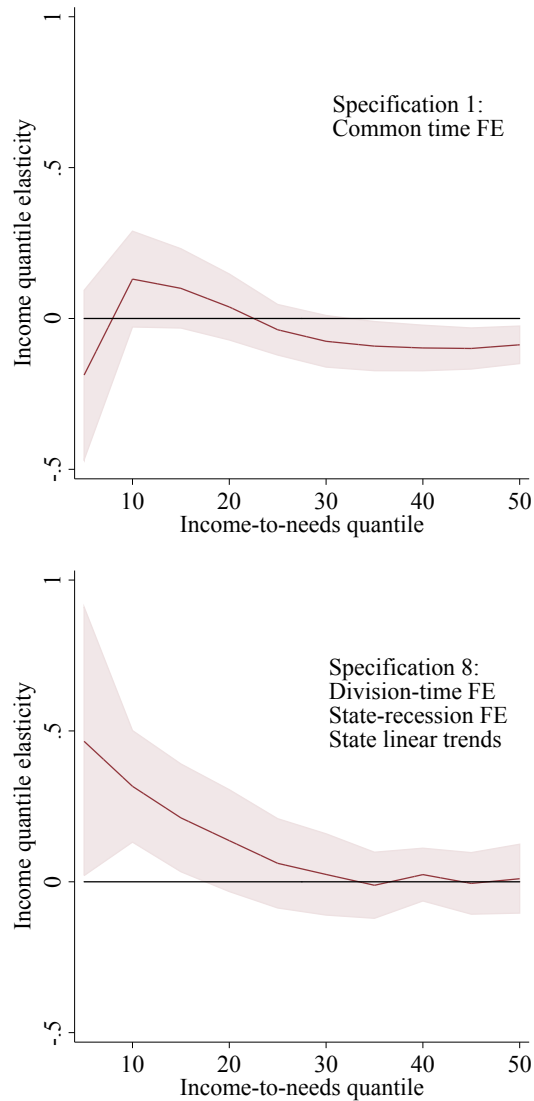


Figure 7: Long-run minimum wage elasticities for proportions under alternative income-to-needs cutoffs



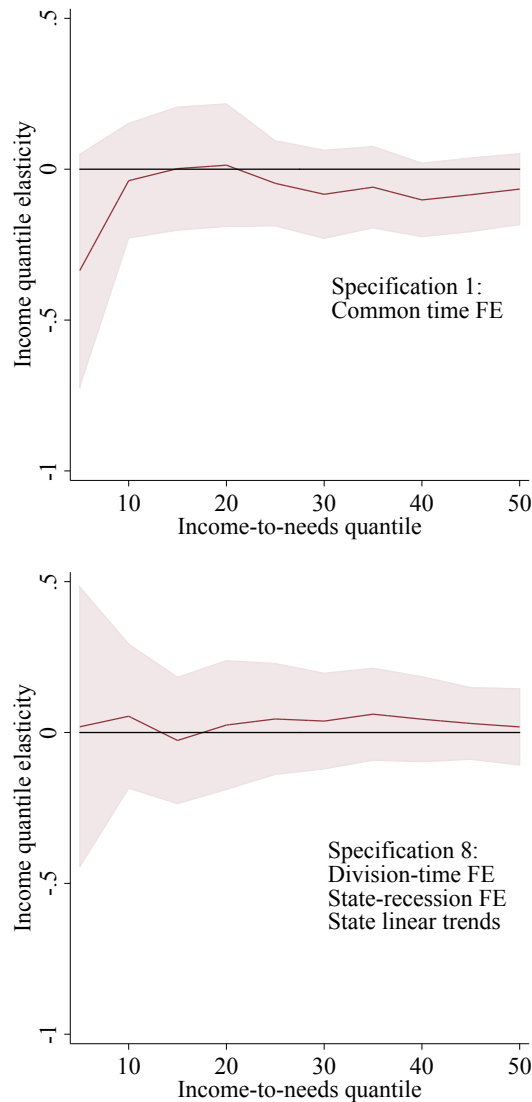
*Notes.* A series of linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 3.00) on distributed lags of log minimum wage and covariates. The long-run elasticity is calculated from the sum of the contemporaneous and one-year lagged log minimum wage coefficients, divided by the sample proportion under the cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.

Figure 8: Minimum wage elasticities for unconditional family income quantiles



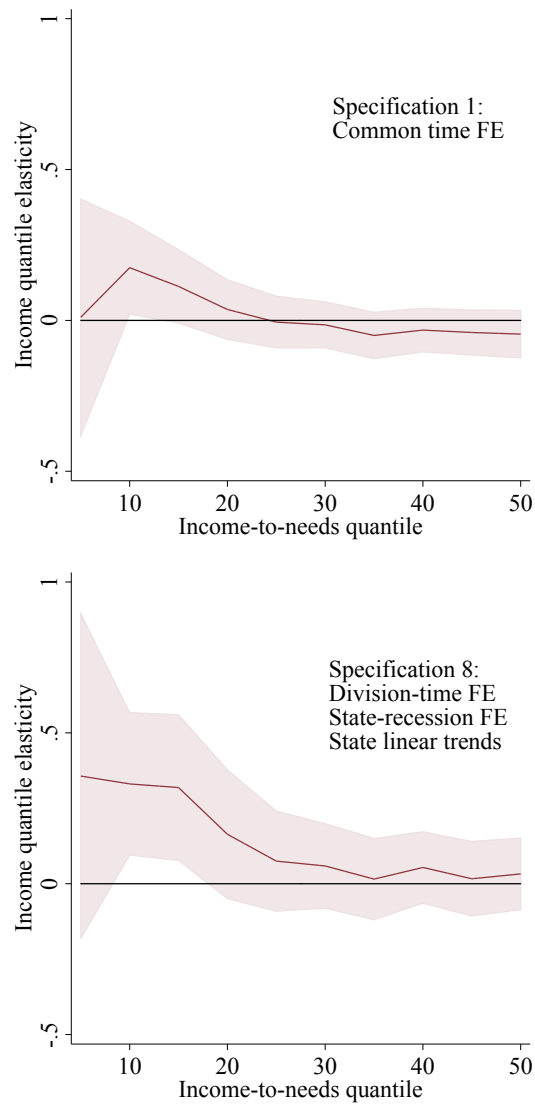
*Notes.* A series of linear probability models are estimated by regressing an indicator for being under income-to-needs cutoffs associated with alternative quantiles (between 5 and 50) on log minimum wage and covariates. Unconditional quantile partial effects (UQPE) for equalized family income are calculated by dividing the coefficient on log minimum wage by the negative of the income-to-needs density at the appropriate quantile. The UQPE estimates are subsequently divided by the income-to-needs cutoff for the quantile to transform the estimates into elasticities. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.

Figure 9: One year leading minimum wage elasticities for unconditional family income quantiles



*Notes.* A series of linear probability models are estimated by regressing an indicator for being under income-to-needs cutoffs associated with alternative quantiles (between 5 and 50) on distributed lags of log minimum wage and covariates. Unconditional quantile partial effects (UQPE) for the leading effect is calculated by dividing the coefficient on one-year leading log minimum wage by the negative of the income-to-needs density at the appropriate quantile. The leading UQPE estimates are subsequently divided by the income-to-needs cutoff for the quantile to transform the estimates into elasticities. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.

Figure 10: Long-run minimum wage elasticities for unconditional family income quantiles



*Notes.* A series of linear probability models are estimated by regressing an indicator for being under income-to-needs cutoffs associated with alternative quantiles (between 5 and 50) on distributed lags of log minimum wage and covariates. Unconditional quantile partial effects (UQPE) for the long-run effect is calculated by dividing the the sum of the contemporaneous and one-year lagged log minimum wage coefficients by the negative of the income-to-needs density at the appropriate quantile. The long-run UQPE estimates are subsequently divided by the income-to-needs cutoff for the quantile to transform the estimates into elasticities. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.

Table 1: Poverty related minimum wage elasticities in the existing literature

Study & Sample	Poverty Rate Elasticity	Other Elasticity	Data	Controls
<i>Addison &amp; Blackburn (1999)</i>				
Ages 16 - 19	-0.50 (0.22)		1983-1996 March CPS; S-Y	S, Y FE; LM; GLS
Ages 16 - 19	-0.61 (0.28)			S, Y FE; LM; PA Pov; GLS
Ages 16 - 19	-0.39 (0.22)			S, Y FE; LM; PA Pov
Ages 16 - 19	-0.17 (0.28)			S, Y FE; S-tr; LM; PA Pov; GLS
Ages 20 - 24	-0.33 (0.22)			S, Y FE; LM; GLS
Ages 20 - 24	-0.11 (0.28)			S, Y FE; LM; PA Pov; GLS
Ages 20 - 24	-0.22 (0.22)			S, Y FE; LM; PA Pov
Ages 20 - 24	-0.28 (0.22)			S, Y FE; S-tr; LM; PA Pov; GLS
Age > 24, Ed < 10 yrs	-0.50 (0.15)			S, Y FE; LM; GLS
Age > 24, Ed < 10 yrs	-0.31 (0.19)			S, Y FE; LM; PA Pov; GLS
Age > 24, Ed < 10 yrs	-0.46 (0.15)			S, Y FE; LM; PA Pov
Age > 24, Ed < 10 yrs	-0.46 (0.15)			S, Y FE; S-tr; LM; PA Pov; GLS
<i>Burkhauser &amp; Sabia (2007)</i>				
Ages 16-64	-0.19 (0.12)		1988-2003 March CPS; S-Y	S, Y FE
Ages 16-64	-0.15 (0.11)			S, Y FE; LM
Ages 16-64	-0.11 (0.10)			S, Y FE; LM
Ages 16-64	-0.08 (0.12)			S, Y FE; LM; GLS
SF HH w/ kids	-0.21 (0.13)			S, Y FE
SF HH w/ kids	-0.16 (0.13)			S, Y FE; LM
SF HH w/ kids	-0.16 (0.13)			S, Y FE; LM
SF HH w/ kids	-0.07 (0.13)			S, Y FE; LM; GLS
<i>Card &amp; Krueger (1995)*</i>				
Age ≥ 16	-0.39 (0.21)	Fam earn p10: 0.28 (0.05)	1989-1991 March CPS; S-Y	FD
Age ≥ 16	-0.16 (0.26)	Fam earn p10: 0.20 (0.06)		FD; LM
Age ≥ 16	-0.36 (0.31)			FD; LM
Age ≥ 16	-0.08 (0.29)			FD; LM; Region
<i>DeFina (2008)</i>				
Fem HH w/ kids	-0.42 (0.15)	Post-tax: -0.46 (0.15)	1991-2002 March CPS; S-Y	S, Y FE
Fem HH w/ kids < Col.	-0.35 (0.16)	Post-tax: -0.40 (0.16)		S, Y FE

*Notes.* All estimates expressed as elasticities, with standard errors in parentheses when available. For papers marked by a \*, implied elasticities and/or their standard errors were calculated using reported coefficient estimates and sample means, rather than the elasticities being reported directly. Sample abbreviations: Ed = education; HS = high school degree; Col.=college; SF =single female; Fem = female; HH = head of household; Bl = Black; Hisp = Hispanic. Other elasticity categories: Fam inc p10 = family earnings elasticity at the 10th percentile; Post-tax = poverty rate elasticity using post-tax and transfer income; Pov Gap<sup>2</sup> = squared poverty gap elasticity; N% Pov = poverty rate elasticity using N% of poverty as the threshold. Data abbreviations (for unit of observation): S = state; S-Y = state-year; NY MA = N-year moving average; Ind. = individual. Controls abbreviations: S = State; Y = Year; FE = fixed effects; FD = first difference; LDV = lagged dependent variable; S-tr, S-tr<sup>2</sup> = linear, quadratic state-specific trends; Scale Sh. = Scale shifts in the income-to-needs distribution; LM = labor market controls; PA Pov = Prime age poverty rate control; WQ = wage quantiles; Emp = employment.

Table 1: Poverty related minimum wage elasticities in the existing literature (continued)

Study & Sample	Poverty Rate Elasticity	Other Elasticity	Data	Controls
<i>Gunderson &amp; Ziliak (2004)</i>				
All	-0.03 (0.01)	Pov gap <sup>2</sup> : -0.04 (0.01)	1980-1999 March CPS; 3Y MA S-Y	S, Y FE; WQ; LM; S-tr; LDV
Fem HH	-0.02 (0.01)	Pov gap <sup>2</sup> : -0.03 (0.01)		S, Y FE; WQ; LM; S-tr; LDV
Married H	-0.03 (0.03)	Pov gap <sup>2</sup> : -0.01 (0.03)		
Black	-0.06 (0.03)	Pov gap <sup>2</sup> : -0.01 (0.02)		
White	-0.04 (0.10)	Pov gap <sup>2</sup> : -0.05 (0.02)		S, Y FE; WQ; LM; S-tr; LDV
<i>Morgan &amp; Kichham (2001)*</i>				
Kids	-0.39 (0.08)		1987-1996 March CPS; 5Y MA	S FE; LM
<i>Neumark, Schweitzer, &amp; Wascher (2005)*</i>				
All	0.39 (0.22)	150% Pov: 0.41 (0.13)	1987-1996 March CPS; Ind	S, Y Scale Sh.
<i>Neumark &amp; Wascher (2011)*</i>				
Ages 21-44	-0.29	50% Pov: -0.42	1997-2006 March CPS; Ind.	S, Y FE; LM
SF, 21-44	0.00	50% Pov: -0.51		S, Y FE; LM
SF, 21-44 ≤ HS	-0.19	50% Pov: -0.45		S, Y FE; LM
SF, 21-44, BI/Hisp	-0.19	50% Pov: -0.11		S, Y FE; LM
Ages 21-44 w/kids	-0.21	50% Pov: -0.27		S, Y FE; LM
SF, 21-44 w/kids	0.08	50% Pov: -0.45		S, Y FE; LM
SF, 21-44 ≤ HS w/kids	-0.22	50% Pov: -0.40		S, Y FE; LM
SF, 21-44, BI/Hisp w/kids	-0.20	50% Pov: -0.31		S, Y FE; LM
<i>Sabia (2008)</i>				
SF HH, 18-55, w/kids	-0.22 (0.17)		1991-2004 March CPS; Ind.	S, Y FE; S-tr <sup>2</sup> ; LM
SF HH, 18-55, < HS w/kids	-0.28 (0.39)			S, Y FE; S-tr <sup>2</sup> ; LM
SF HH, 18-55, ≥ HS w/kids	-0.17 (0.23)			S, Y FE; S-tr <sup>2</sup> ; LM

*Notes.* All estimates expressed as elasticities, with standard errors in parentheses when available. For papers marked by a \*, implied elasticities and/or their standard errors were calculated using reported coefficient estimates and sample means, rather than the elasticities being reported directly. Sample abbreviations: Ed = education; HS = high school degree; Col.=college; SF = single female; Fem = female; HH = head of household; BI = Black; Hisp = Hispanic. Other elasticity categories: Fam inc p10 = family earning elasticity at the 10th percentile; Post-tax = poverty rate elasticity using post-tax and transfer income; Pov Gap<sup>2</sup> = squared poverty gap elasticity; N% Pov = poverty rate elasticity using N% of poverty as the threshold. Data abbreviations (for unit of observation): S = state; Y = year; S-Y = state-year; NY MA = N-year moving average; Ind. = individual. Controls abbreviations: S = State; Y = Year; FE = fixed effects; FD = first difference; LDV = lagged dependent variable; S-tr, S-tr<sup>2</sup> = linear, quadratic state-specific trends; Scale Sh. = Scale shifts in the income-to-needs distribution; LM = labor market controls; PA Pov = Prime age poverty rate control; WQ = wage quantiles; Emp = employment.

Table 1: Poverty related minimum wage elasticities in the existing literature (continued)

Study & Sample	Poverty Rate Elasticity	Other Elasticity	Data	Controls
<i>Sabia &amp; Burkhauser (2010)</i> Ages 16-64	-0.05 (0.15)	150% Pov: 0.18 (0.14)	2003-2007 March CPS; S-Y	S, Y FE; LM
<i>Sabia &amp; Nielsen (2013)*</i> Ages 16-64	-0.31 (0.31)	150% Pov: -0.20 (0.17)	1996-2007 SIPP; Ind	S, Y FE
Ages 16-64	-0.03 (0.12)	150% Pov: 0.03 (0.07)		S, Y FE; S-tr
Ages 16-29, < HS	-0.52 (0.63)	150% Pov: -0.57 (0.35)		S, Y FE
Ages 16-29, < HS	1.21 (0.63)	150% Pov: 0.86 (0.25)		S, Y FE; S-tr
Ages 16-24, BI	0.60 (0.72)	150% Pov: 0.07 (0.30)		S, Y FE
Ages 16-24, BI	-0.46 (0.63)	150% Pov: -0.23 (0.30)		S, Y FE; S-tr
Ages 30-54, ≥ HS	-0.18 (0.18)	150% Pov: -0.23 (0.18)		S, Y FE
Ages 30-54, ≥ HS	0.18 (0.18)	150% Pov: -0.23 (0.30)		S, Y FE; S-tr
<i>Stevens &amp; Sessions (2001)*</i> All	-0.28 (0.17)		1984-1998 March CPS; S-Y	S, Y FE
<i>Average of averages: Every group</i> All 12 studies:	-0.15			
11 studies excluding Neumark et al. (2005):	-0.20			
<i>Average of averages: Overall population</i> All 7 studies:	-0.07			
6 studies excluding Neumark et al. (2005):	-0.15			

*Notes.* All estimates expressed as elasticities, with standard errors in parentheses when available. For papers marked by a \*, implied elasticities and/or their standard errors were calculated using reported coefficient estimates and sample means, rather than the elasticities being reported directly. Sample abbreviations: Ed = education; HS = high school degree; Col.=college; SF = single female; Fem = female; HH = head of household; BI = Black; Hisp = Hispanic. Other elasticity categories: Fam inc p10 = family earnings elasticity at the 10th percentile; Post-tax = poverty rate elasticity using post-tax and transfer income; Pov Gap<sup>2</sup> = squared poverty gap elasticity; N% Pov = poverty rate elasticity using N% of poverty as the threshold. Data abbreviations (for unit of observation): S = state; S-Y = state-year; NY MA = N-year moving average; Ind. = individual. Controls abbreviations: S = State; Y = Year; FE = fixed effects; FD = first difference; LDV = lagged dependent variable; S-tr, S-tr<sup>2</sup> = linear, quadratic state-specific trends; Scale Sh. = Scale shifts in the income-to-needs distribution; LM = labor market controls; PA Pov = Prime age poverty rate control; WQ = wage quantiles; Emp = employment. Average of Averages = equally weighted average across studies of the within-study average elasticity, either for every demographic group, or just for the overall population (defined as 16-64 year olds or broader).

Table 2: Income-to-needs quantiles and densities

Quantile	Income-to-needs cutoff	Density
5	0.345	0.115
10	0.702	0.160
15	1.000	0.169
20	1.290	0.175
25	1.574	0.177
30	1.857	0.175
35	2.144	0.174
40	2.433	0.170
45	2.732	0.164
50	3.042	0.157

*Notes.* Income-to-needs quantiles, and kernel densities at cutoffs associated with the quantiles, are estimated for the nonelderly population using March CPS data from 1990-2012 and person weights. Kernel density estimates use an Epanechnikov kernel and the STATA default bandwidth based on Silverman's rule-of-thumb.



Table 3: Distributional statistics by sample group and income-to-needs cutoffs

Income-to-needs cutoff	Prop. below:		Squared gap		Proportions below:							
	Sq root scl		Index		Standard equiv scale							
	Overall	Gap Index	Overall	Gap Index	Overall	1990-99	2000-12	Children	Single mothers	Black & Latino	Ages 21-44	Ages 21-44, HS
0.50	0.071	0.041	0.033	0.070	0.070	0.070	0.069	0.104	0.207	0.135	0.062	0.095
0.75	0.110	0.057	0.042	0.108	0.108	0.111	0.106	0.160	0.302	0.209	0.097	0.150
1.00	0.153	0.075	0.053	0.150	0.150	0.154	0.148	0.216	0.383	0.284	0.135	0.209
1.25	0.198	0.094	0.064	0.193	0.193	0.197	0.190	0.271	0.458	0.355	0.176	0.270
1.50	0.243	0.114	0.077	0.237	0.237	0.241	0.235	0.325	0.524	0.424	0.220	0.334
1.75	0.289	0.135	0.089	0.281	0.281	0.286	0.278	0.378	0.585	0.487	0.265	0.395
2.00	0.334	0.156	0.103	0.325	0.325	0.331	0.321	0.428	0.636	0.543	0.311	0.455
2.25	0.379	0.177	0.116	0.368	0.368	0.376	0.364	0.476	0.682	0.594	0.357	0.512
2.50	0.423	0.199	0.130	0.411	0.411	0.421	0.405	0.523	0.725	0.639	0.402	0.565
2.75	0.467	0.220	0.144	0.453	0.453	0.465	0.445	0.567	0.762	0.680	0.447	0.615
3.00	0.509	0.241	0.157	0.493	0.493	0.508	0.484	0.608	0.794	0.716	0.490	0.660
Observations	3,646,565	3,646,565	3,646,565	3,646,565	3,646,565	1,271,657	2,374,908	1,173,395	189,454	979,360	1,408,250	622,515

Notes. Each cell contains the proportion of the sample (or the mean of a poverty measure) under the income-to-needs cutoff, using the indicated poverty measure. The sample consists of all non-elderly individuals in March CPS surveys for years between 1990 and 2012. Columns 1, and columns 4 through 9 report the proportions below alternative income-to-needs cutoffs. Column 1 uses the square root equivalence scale, while all others use the implicit equivalence scale used to calculate the official poverty rate. Column 2 reports the gap index, and column 3 the squared gap index. Columns 7 through 11 report the proportions for the following subsamples: children under 18; single mothers; black or Latino individuals; 21-44 year old adults; and 21-44 year old adults with high school or lesser education. All calculations use the March CPS person weights.

Table 4: Minimum wage elasticities for proportions under alternative income-to-needs cutoffs

Income-to-needs cutoff	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0.50	0.039 (0.090)	-0.131 (0.091)	0.002 (0.076)	-0.138 (0.091)	-0.374*** (0.127)	-0.248** (0.120)	-0.430*** (0.093)	-0.337*** (0.125)
0.75	-0.146 (0.088)	-0.151 (0.109)	-0.217** (0.082)	-0.202* (0.105)	-0.332*** (0.089)	-0.215** (0.097)	-0.450*** (0.076)	-0.340*** (0.088)
1.00	-0.115 (0.076)	-0.127* (0.075)	-0.165** (0.064)	-0.146** (0.070)	-0.212** (0.083)	-0.166* (0.098)	-0.299*** (0.079)	-0.243** (0.100)
1.25	-0.072 (0.063)	-0.085 (0.053)	-0.123** (0.056)	-0.106** (0.051)	-0.131* (0.074)	-0.123 (0.084)	-0.188** (0.079)	-0.158* (0.091)
1.50	0.021 (0.049)	-0.030 (0.045)	-0.009 (0.042)	-0.025 (0.043)	-0.063 (0.062)	-0.078 (0.070)	-0.083 (0.066)	-0.083 (0.079)
1.75	0.068 (0.048)	-0.016 (0.040)	0.021 (0.041)	-0.035 (0.040)	0.000 (0.056)	-0.037 (0.064)	-0.039 (0.059)	-0.066 (0.073)
2.00	0.097** (0.045)	-0.001 (0.034)	0.049 (0.041)	-0.022 (0.036)	0.051 (0.055)	0.009 (0.058)	0.020 (0.059)	-0.001 (0.066)
Observations	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525
Division $\times$ Time FE					Y	Y	Y	Y
State $\times$ Recession FE			Y	Y			Y	Y
State linear trends		Y		Y		Y		Y

*Notes.* Linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 2.00) on log minimum wage and covariates. Elasticities are calculated by dividing the coefficient on log minimum wage by the sample proportion under the income-to-needs cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the table. State-cluster-robust standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.5$ , \*\*\*  $p < 0.01$

Table 5: Leading minimum wage elasticities for proportions under alternative income-to-needs cutoffs

Income-to-needs cutoff	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0.50	0.430*** (0.136)	0.246** (0.115)	0.472*** (0.161)	0.380*** (0.120)	-0.132 (0.141)	-0.016 (0.133)	-0.068 (0.154)	0.105 (0.149)
0.75	0.011 (0.108)	-0.004 (0.131)	0.129 (0.105)	0.167 (0.113)	-0.257** (0.097)	-0.148 (0.098)	-0.199 (0.121)	-0.046 (0.128)
1.00	-0.007 (0.113)	-0.003 (0.119)	0.110 (0.101)	0.141 (0.103)	-0.130 (0.086)	-0.067 (0.089)	-0.077 (0.109)	0.030 (0.119)
1.25	-0.021 (0.115)	-0.014 (0.105)	0.046 (0.105)	0.047 (0.101)	-0.100 (0.089)	-0.066 (0.087)	-0.073 (0.115)	-0.008 (0.121)
1.50	0.019 (0.085)	-0.008 (0.079)	0.058 (0.089)	0.024 (0.092)	-0.097 (0.072)	-0.097 (0.074)	-0.088 (0.096)	-0.060 (0.108)
1.75	0.088 (0.077)	0.026 (0.068)	0.124 (0.075)	0.047 (0.075)	-0.023 (0.063)	-0.051 (0.058)	-0.009 (0.084)	-0.029 (0.090)
2.00	0.068 (0.073)	-0.005 (0.062)	0.093 (0.075)	0.004 (0.073)	-0.032 (0.064)	-0.060 (0.057)	-0.033 (0.079)	-0.051 (0.079)
Observations	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525
Division $\times$ Time FE					Y	Y	Y	Y
State $\times$ Recession FE			Y	Y			Y	Y
State linear trends		Y		Y		Y		Y

*Notes.* Linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 2.00) on distributed lags of log minimum wage and covariates. The leading elasticity is the one-year leading minimum wage coefficient divided by the sample proportion under the cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the table. State-cluster-robust standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.5$ , \*\*\*  $p < 0.01$

Table 6: Long-run minimum elasticities for proportions under alternative income-to-needs cutoffs

Income-to-needs cutoff	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0.50	-0.279** (0.110)	-0.326*** (0.110)	-0.287* (0.144)	-0.383** (0.150)	-0.360** (0.169)	-0.275 (0.168)	-0.402*** (0.113)	-0.343** (0.134)
0.75	-0.177** (0.077)	-0.179** (0.085)	-0.334*** (0.107)	-0.337*** (0.118)	-0.255** (0.113)	-0.212 (0.128)	-0.441*** (0.099)	-0.385*** (0.123)
1.00	-0.125* (0.069)	-0.142* (0.075)	-0.292*** (0.093)	-0.288*** (0.097)	-0.171 (0.109)	-0.170 (0.127)	-0.366*** (0.107)	-0.363** (0.138)
1.25	-0.068 (0.053)	-0.090 (0.061)	-0.199** (0.077)	-0.181** (0.073)	-0.073 (0.097)	-0.096 (0.108)	-0.201* (0.107)	-0.203* (0.120)
1.50	0.010 (0.049)	-0.028 (0.054)	-0.073 (0.067)	-0.067 (0.063)	0.002 (0.079)	-0.030 (0.086)	-0.049 (0.087)	-0.074 (0.096)
1.75	0.004 (0.042)	-0.045 (0.044)	-0.090 (0.055)	-0.106** (0.051)	0.021 (0.065)	-0.017 (0.072)	-0.069 (0.068)	-0.116 (0.073)
2.00	0.052 (0.044)	-0.010 (0.045)	-0.036 (0.057)	-0.063 (0.054)	0.083 (0.059)	0.041 (0.065)	0.014 (0.068)	-0.024 (0.070)
Observations	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525
Division $\times$ Time FE					Y	Y	Y	Y
State $\times$ Recession FE			Y	Y			Y	Y
State linear trends		Y		Y		Y		Y

*Notes.* Linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 2.00) on distributed lags of log minimum wage and covariates. The long-run elasticity is calculated from the sum of the contemporaneous and one-year lagged log minimum wage coefficients, divided by the sample proportion under the cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the table. State-cluster-robust standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.5$ , \*\*\*  $p < 0.01$

Table 7: Minimum wage elasticities for proportions under alternative income-to-needs cutoffs, by subgroup and sample period

Income-to-needs cutoff	Overall		1990-99		2000-12		Children		Single mothers		Black & Latino		Ages 21-44		Ages 21-44, HS	
0.50	-0.337*** (0.125)	-0.977*** (0.170)	-0.175 (0.158)	-0.465*** (0.149)	-0.324* (0.168)	-0.246 (0.235)	-0.215 (0.136)	-0.403** (0.169)								
0.75	-0.340*** (0.088)	-0.749*** (0.127)	-0.280** (0.118)	-0.425*** (0.119)	-0.232** (0.097)	-0.566*** (0.151)	-0.313*** (0.078)	-0.481*** (0.085)								
1.00	-0.243** (0.100)	-0.294* (0.165)	-0.226* (0.123)	-0.313** (0.127)	-0.164* (0.087)	-0.401*** (0.116)	-0.197* (0.108)	-0.268** (0.105)								
1.25	-0.158* (0.091)	-0.126 (0.170)	-0.189* (0.111)	-0.230** (0.103)	-0.073 (0.069)	-0.316*** (0.074)	-0.120 (0.101)	-0.165* (0.088)								
1.50	-0.083 (0.079)	0.000 (0.176)	-0.110 (0.093)	-0.192* (0.106)	-0.093 (0.082)	-0.138*** (0.049)	-0.026 (0.081)	-0.081 (0.083)								
1.75	-0.066 (0.073)	0.009 (0.157)	-0.099 (0.078)	-0.181** (0.089)	-0.145 (0.090)	-0.171*** (0.048)	0.005 (0.083)	-0.004 (0.085)								
2.00	-0.001 (0.066)	0.028 (0.168)	-0.048 (0.067)	-0.089 (0.082)	-0.114 (0.077)	-0.060 (0.046)	0.076 (0.067)	0.082 (0.067)								
Observations	3,646,525	1,271,617	2,374,908	1,173,388	189,452	979,334	1,408,230	622,507								
Division × Time FE	Y	Y	Y	Y	Y	Y	Y	Y								
State × Recession FE	Y	Y	Y	Y	Y	Y	Y	Y								
State linear trends	Y	Y	Y	Y	Y	Y	Y	Y								

Notes. Linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 2.00) on log minimum wage and covariates. Elasticities are calculated by dividing the coefficient on log minimum wage by the sample proportion under the income-to-needs cutoff. The regression specification includes state fixed effects, division-specific year effects, state-specific recession year effects, state-specific linear trends, and state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. State-cluster-robust standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.5$ , \*\*\*  $p < 0.01$

Table 8: Minimum wage elasticities for alternative poverty measures

Income-to-needs cutoff	Poverty rate: alternative equivalence scales		Alternative poverty measures	
	Standard scale	Square root scale	Poverty gap	Squared poverty gap
0.50	-0.337*** (0.125)	-0.369*** (0.125)	-0.326* (0.166)	-0.593 (0.356)
0.75	-0.340*** (0.088)	-0.359*** (0.100)	-0.336*** (0.125)	-0.767** (0.370)
1.00	-0.243** (0.100)	-0.328*** (0.102)	-0.323*** (0.101)	-0.964** (0.376)
1.25	-0.158* (0.091)	-0.131 (0.082)	-0.284*** (0.091)	-1.129*** (0.390)
1.50	-0.083 (0.079)	-0.079 (0.085)	-0.232*** (0.085)	-1.238*** (0.414)
1.75	-0.066 (0.073)	-0.015 (0.075)	-0.186** (0.078)	-1.288*** (0.441)
2.00	-0.001 (0.066)	0.036 (0.073)	-0.148** (0.073)	-1.301*** (0.470)
Observations	3,646,525	3,646,525	3,646,525	3,646,525
Division $\times$ Time FE	Y	Y	Y	Y
State $\times$ Recession FE	Y	Y	Y	Y
State linear trends	Y	Y	Y	Y

*Notes.* Linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 2.00) on log minimum wage and covariates. Elasticities are calculated by dividing the coefficient on log minimum wage by the sample proportion under the income-to-needs cutoff. The regression specification includes state fixed effects, division-specific year effects, state-specific recession year effects, state-specific linear trends, and state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. State-cluster-robust standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.5$ , \*\*\*  $p < 0.01$

Table 9: Minimum wage elasticities for unconditional quantiles of equivalized family incomes

Income-to-needs quantile	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
5	-0.187 (0.140)	0.056 (0.116)	-0.026 (0.141)	0.119 (0.144)	0.476** (0.184)	0.333 (0.209)	0.613*** (0.163)	0.466** (0.222)
10	0.131 (0.079)	0.139 (0.104)	0.184** (0.074)	0.182* (0.101)	0.315*** (0.089)	0.202* (0.101)	0.430*** (0.072)	0.316*** (0.092)
15	0.100 (0.065)	0.111* (0.066)	0.144** (0.056)	0.127** (0.062)	0.190** (0.074)	0.147* (0.087)	0.264*** (0.070)	0.212** (0.089)
20	0.038 (0.054)	0.067 (0.045)	0.089* (0.050)	0.087* (0.044)	0.102 (0.068)	0.118 (0.075)	0.149** (0.073)	0.136 (0.084)
25	-0.037 (0.042)	0.020 (0.039)	-0.006 (0.036)	0.025 (0.038)	0.040 (0.057)	0.055 (0.064)	0.058 (0.062)	0.061 (0.074)
30	-0.076* (0.043)	0.010 (0.034)	-0.038 (0.038)	0.024 (0.036)	-0.031 (0.055)	0.008 (0.058)	-0.002 (0.058)	0.024 (0.067)
35	-0.092** (0.041)	0.002 (0.028)	-0.041 (0.039)	0.026 (0.029)	-0.060 (0.046)	-0.026 (0.050)	-0.018 (0.047)	-0.012 (0.055)
40	-0.098** (0.038)	0.001 (0.023)	-0.041 (0.039)	0.032 (0.026)	-0.036 (0.043)	0.004 (0.043)	0.009 (0.042)	0.024 (0.044)
45	-0.099*** (0.034)	-0.010 (0.024)	-0.047 (0.036)	0.017 (0.028)	-0.051 (0.039)	-0.012 (0.046)	-0.012 (0.039)	-0.005 (0.051)
50	-0.087*** (0.031)	-0.009 (0.025)	-0.035 (0.033)	0.030 (0.030)	-0.050 (0.042)	-0.008 (0.049)	-0.009 (0.044)	0.010 (0.057)
Observations	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525
Division $\times$ Time FE					Y	Y	Y	Y
State $\times$ Recession FE			Y	Y			Y	Y
State linear trends		Y		Y		Y		Y

*Notes.* Linear probability models are estimated by regressing an indicator for being under the income-to-needs cutoff associated with a quantile (between 5 and 50) on log minimum wage and covariates. Unconditional quantile partial effects (UQPE) for equivalized family incomes are calculated by dividing the coefficient on log minimum wage by the negative of the income-to-needs density at the appropriate quantile. The UQPE estimates are subsequently divided by the income-to-needs cutoff for the quantile to transform the estimates into elasticities. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the table. State-cluster-robust standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.5$ , \*\*\*  $p < 0.01$

Table 10: Long-run minimum wage elasticities for unconditional quantiles of equivalized family incomes

Income-to-needs quantile	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
5	0.010 (0.195)	0.089 (0.189)	0.228 (0.267)	0.274 (0.263)	0.391 (0.256)	0.269 (0.273)	0.462* (0.238)	0.357 (0.268)
10	0.175** (0.077)	0.168** (0.082)	0.285** (0.112)	0.303** (0.122)	0.214* (0.110)	0.170 (0.127)	0.393*** (0.095)	0.331*** (0.117)
15	0.113* (0.060)	0.126* (0.066)	0.258*** (0.078)	0.253*** (0.081)	0.157 (0.095)	0.150 (0.112)	0.324*** (0.093)	0.319** (0.120)
20	0.036 (0.049)	0.077 (0.056)	0.158** (0.071)	0.151** (0.065)	0.046 (0.083)	0.098 (0.093)	0.151 (0.096)	0.164 (0.106)
25	-0.006 (0.043)	0.035 (0.047)	0.063 (0.059)	0.072 (0.055)	-0.005 (0.068)	0.023 (0.075)	0.044 (0.076)	0.075 (0.083)
30	-0.015 (0.038)	0.038 (0.041)	0.055 (0.050)	0.075 (0.048)	-0.043 (0.061)	-0.002 (0.065)	0.019 (0.066)	0.059 (0.070)
35	-0.050 (0.038)	0.006 (0.036)	0.029 (0.047)	0.049 (0.044)	-0.084 (0.053)	-0.052 (0.059)	-0.006 (0.061)	0.015 (0.067)
40	-0.032 (0.036)	0.024 (0.031)	0.044 (0.038)	0.065* (0.034)	-0.058 (0.047)	-0.023 (0.051)	0.023 (0.055)	0.054 (0.059)
45	-0.040 (0.037)	0.018 (0.033)	0.036 (0.037)	0.054 (0.036)	-0.072 (0.046)	-0.033 (0.055)	0.002 (0.051)	0.016 (0.061)
50	-0.046 (0.039)	0.004 (0.037)	0.033 (0.042)	0.061 (0.043)	-0.079 (0.049)	-0.040 (0.054)	0.007 (0.049)	0.033 (0.059)
Observations	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525
Division $\times$ Time FE					Y	Y	Y	Y
State $\times$ Recession FE			Y	Y			Y	Y
State linear trends		Y		Y		Y		Y

*Notes.* Linear probability models are estimated by regressing an indicator for being under the income-to-needs cutoff associated with a quantile (between 5 and 50) on distributed lags of log minimum wage and covariates. Unconditional long-run quantile partial effects (UQPE) for equivalized family incomes are calculated by dividing the sum of the coefficients on the current and one-year lagged log minimum wage by the negative of the income-to-needs density at the appropriate quantile. The long-run UQPE estimates are subsequently divided by the income-to-needs cutoff for the quantile to transform the estimates into elasticities. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the table. State-cluster-robust standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.5$ , \*\*\*  $p < 0.01$



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## Appendix: Additional Figures and Tables

This appendix contains additional figures and tables that are referred to in the text. Figure A1 plots the minimum wage elasticities for proportions under alternative income-to-needs cutoffs between 0.5 and 3 in increments of 0.25. It does so for all eight specifications, with the control sets as indicated in each of the figure panels. The panels with specifications 1 and 8 are repeated from Figure 5 in the paper.

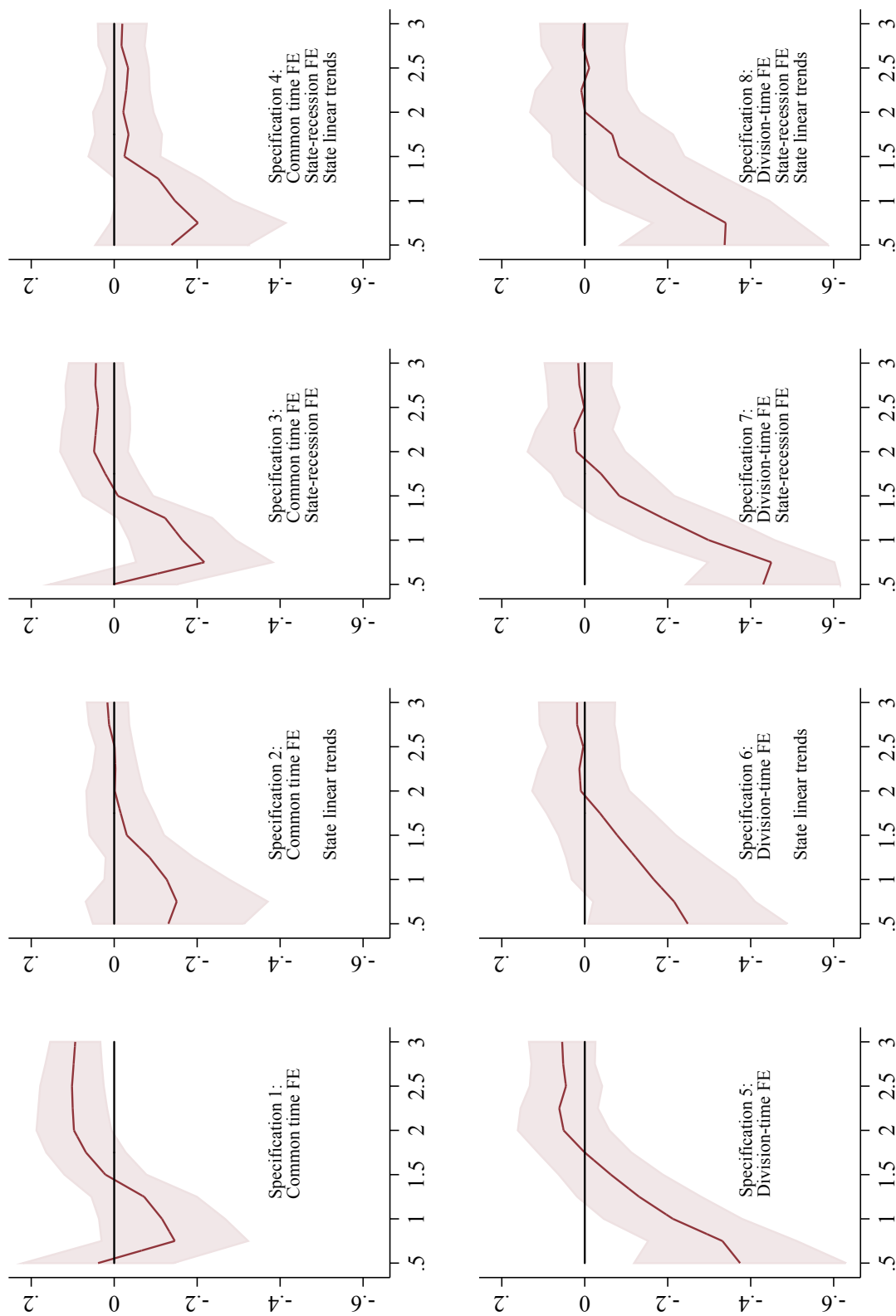
Figures A2 and A3 report results from the dynamic specification with one-year leading and one-year lagged log minimum wages, along with the contemporaneous log minimum wage. Figure A2 shows the elasticities for proportions under alternative cutoffs with respect to the one-year leading log minimum wage for all eight specifications. Figure A3 shows the long-run elasticities for proportions under alternative cutoffs: they are constructed as sums of the regression coefficients associated with the contemporaneous and one-year lagged log minimum wages, and divided by the sample proportion under the cutoff. The panels with specifications 1 and 8 are repeated from Figures 6 and 7 in the paper.

Figure A4 shows the minimum wage elasticities for the unconditional quantiles of family incomes for all eight specifications, between the 5th and 50th quantiles in increments of 5. First, unconditional quantile partial effects (UQPE) for equivalized family incomes are calculated from the linear probability model by dividing the coefficient on log minimum wage by the negative of the income-to-needs density at the appropriate quantile. The UQPE estimates are divided by the income-to-needs cutoff for the quantile to transform the estimates into elasticities. The panels with specifications 1 and 8 are repeated from Figure 8 in the paper.

The main tables in the paper (e.g., Table 4) report the estimates for proportions below income-to-needs cutoffs as minimum wage elasticities, and show results for cutoffs between 0.50 and 2.00 in increments of 0.25. In Table A1, I report the underlying regression coefficients on log minimum wage (semi-elasticities), and for a wider range of cutoffs (between 0.50 and 3.00). In Table A2, I report the sum of regression coefficients (semi-elasticities) for the contemporaneous and one-year lagged log minimum wages, also for income-to-needs cutoffs between 0.50 and 3.00. (The associated long-run elasticities are reported in main Table 6 for cutoffs up to 2.00.)

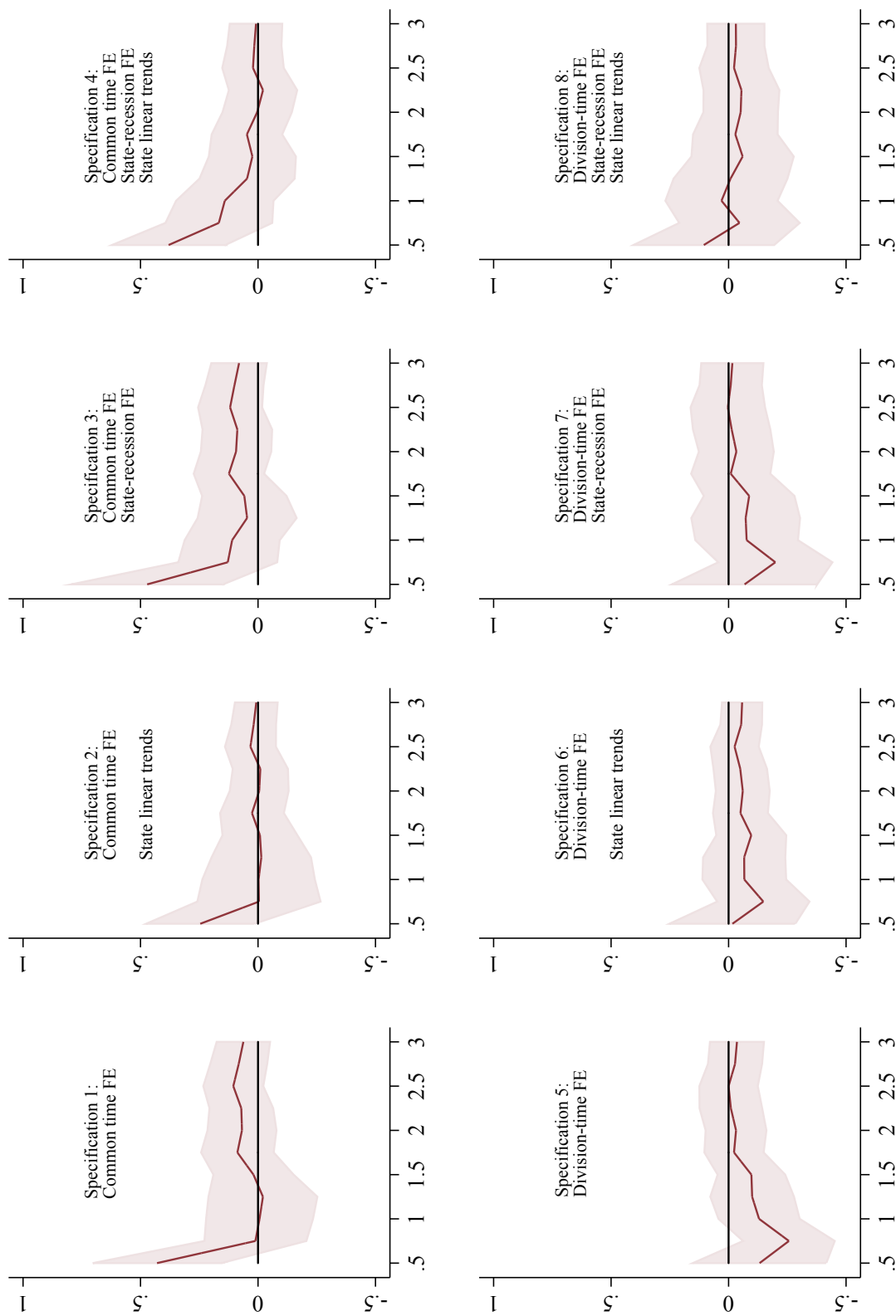
Table A3 decomposes the differences in the minimum wage elasticities for proportions under cutoffs between the least saturated specification 1 and the most saturated specification 8. Panels A and B provide decompositions for the contemporaneous estimate from the regressions without lagged minimum wages, and long-run estimates from the distributed lag regressions, respectively.

Figure A1: Minimum wage elasticities for proportions under alternative income-to-needs cutoffs



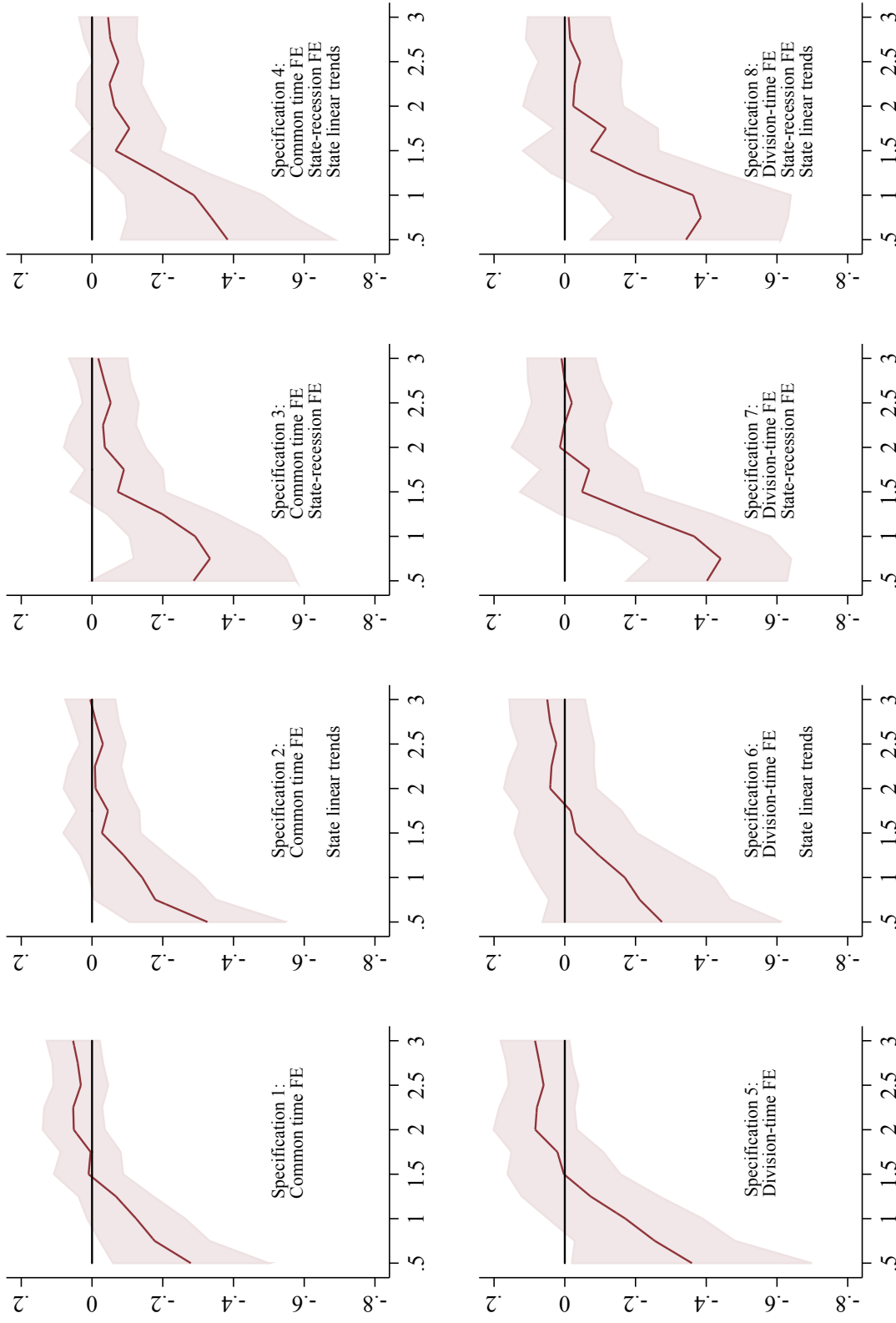
*Notes.* Horizontal axes indicate the income-to-needs cutoffs, and vertical axes measure the minimum wage elasticity for the proportion under the cutoff. A series of linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.5 and 3) on log minimum wage and covariates. Elasticities are calculated by dividing the coefficient on log minimum wage by the sample proportion under the income-to-needs cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.

Figure A2: One-year leading minimum wage elasticities for proportions under alternative income-to-needs cutoffs



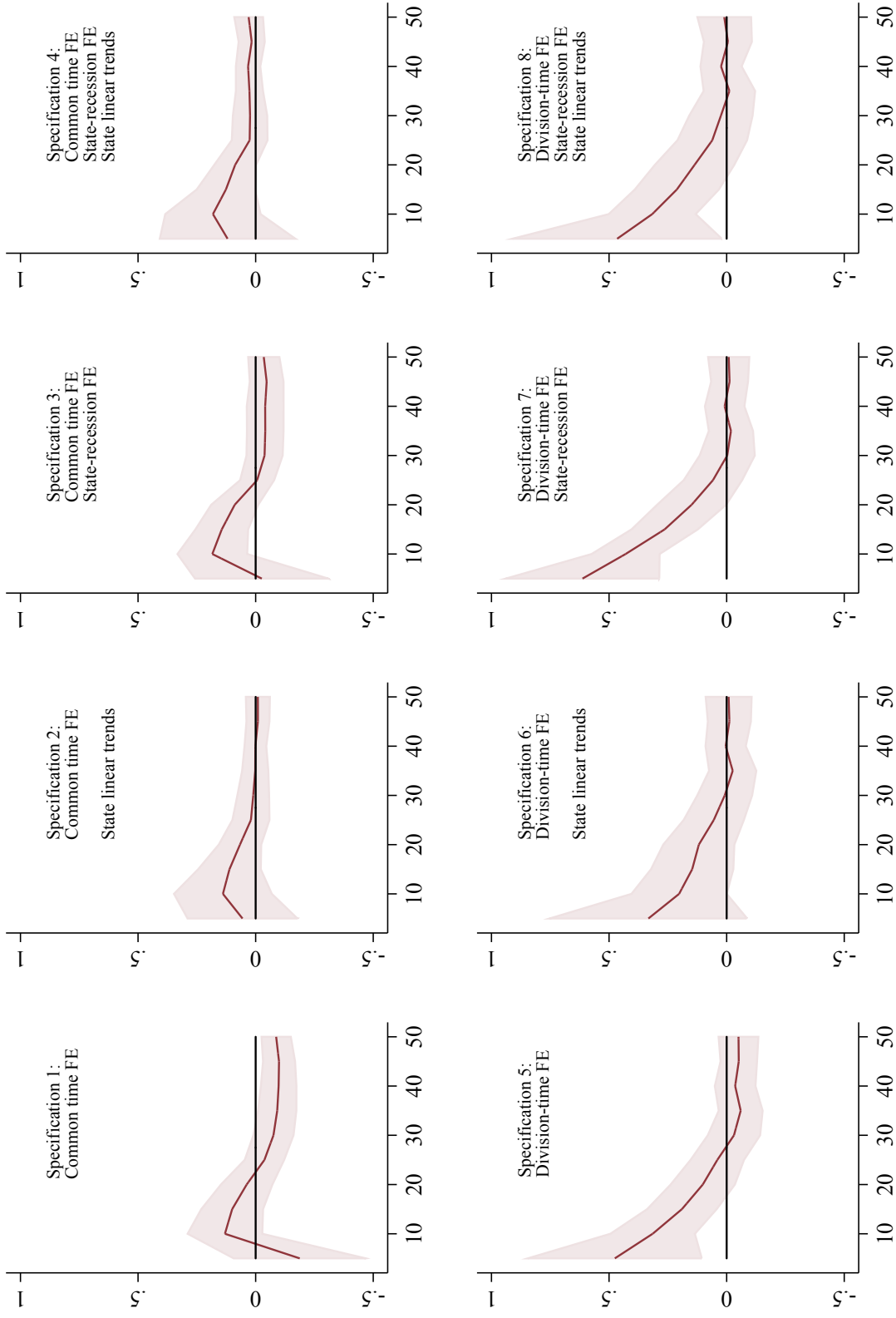
*Notes.* Horizontal axes indicate the income-to-needs cutoffs, and vertical axes measure the minimum wage elasticity for the proportion under the cutoff. A series of linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.50 and 3.00) on distributed lags of log minimum wage and covariates. The leading elasticity is the one-year leading minimum wage coefficient divided by the sample proportion under the cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.

Figure A3: Long-run minimum wage elasticities for proportions under alternative income-to-needs cutoffs



*Notes.* Horizontal axes indicate the income-to-needs cutoffs, and vertical axes measure the minimum wage elasticity for the proportion under the cutoff. A series of linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.5 and 3.00) on distributed lags of log minimum wage and covariates. The long-run elasticity is calculated from the sum of the contemporaneous and one-year lagged log minimum wage coefficients, divided by the sample proportion under the cutoff. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.

Figure A4: Minimum wage elasticities for unconditional quantiles of equivalized family income



*Notes.* Horizontal axes indicate the equivalized family income quantile, and vertical axes measure the minimum wage elasticity for the unconditional quantile of equivalized family incomes. A series of linear probability models are estimated by regressing an indicator for being under income-to-needs cutoffs associated with alternative quantiles (between 5 and 50) on log minimum wage and covariates. Unconditional quantile partial effects (UQPE) for equivalized family income are calculated by dividing the coefficient on log minimum wage by the negative of the income-to-needs cutoff at the appropriate quantile. The UQPE estimates are subsequently divided by the income-to-needs cutoff for the quantile to transform the estimates into elasticities. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the figure. Shaded area represents 95% state-cluster-robust confidence intervals.



Table A1: Minimum wage semielasticities for proportions under alternative income-to-needs cutoffs

Income-to-needs cutoff	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0.50	0.003 (0.006)	-0.009 (0.006)	0.000 (0.005)	-0.010 (0.006)	-0.026*** (0.009)	-0.017** (0.008)	-0.030*** (0.006)	-0.023*** (0.009)
0.75	-0.016 (0.010)	-0.016 (0.012)	-0.024** (0.009)	-0.022* (0.011)	-0.036*** (0.010)	-0.023** (0.011)	-0.049*** (0.008)	-0.037*** (0.009)
1.00	-0.017 (0.011)	-0.019* (0.011)	-0.025** (0.010)	-0.022** (0.011)	-0.032** (0.012)	-0.025* (0.015)	-0.045*** (0.012)	-0.036** (0.015)
1.25	-0.014 (0.012)	-0.016 (0.010)	-0.024** (0.011)	-0.020** (0.010)	-0.025* (0.014)	-0.024 (0.016)	-0.036** (0.015)	-0.030* (0.018)
1.50	0.005 (0.012)	-0.007 (0.011)	-0.002 (0.010)	-0.006 (0.010)	-0.015 (0.015)	-0.019 (0.017)	-0.020 (0.016)	-0.020 (0.019)
1.75	0.019 (0.013)	-0.004 (0.011)	0.006 (0.012)	-0.010 (0.011)	0.000 (0.016)	-0.010 (0.018)	-0.011 (0.017)	-0.019 (0.021)
2.00	0.031** (0.015)	-0.000 (0.011)	0.016 (0.013)	-0.007 (0.012)	0.017 (0.018)	0.003 (0.019)	0.007 (0.019)	-0.000 (0.021)
2.25	0.037** (0.015)	-0.001 (0.010)	0.016 (0.015)	-0.011 (0.010)	0.023 (0.017)	0.005 (0.018)	0.009 (0.017)	0.003 (0.020)
2.50	0.042** (0.016)	-0.000 (0.009)	0.016 (0.016)	-0.014 (0.010)	0.019 (0.018)	0.001 (0.017)	0.001 (0.018)	-0.004 (0.018)
2.75	0.044*** (0.015)	0.006 (0.011)	0.020 (0.016)	-0.008 (0.013)	0.024 (0.017)	0.008 (0.020)	0.006 (0.017)	0.002 (0.023)
3.00	0.046*** (0.015)	0.008 (0.012)	0.022 (0.016)	-0.010 (0.015)	0.027 (0.020)	0.009 (0.023)	0.008 (0.020)	0.001 (0.026)
Observations	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525
Division $\times$ Time FE					Y	Y	Y	Y
State $\times$ Recession FE			Y	Y			Y	Y
State linear trends		Y		Y		Y		Y

*Notes.* Linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.5 and 3) on log minimum wage and covariates. Semielasticities are the coefficient on the log minimum wage. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the table. State-cluster-robust standard errors in parentheses.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$

Table A2: Long-run minimum wage semielasticities for proportions under alternative income-to-needs cutoffs

Income-to-needs cutoff	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
0.50	-0.019** (0.008)	-0.023*** (0.008)	-0.020* (0.010)	-0.027** (0.010)	-0.025** (0.012)	-0.019 (0.012)	-0.028*** (0.008)	-0.024** (0.009)
0.75	-0.019** (0.008)	-0.019** (0.009)	-0.036*** (0.012)	-0.036*** (0.013)	-0.028** (0.012)	-0.023 (0.014)	-0.048*** (0.011)	-0.042*** (0.013)
1.00	-0.019* (0.010)	-0.021* (0.011)	-0.044*** (0.014)	-0.043*** (0.015)	-0.026 (0.016)	-0.025 (0.019)	-0.055*** (0.016)	-0.054** (0.021)
1.25	-0.013 (0.010)	-0.017 (0.012)	-0.038** (0.015)	-0.035** (0.014)	-0.014 (0.019)	-0.018 (0.021)	-0.039* (0.021)	-0.039* (0.023)
1.50	0.002 (0.012)	-0.007 (0.013)	-0.017 (0.016)	-0.016 (0.015)	0.001 (0.019)	-0.007 (0.020)	-0.012 (0.021)	-0.017 (0.023)
1.75	0.001 (0.012)	-0.013 (0.012)	-0.025 (0.015)	-0.030** (0.014)	0.006 (0.018)	-0.005 (0.020)	-0.019 (0.019)	-0.033 (0.021)
2.00	0.017 (0.014)	-0.003 (0.015)	-0.012 (0.019)	-0.020 (0.018)	0.027 (0.019)	0.013 (0.021)	0.004 (0.022)	-0.008 (0.023)
2.25	0.020 (0.015)	-0.003 (0.014)	-0.011 (0.017)	-0.018 (0.017)	0.029 (0.020)	0.014 (0.022)	0.001 (0.021)	-0.010 (0.024)
2.50	0.013 (0.016)	-0.013 (0.013)	-0.022 (0.016)	-0.031** (0.015)	0.025 (0.020)	0.010 (0.022)	-0.008 (0.023)	-0.018 (0.024)
2.75	0.018 (0.016)	-0.005 (0.015)	-0.016 (0.017)	-0.024 (0.017)	0.032 (0.021)	0.019 (0.025)	0.000 (0.023)	-0.007 (0.028)
3.00	0.026 (0.019)	0.002 (0.017)	-0.009 (0.020)	-0.022 (0.020)	0.041* (0.024)	0.025 (0.026)	0.005 (0.024)	-0.005 (0.028)
Observations	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525	3,646,525
Division $\times$ Time FE					Y	Y	Y	Y
State $\times$ Recession FE			Y	Y			Y	Y
State linear trends		Y		Y		Y		Y

*Notes.* Linear probability models are estimated by regressing an indicator for being under alternative income-to-needs cutoffs (between 0.5 and 3) on distributed lags of log minimum wage and covariates. Semielasticities are the coefficient on the sum of the coefficients of the contemporaneous and one-year lagged log minimum wage. All specifications include state and year fixed effects, state-level covariates (GDP per capita, EITC supplement, unemployment rate), and individual demographic controls (quartic in age, as well as dummies for race, marital status, family size, number of children, education level, Hispanic status, and gender), and are weighted by March CPS person weights. Additional controls are indicated in the table. State-cluster-robust standard errors in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.5$ , \*\*\*  $p < 0.01$

Table A3: Decomposing the difference between the most and the least saturated specifications: minimum wage elasticities for proportions under alternative income-to-needs cutoffs

Panel A: Estimates from Table 4 without lags

	State linear trends	State $\times$ Recession	Division $\times$ Time	Total Difference: Spec 8 - Spec 1
<u>Income-to-needs cutoff</u>	<i>Average Incremental Contribution (Elasticities)</i>			
0.50	-0.028	-0.052	-0.296	-0.376
0.75	0.057	-0.093	-0.157	-0.194
1.00	0.026	-0.060	-0.094	-0.128
1.25	0.010	-0.041	-0.054	-0.085
	<i>Average Incremental Contribution (Proportion of Total)</i>			
0.50	7.4%	13.9%	78.7%	100.0%
0.75	-29.4%	48.2%	81.2%	100.0%
1.00	-20.0%	46.7%	73.3%	100.0%
1.25	-11.7%	48.5%	63.2%	100.0%
Overall	-13.4%	39.3%	74.1%	100.0%

Panel B: Long-run estimates from Table 6

	State linear trends	State $\times$ Recession	Division $\times$ Time	Total Difference: Spec 8 - Spec 1
<u>Income-to-needs cutoff</u>	<i>Average Incremental Contribution (Elasticities)</i>			
0.50	0.002	-0.042	-0.024	-0.063
0.75	0.025	-0.167	-0.065	-0.208
1.00	-0.004	-0.177	-0.057	-0.238
1.25	-0.009	-0.116	-0.011	-0.135
	<i>Average Incremental Contribution (Proportion of Total)</i>			
0.50	-3.4%	66.0%	37.4%	100.0%
0.75	-11.9%	80.5%	31.4%	100.0%
1.00	1.6%	74.3%	24.1%	100.0%
1.25	6.5%	85.7%	7.8%	100.0%
Overall	-1.8%	76.6%	25.2%	100.0%

*Notes.* This table provides decompositions of the estimates between the least saturated specification (1) and most saturated specification (8) for: the estimates from the specification without lags (Panel A), and long-run estimates from the dynamic models (Panel B). For each of the four income-to-needs cutoffs, column 5 reports the total difference in the estimated elasticities between the most and the least saturated specifications, as reported in columns 8 and 1 in Table 4 (Panel A) and Table 6 (Panel B), respectively. This total difference can be decomposed using 6 different paths between specifications 1 and 8 that incrementally add Division  $\times$  Time effects, State  $\times$  recession effects, and state linear trends in different orders. The first section reports the average the incremental contributions of each of these three sets of controls along the six paths. The second section reports these average incremental contributions as a proportion of the total difference between estimates from specifications 1 and 8. The last row averages these contributions further across the four income-to-needs cutoffs.



## Raising Wages for Home Care Workers: Paths and Impediments

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This paper concerns the workforce affected by the “companionship exemption” of the FLSA but is not about the companionship exemption. The final rule published by the Department of Labor’s Wage and Hour Division on Oct 1, 2013, provided a thorough discussion of the impact of extending minimum wage and hour protections to exempted home care workers (US DOL/WHHD 2013). My main objective is to draw attention to the workforce affected by that exemption, which has been largely overlooked for cultural, historical and political reasons.

Eduardo Porter argues (NYT, December 11, 2013) for an increase in the minimum wage, as one of the few tools we have left to raise the floor on wages and combat poverty, given the erosion of collective bargaining and labor market regulations. Winning the war on poverty “will require a different sort of labor market that provides a better first line of defense,” he argues. Fast food workers draw most of the attention in the discussion of the effects, both pro and con, of the minimum wage. But Home Health Aides and Personal Care Aides are the two fastest growing occupations in the U.S. today and they comprise a significant proportion of the low wage workforce. There are more than 2 million low wage workers in the two industries that comprise what is commonly known as the home care industry – Home Health Care and Services for Elderly and Persons with Disabilities (SEPD) – about 2/3 as many workers as there are in the food prep and services industry. By 2022, there will be comparable numbers of workers in the two industries as growth in home care outpaces food services.

This paper argues that in the war against persistently low wage work, persistent and growing inequality, and poverty, these occupations are singularly important because of their size, their trend rate of growth, which far exceeds that seemingly recognized by policy makers, and especially because their wages are largely paid from public programs including Medicare and Medicaid, which means that the federal government and state legislatures are an important point of leverage for policy makers and unions.

There are many challenges to improving the quality of these jobs. First, although long term care has been around for as long as there have been elderly people and individuals whose disabilities make them unable to care for themselves, the structure of the industry has changed dramatically in the last few decades. Paid care provision has moved out of institutions such as nursing homes, large hospitals for intellectually and developmentally disabled individuals and mental hospitals, and into community based settings. This transition has spawned whole new industries, including home health care agencies and home care agencies, many operating on a for-profit basis; adult day services centers and large public programs supporting consumer-directed home care. Some of these industries are so new that they are only just beginning to be counted in the official data sets, and they are so poorly defined and measured that it is difficult to chart their impact on the economy and the workforce.

Much of the long term care work is now performed in non-traditional worksites, including in households and group homes. While workers in hospitals and even nursing homes were traditionally covered by union contracts, many workers in these new work sites and programs are still not covered by the minimum wage and overtime protections of the Fair Labor Standards Act. Workers in publicly-funded consumer-directed home care programs have been prohibited from joining unions because they were not defined as employees and not covered by the National Labor Relations Act. Wages and benefits are frequently defined outside market relations.

Second, most of the industry revenue – as much as 80 percent - comes from public sources, which means that the pool of money available to pay these workers is subject to the political fortunes of public programs, mainly Medicaid, and state budgets. For some of these workers, wages and benefits are set by state and local legislatures; states can play an important role in raising or depressing minimum labor standards in the industry. For others, for-profit firms carve wages and benefits out of Medicare and Medicaid reimbursement rates. Labor standards established in state programs can raise the standards to that for-profit firms must achieve in order recruit and retain workers.

Third, like many jobs that have crossed the boundary between unpaid household care work and paid, commodified care labor, many people, including legislators, do not view home care work as real work.

My plan in this paper is to provide a brief overview of the industry and trends shaping the growth of these occupations; provide evidence of how important public funds are to sustaining and shaping the industry; provide a brief description of the workforce and jobs, discuss challenges to reform and illustrate the central role that federal, state and local mandates and unionization play in establishing acceptable standards for job quality.

### Demand for Long Term Services and Supports

Approximately 15 million adults in the U.S. today cannot live independently without some form of long term services and supports, which can include both medical – skilled nursing or home health care - and non-medical support, such as personal care services, because of a long term illness or disability. Most are living in home and community settings, which can include private homes, group homes, assisted living facilities, while only 1.5 million are housed in nursing facilities (U.S. Census). Eighty percent of all hours of long-term care assistance for those who cannot live independently are still performed by unpaid caregivers in the home (Kaye, et al. 2010). In 2009, 31 percent of households and 28 percent of individuals provided an average of 20 hours a week of unpaid care to 65 million family members and friends, including older adults, working age adults with short and long term illnesses or disabilities, and children with special needs (NAC/AARP 2009).

Many of those family caregivers can only provide that help as part of a complicated arrangement that includes other family members and paid caregivers. Among caregivers whose recipients are not in a nursing home, 35 percent said their recipient received care from a paid caregiver as well, and of those more than one-third said the paid caregiver provided more of the relative's care than the unpaid care givers (NAC/AARP 2009). Since 3 out of 4 unpaid caregivers also work full or part time, they have to count on a reliable source of long-term services and supports so they can get to work, be on time and work without interruption or distraction.

Since the 1965 passage of the Medicare and Medicaid Acts, people have increasingly been able to rely on paid care both outside the home in long-term care facilities and inside the home from paid caregivers. Medicare recipients are entitled to short-term post-acute care either in a nursing or rehabilitation facility or in their own homes with support of paid home health care services.

Medicaid, a means-tested aid program, is a jointly funded venture between federal and state governments that provides medical assistance to low-income people. Since its inception in 1965, Medicaid has been the primary source of public funding for long-term care services and supports for adults with disabilities and frail older persons. People who meet the financial eligibility requirements for SSI and the Social Security Administration definition of disability – which covers people with physical and mental disabilities and with chronic illnesses – are automatically entitled to receive Medicaid-funded long-term services and supports. State Medicaid plans must provide institutional long-term care and home health care in order to be eligible for federal matching funds. In 1975, states were given the option to include in-home personal care services (the PCS option) as part of their Medicaid plans. As a condition of getting federal matching funds, states must offer any benefit provided to any beneficiaries in their state Medicaid plan to all Medicaid beneficiaries with comparable conditions. (These are known as the state-wideness and comparability rules). In other words, if a state wanted to make less expensive in-home personal care services available to elderly persons who were qualified for or already living in nursing homes, they would also have to offer the personal care services to nursing home eligible working age adults who were living independently in the community. Many states chose not to adopt the PCS option out of concern that it would stimulate demand and raise the overall cost of providing long-term care.

#### Public funding for Long-term Services and Supports

The Medicaid Waiver authority – passed in 1981 – allows states to waive state-wideness and comparability rules, targeting specific services to particular populations. In 2009, there were 286 separate waivers operating in the 50 states and the District of Columbia, with a total of 1.346 million waiver slots and a total of 1.241 million individuals participated in the waiver programs (KCMU 2012). Another 365,000 people



were on waiting lists for over-subscribed waiver services. Thirty-one percent of the waivers and 41 percent of the waiver slots were for people with intellectual and developmental disabilities (ID/DD), who also represented 61 percent of those on waiting lists. Forty percent of waiver programs and 47 percent of slots were for people over 65 or for people under 65 with disabilities. Waivers for people with physical disabilities, children, people with HIV/AIDS, and traumatic brain or spinal cord injuries made up the remaining slots (KCMU 2012).

Prior to passage of the Medicaid Waiver authority, most publicly supported long term care was delivered in state hospitals, other large institutions and in nursing homes. Between 1965 and 2011, the number of people with ID/DD living in large state institutions fell from 224,000 to 30,000. As of 2011, only 5 percent of people with ID/DD still lived in facilities that had more than 16 residents, while only 20 percent of adults with developmental disabilities were living in any kind of institution (Larson, Salmi, Smith, Anderson and Hewitt 2013). Among adults receiving Medicaid long term services and supports, about 30 percent were still living in nursing homes in 2009 (Kaiser Commission on Medicaid and the Uninsured 2012, 2013).

Home- and community-based services have spread, if unevenly, across states in the last 35 years as consumers' have expressed their desire to remain in their homes, and as federal and state policy developments have obliged or encouraged states to introduce a variety of non-institutional alternatives. Approximately two-thirds of the elderly and persons with disabilities who are getting paid long term care now receive it through home- and community-based services, including in group homes for persons with developmental disabilities, in adult day service centers, and in private homes.

### The Long-Term Services and Supports Industry

Paid caregivers work in a set of industries that are grouped under the rubric of the Long-term Services and Supports Industry. Long-term services and supports (LTSS) include a range of health, personal care and support services provided to individuals whose capacity for self-care is limited by physical, intellectual, developmental or mental disability or chronic illness or injury. Individuals can receive care in their own homes, community-based group homes or in institutions designed for the care of persons with physical limitations, cognitive limitations, intellectual limitations and mental health disabilities.

The long term care industry is comprised of six industries that can be categorized along two or more dimensions, most notably, whether they provide institutional or non-institutional care and whether they provide medical- or non-medical based care (Figure 1). Non-medical care includes assistance with activities of daily living (ADLs) such as dressing, eating, toileting, and transfers, as well as assistance with what are called

“instrumental activities of daily living” – shopping, house cleaning, bill paying and trips to medical appointments.

The industry boundary between both institutional and non-institutional and between medical and non-medical is porous. Institutional, medical-based care is provided by the Skilled Nursing Facility (Nursing Home) industry (NAICS 6231), and the industry that provides Residential Care for Persons with Intellectual and Developmental Disabilities (known as Intermediate Care Facilities, or ICFs) and for Persons with Mental Health and Substance Abuse Disabilities (NAICS 6232). Continuous Care Retirement Communities (CCRCs – NAICS 623311) provide mainly non-medical residential care to the elderly, although they do include a separate medical facility when residents need that level of care. Assisted Living Facilities offer no medical care (NAICS 623312). Group homes for persons with intellectual and developmental disabilities (ID/DD) and for persons with disabilities, such as hearing or vision impairment or other physical impairments, straddle the line between medical and non-medical and between institutional and community. The final category – Other Residential Care Facilities (NAICS 6239) – includes group homes for persons with hearing and vision impairments and for disabled persons who do not need medical care.<sup>1</sup>

Two main industries make up the home care industry, again distinguished from one another by whether they provide medical or non-medical care. However, the Home Health Care Services industry (HHCS – NAICS 6216), which provides home-based medical care, including skilled nursing services, also provides extensive non-medical services such as physical, speech and occupational therapy, personal care assistance with activities of daily living, homemaker and companionship services.

Services for the Elderly and Persons with Disabilities (SEPD, NAICS 62412) is the non-medical part of the home care industry. Home care companies, which technically provide only non-medical personal care services including house-keeping and companionship services, are the heart of this industry. Just as home health care agencies cross the boundary between medical and non-medical services, home care agencies are expanding into medical services. Adult day services centers for elderly persons and persons with intellectual and developmental disabilities are included in the SEPD industry as well. Agencies in these two industries employ most of the home health care aides and personal care assistants. But there are also so-called “independent providers” who work outside the agency model either in publicly-funded, consumer-directed programs or who are both hired and paid privately by consumers. As I explain below, it is not clear whether consumer-directed workers are fully accounted for in official statistics

<sup>1</sup> The category is a catch-all for various categories of group homes in which there is some supervision, but no medical care. It also includes group homes for unwed mothers, child group foster homes, orphanages and group homes for delinquent youth and ex-offenders (US Census/NAICS).

or in what sector they are classified. A small third industry – Vocational Rehabilitation (NAICS 6243) – provides job training, job counseling and sheltered workshops mainly to individuals with disabilities.

In addition to the medical/non-medical distinction, of interest to this analysis is that agencies can be further distinguished by whether or not they are certified by Medicare and/or Medicaid or licensed by the state, by whether they are public or private and for-profit or not-for-profit. Related to these distinctions is whether their revenue originates primarily from public or private sources. For 2012, the Service Annual Survey estimates that \$318 billion in revenue was generated in the industry, almost two-thirds in residential services and one third in non-residential care (SAS 2013). (See Figure 2).

### *Home Health Care Services (HHCS)*

The formal sector of the fast-growing home health/home care sector includes Medicare- and Medicaid-certified home health care companies “primarily engaged in providing skilled nursing services in the home, along with a range of the following: personal care services; homemaker and companion services; physical therapy; medical social services; medications; medical equipment and supplies; counseling; 24-hour home care; occupation and vocational therapy; dietary and nutritional services; speech therapy; audiology; and high-tech care, such as intravenous therapy (US Census, NAICS). These firms are commonly known as home health agencies and visiting nurses associations. The industry is a mix of free-standing, as well as home health agencies that are attached to facility-based long term care providers such as hospitals, rehabilitation facilities and skilled nursing facilities. HHCS is dominated by free-standing for-profit agencies and funded almost entirely by public programs. (Seavey and Marquand 2011).

In 2012, there were 12,200 Medicare-certified home health care agencies (Harris-Kojetin 2013). As of the fourth quarter of 2012, the home health industry included 30,281 privately-owned establishments, up from 14,043 in the fourth quarter of 2001 (US DOL, QCEW 2013). (See Figure 3). An analysis of the industry in 2009 found that of the then 10,631 Medicare-certified home care agencies, 13 percent were facility-based, meaning they were associated with a hospital or nursing home, and 87 percent were free-standing. Of the free-standing, which included Visiting Nurses Associations (VNAs), combined government and voluntary, public, private for-profit, and private not-for-profit agencies, 62 percent were private for-profit (NAHC 2010). Less than twenty years earlier, in 1990, there were fewer than 5,700 agencies, and only 33 percent were private for-profit, while 39 percent were public and private non-profit or voluntary agencies. Virtually all of the growth has been driven by proprietary hospitals and free-standing private for-profit agencies (NAHC 2010). A significant share of home health agencies – 32 percent in 2007 – were part of a chain though that was down from about 47 percent in 2000 (Park-Lee & Decker 2010).

### *Services for the Elderly and Persons with Disabilities (SEPD)*

The non-medical part of the home care industry is classified under the Services for the Elderly and Persons with Disabilities (SEPD) industry. The industry includes “establishments primarily engaged in providing nonresidential social assistance services to improve the quality of life for the elderly, persons diagnosed with intellectual and developmental disabilities, or persons with disabilities. These establishments provide for the welfare of these individuals in such areas as day care, nonmedical home care or homemaker services, social activities, group support, and companionship. (US Census/NAICS 2012)” In other words, this industry is comprised mainly of adult day services providers and home care agencies. Some certified or licensed and many non-certified agencies provide mainly non-medical services. An increasingly fluid boundary is developing between home health and the home care agency segment of SEPD as more and more firms enter the industry as non-certified agencies but then add services such as skilled nursing which will qualify them for Medicare certification.

Slightly more than 4,000 agencies make up the adult day services industry. Far more is known about this segment of the SEPD industry than about home care agencies as a consequence of two recent surveys (Harris-Kojetin 2013; MetLife 2010). There is a much larger public and non-profit presence in adult day services than in home health services. The Metlife (2010) survey administered in 2009, found that only 39 percent of adult day services agencies were free-standing and only 27 percent were private, for-profit operations. Fifty-six percent were private, not-for-profit and 16 percent were publicly-owned agencies.

Growth in the SEPD sector has been explosive, from just over 10,000 private establishments in 2004 to almost 69,000 by the 4<sup>th</sup> quarter of 2012 (U.S. DOL QCEW). (See Figure 3). According to the Department of Labor, Wage and Hours Division (DOL/WHD 2013, 214), private pay agencies comprise a small fraction of the total industry. Some industry sources say there are 14,000 to 17,000 private pay agencies; however, according to the WHD, it is difficult to tell whether these overlap with certified or licensed agencies. Approximately one third of these private home care agencies are not-for-profit (Leading Home Care 2010 cited in DOL/WHD, 214). Of the private pay agencies, 4,100 to 4,700 are franchises; the franchise segment is obviously growing rapidly.

Franchises are largely concentrated in the for-profit, private pay (though private-pay may be a misnomer) sector which has grown rapidly just in the last few years but particularly, in this recession-proof industry, since 2008. The nature of the services provided, which focused mainly on non-medical services, including assistance with ADLs, IADLs, and companionship has broadened to include some medical care, staffing solutions and pet care (Franchise Business Review 2012). New firms start out offering

only non-medical and assisted living placement services before moving into medical services. A single office of a “senior care” franchise, as they are called in the industry, requires an investment of approximately \$66,000; it is not uncommon for top franchises to build annual revenue to \$1 million with a gross margin of 30 to 40 percent. When compared to the slim margins and high average initial investment of \$500,000 for food and retail franchises, senior care franchises are extremely attractive investments. As a consequence, there are now about 40 franchise companies compared to 6 just 10 years ago. Sixty-five percent of individuals who start franchises are over 45 years of age, 86 percent are Caucasian, and 74 percent are females with BA, similar to the demographics of real estate agents and brokers. Seventy-six percent started their business in last 5 years and 85 percent entered after looking for homecare for a relative (Franchise Business Review 2012).

The low barriers to entry, high profit margins, recession-proof nature of the industry, and the existence of a large pool of middle-income, middle-aged women whose aging parents are ineligible for publicly-funded care, may help explain the rapid growth of the sector.

The sector has been largely unregulated, but as of January 2014, thirty states required home care agencies, including private pay home care agencies, to be licensed (Private Duty Today 2014). There is tremendous variation across states in the licensing requirements. Washington State, for example, requires agencies to be licensed. The procedure involves completing an application in which the applicant states what services will be provided, how many full time equivalent employees are involved, where the service will be provided and a disclosure stating that they have never been convicted of a crime that involved physical, sexual or financial exploitation of a child or vulnerable adult. Florida has a similar application and requires any home care provider, other than an individual working on their own, to be registered; Indiana’s application requires the agency to provide evidence of how they will train providers. Both Washington and Florida specifically identify potential applicants as agencies that may have a contract to provide Medicaid personal care option or waiver services (Washington DOH; Florida AHCA; Indiana State DOH).

As Figure 4 indicates, revenue in Home Health Services and the SEPD industries has more than doubled since 2001. Growth in the for-profit firms has far out-stripped growth in the not-for-profit segment of the industries.

#### *Consumer-directed home care services*

Within the home-based care segment, consumer-directed publicly-funded home care is gaining ground in many states. Consumer-directed home care lies closest to the industries origins in unpaid care in the home, which is why this is the sector in which we

find the most non-traditional employment relations. However, as the example from California shows, there has been considerable movement toward regularizing the terms of employment and recognizing these jobs as real jobs.

Under this model, individuals hire providers of their own choice, supervise and either pay them directly using cash support from Medicaid, or the provider is paid directly by the state or an intermediary, such as a “public authority.” Including California, twelve states now provide Medicaid services through the Medicaid Personal Care Services Option under this model of “consumer-directed” care. Consumer-direction for Medicaid Home Health is available in three states. There are 165 waiver programs spread across 41 states that allow or require consumer-direction (KCMU 2012).

A survey of 150 consumer-directed programs in 44 states found that over half permit family members to be paid to provide care, including personal care (Feinberg and Newman 2005). In many of these consumer-directed programs, participants are permitted to hire family members, friends and neighbors and there is considerable evidence that the majority of consumers do hire family members (Howes 2004; DOL/WHD 2013; Foster et al. 2007; Feinberg et al. 2004).

Twelve states have adopted a “public authority” model. By far the largest program operated under this model is in California where the state offers its Medicaid Personal Care Services Option through the In-Home Supportive Services program, almost entirely on a consumer-directed model. (Other Waiver programs are available to consumers for whom consumer-direction is not viable.) Nearly 425,000 consumers, roughly 18 percent of the 2.3 million people who receive Medicaid-funded personal care and home care services through the PCS Option and Waivers, are served under this program (KCMU 2012). Approximately 400,000 IHSS workers are employed under a unique arrangement devised in 1992 to create IHSS Public Authorities. The public authority is a quasi-governmental organization that has a consumer-majority advisory committee. The public authority model was first conceived in California by a coalition of union and consumer advocates (Boris and Klein 2012). In this model, the consumer hires the provider, the state pays the provider directly, and the public authority maintains a registry of providers, offers training for consumers and providers, and serves as the “employer of record” for the purposes of collective bargaining. With an employer of record, home care workers can be reclassified from independent contractor to employee status, which means they are covered by the National Labor Relations act and can legally join a union, bargain collectively, and access group benefits such as worker compensation and health care (Smith 2008).

Following the passage in 1992 of a state law permitting their formation, San Mateo and Alameda were the first California counties to create public authorities in 1993; San Francisco passed an ordinance in May, 1995, creating its IHSS Public Authority. As

Boris and Klein (2012) report, San Francisco IHSS workers voted to join SEIU Local 250 in spring of 1996. The County Board of Supervisors allocated \$1.3 million for higher wages, giving IHSS workers their first raise in 20 years. In 1997, San Francisco became the first county in California to sign a union contract that covered independent providers. Legislation in 1999 required each California county to set up an entity by January 2003, such as a public authority, that could serve as “employer-of-record” for IHSS workers (California WIC).

At the time of this writing, each California county maintains a separate public authority or similar entity. In those counties where workers are represented by a union, the public authority negotiates a contract, usually of three years duration. Bargaining is limited by statute to wages and benefits. Providers are prohibited, also by statute, from striking or bringing grievances against their consumers (California WIC). In this decentralized system, in which each county negotiates separately with a union, wages and benefits vary considerably across counties. In those counties that have no contract or in which the union has been unable to win any wage increases from the county, IHSS workers are paid the state minimum wage of \$8 an hour and receive no health insurance or any other benefits. In other counties, including San Francisco and bordering Bay Area counties and in counties between San Francisco and Sacramento, wages have risen as high as \$12.35 an hour and providers receive health insurance, dental insurance and even paid time off (Howes 2013).<sup>2</sup> There is some evidence that the improved quality of jobs in this publicly-funded program is spilling over into the private sector.<sup>3</sup>

The model also spread quickly to Oregon and Washington (Boris and Klein 2012). States in the rest of the country have been slower to embrace consumer-directed care. But as they have, many states have created public authority-like entities – called variously “home care quality commission” or “workforce council” - either by ballot initiatives to amend the state constitution, executive order or intergovernmental cooperative agreements (Smith 2008). As of this writing, twelve states have models similar to California. Connecticut passed a public authority law in 2012. Minnesota and Vermont passed bills in 2013 (AFSCME 2013; SEIU-MN 2013).

<sup>2</sup> This system will change over the next few years as counties transition under the new Coordinated Care Initiative (CCI), which was established as part of the enacted 2012-2013 California state budget in June 2012 (The Scan Foundation 2012). The CCI specifies, among other things, that long- term services and supports (LTSS), which includes nursing home care and in-home services, will be integrated into managed care plans for all Medi-Cal beneficiaries. Under the CCI, a state-wide IHSS Public Authority will take over county-level public authorities’ responsibilities for collective bargaining. While this does not necessarily mean there will be a state-wide contract in which all workers are paid the same wage and benefits, there is likely to be considerably less variability across counties and wages are likely to rise on average.

<sup>3</sup> In testimony I wrote to support a suit that the union was bringing against one of the California counties, I found that wages for home care workers employed by agencies, that is, not employed in IHSS, were higher in counties where IHSS wages were higher. I did not do a controlled statistical study, so this evidence is merely suggestive of future research that should be done to see what effect leverage in publicly funded programs can have on the industry as a whole.

## Expenditures and Funding Sources for Long Term Services and Supports

As much as 80 percent of all revenue generated in this industry comes from public funds. Under certain conditions, labor standards in publicly-funded programs can set a standard for the industry that spills over into the private sector. This section establishes how deeply public funding reaches into the the LTSS industry.

The Kaiser Commission on Medicaid and the Uninsured (KCMU 2013a), using the National Health Expenditures Accounts (NHEA), has estimated that over two-thirds of total expenditures for long term services and supports come from public sources, primarily Medicaid and, to a lesser extent, Medicare. Seavey and Marquand (2011) estimated that public programs accounted for about 75 percent of annual revenue in the Home Health Care Industry. The Congressional Research Service, in its own analysis of the NHEA data for 2009 concluded that as much as 89 percent of revenue in the Home Health sector came from public sources (DOL/WHH 2013, 212).

Very little is known about funding sources and the extent of private pay in the SEPD sector, except in the adult day services sector where 55 percent of funding in 2010 came from public sources.<sup>4</sup> One telling sign, however, that public funding – mostly from Medicaid – is flowing into other parts of this sector is that 50 percent of respondents to a recent survey conducted by the Private Duty Homecare Association claimed that they provided services covered by public payers (DOL/WHH 2012, 215). The Wage and Hours Division also reported that the results of an analysis of the MEPS data indicated that a relatively small percentage of consumers pay out of pocket for agency care, although private pay appears to be more frequently used with independent providers (DOL/WHH 2012, 170). But no estimates have been undertaken to measure the share of public spending in the SEPD sector because, as the WHH says in a footnote, “data is not available...” (DOL/WHH 2013, 212).

In what follows, I attempt to estimate the public share of spending in the entire LTSS sector, as well as in each of the sub-sectors, Residential Care, Home Health Care and SEPD. I conclude that the data suggests, though does not prove, that 66 percent of total spending on LTSS comes from public sources, 50 percent in residential care, 83 percent in Home Health Care and 77 percent in the SEPD sector (See Figure 5 and Table A1.)

NHE accounts (CMS 2013a) are built using a mix of data on industry revenue and expenditures from the Services Annual Survey, the Economic Census, Medicare claims data, Medicaid expenditures from Form CMS-64 and other program or budget data (CMS

<sup>4</sup> More is known about the adult day services portion of the sector because of the two recent surveys. Services are paid for in many states through Medicaid Waiver programs, Veterans Affairs and some state and local funding and one survey indicates that 55 percent of funding in 2010 came from public sources, primarily Medicaid. (Harris-Kojetin 2013; MetLife 2010).



2013b). Estimates of spending on LTSS typically include three categories from the National Health Expenditure Accounts— Nursing Care Facilities and Continuing Care Retirement Communities, Home Health Care, and Other Health, Residential, and Personal Care. The three aggregated categories loosely reflect NAICS industry categories and to some extent the data for each category are constructed from industry-based data. However, as I explain below, the categories do not include all LTSS industries, nor does the mix of industries and services aggregated within the categories follow an obvious logic.

The first category - Nursing Care Facilities and Continuing Care Retirement Communities includes two NAICS classifications - 6231 and 6233; non-medical forms of residential care are intentionally excluded - Assisted Living or Homes for the Elderly (623312) and Other Residential Care (6239). The second category, Home Health Services includes the Home Health Services industry (6216).

In the third category, Other Health, Residential, and Personal Care Expenditures, the NHE Accounts include Ambulance Services (62191), and Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities (6232). The category also includes “payments for services not delivered in traditional medical providers sites” including senior centers and community centers. One of the largest categories included here is not based on industry data, but rather Medicaid expenditures data on Medicaid home care services, including the Medicaid Personal Care Option and Waivers. In other words, this category is not based on industry expenditure data, but rather on a combination of industry data for some industries and a lot of program data for other parts of industries. Since many of the long term care services paid for by Medicaid are delivered by establishments in the SEPD industry, including by home care companies and adult day services centers, and by state and local programs, such as consumer-directed home care, these seem to be the other industries and programs implicitly included in the Other Health, Residential and Personal Care Expenditures category.<sup>5</sup>

It is not clear why the NHEA would include expenditures on non-medical services such as home care in the “Other” category, while excluding expenditures on non-medical residential services such as in Assisted Living and Other Residential Care in the Nursing Care Facilities category. Nor does it make sense that expenditures on Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities (6232), should be included in the Other category, rather than in the Nursing Care Facilities category.

The method developed here for estimating the share of public spending in LTSS better reflects total spending on LTSS, including in the rapidly expanding non-medical

<sup>5</sup> Note that some Medicaid-funded personal care and homemaker services are actually provided to people living in Assisted Living and other residential care facilities, as well, and by Home Health Services.

services. I added the Service Annual Survey measure of revenue for the two industries that KCMU had excluded from their Nursing Care category – Assisted Living (623312) and Other Residential Care (6239) - to create an expanded category called Residential Care. In Table A.1 and Figure 5, I have calculated expenditures and funding sources for LTSS in 2012. I estimate that total national spending on LTSS, including the non-medical residential care, was \$392.7 billion in 2012, somewhat higher than the \$357 billion estimated by Kaiser Commission on Medicaid and the Uninsured (2012) for 2011.<sup>6</sup> Note that spending on LTSS from the NHEA is higher than the \$317 billion estimated from the Service Annual Survey because the NHEA includes program expenditures for Medicaid services, some of which are not captured in the SAS. I have assumed that all payments for Assisted Living and Other Residential Care are out-of-pocket, not because I think they are, especially for Other Residential Care, but because I think Medicaid support to these industries may already be included in the Other category as Waiver spending. So while the share of public spending in each category may be biased, the overall share in the cost of Long term services is now more accurate.<sup>7</sup>

According to the NHEA, consumers spent \$138.2 billion on services in the Other category and Medicaid paid \$73 billion or 53 percent of the costs. Revenues for ambulance services and the ID/DD and Mental Health facilities was about \$46.5 billion (Services Annual Survey), leaving \$91.5 billion for the rest of the category which includes expenditures on Medicaid Personal Care Services, Waiver programs and SEPD. Many of the personal care services paid for by the Medicaid PCS and Waiver programs are actually provided by agencies in the Home Health and SEPD industries. Medicaid spent \$59 billion on Waiver programs and PCS in 2011 (Eiken, et al. 2013). Some of that \$59 billion must be the extra \$23 billion that the NHEA attributes to the Home Health industry in excess of the \$5 billion that Medicaid actually paid for Home Health services. (The NHE data seem to be telling us that at least a third of the \$77.8 billion in services provided by firms in the Home Health industry are in fact home care services paid for by Medicaid.)<sup>8</sup> Some of the remaining \$36 billion in Medicaid funds must be used to pay

<sup>6</sup> Using the same method used by KCMU (2012), I estimate total spending on LTSS would have been \$367.6 billion in 2012.

<sup>7</sup> While it would also make sense to include the industries that provide residential care for persons with developmental and intellectual disabilities and mental health and substance abuse treatment centers, I have left them in the Other category for simplicity.

<sup>8</sup> Using CMS Medicaid expenditure data for 2011, the most currently available data, Eiken, et al. (2013) calculate total Medicaid spending on LTSS in 2011 to be \$136 billion. Unlike the NHE, spending is reported by facility type— skilled nursing facility, ICF/DD, Mental health facility - and program – Personal Care Services Option, Home Health, Rehabilitation, and various Medicaid Waiver programs (1915(c), HCBS 1115 and 1915(a), etc.). The CMS or Eiken data do not map onto the industry categories in the NHE easily.

The NHE attributes \$148.1 billion of long term care spending in 2012 to Medicaid. Both sources attribute between \$46.3 and \$52 billion to spending on nursing facilities. While the NHE attributes \$28.9 million of home health spending to Medicaid, the Eiken report shows that Medicaid spent only \$5.5 million on Home Health. The discrepancy is likely explained by the difference between expenditures in the industry and actual service provided. Home health services must be provided by certified Home Health providers and most of it is paid for by Medicare,

for consumer-directed services which are not provided by agencies. The California IHSS program which serves 59 percent of all persons in consumer directed programs (Sciegaj and Selkow cited in DOL/WHD 2013) spends about \$5 billion per year (California LAO 2009). So if we assume \$9 billion of Medicaid PCS and Waiver money is spent on consumer-directed programs, that leaves about \$27 billion of Medicaid funds in the Other category that could be going to agencies in the SEPD sector. That is a substantial share of the total \$33 billion in revenue that these firms earned in 2012. While this is a very crude estimate of how much public funding is going into the SEPD sector, it suggests the possibility that this sector is highly dependent on public funds. It also suggests the need for more research on how the sector is funded. It also provides further confirmation to the WHD's argument that there is little evidence of extensive private pay in the industry.

### The Homecare Workforce

Recipients of long-term care rely on direct care workers, whose titles include nurse's aide, nursing assistant, personal care aide, home care aide, home health aide, certified nursing assistant and direct support professional (PHI 2010). Direct care workers employed in the home care industries are formally classified in two occupations - Home Health Aide (SOC 31-1011) and Personal Care Aide (SOC 39-9021). They work alongside much smaller numbers of nurses, LPNs and physical therapists in the Home Health sector and largely on their own in the SEPD sector. Over 3.4 million aides work in the LTSS industries, more than half (1.4 million) in the non-residential Home Health and SEPD industries, in private households and as self-employed workers (Table 1). Forty-one percent of all employees in the residential care industries are CNAs, home health aides or PCAs.<sup>9</sup> The data in this table, drawn from the BLS National Employment Matrix 2012, indicate that there were 875,100 home health aides and 1.191 million personal care aides, or almost 2 million aides working in homes and community settings.<sup>10</sup> Aides, or direct care workers, made up 57 and 67 percent of employment in Home Health and SEPD.

This workforce has grown enormously in the last few decades, not only because the number of people requiring long term care services has increased, but also because the balance between institutional and home- and community-based care has shifted so

but certified home health providers can also provide other services, such as personal care and homemaker services which may be paid by Medicaid.

<sup>9</sup> I have not included Vocational Rehabilitation in this table, largely because industry employment is not dominated by aides, although I have included it other measures of the LTSS industry. Roughly 360,000 people were employed in the industry in 2012; the two largest occupations were PCA (43,000) and Rehabilitation Counselor (35,800).

<sup>10</sup> While the 150,000 home health aides who are working in the Nursing Home and Other Residential Care Sector work for facility-based employers, it is possible that they do not actually work in the facility since some nursing homes also provide home health services. In 2009, 12 percent of home health agencies were attached to a hospital or nursing facility (NAHC 2010).

much toward HCBS. Employment in the Home Health industry doubled from 635,000 to 1.2 million between 2001 and 2012; employment in the SEPD industry has also doubled from 305,000 in 2001 to 773,000 in 2012 (Figure 3). Despite the fact that these are the fastest growing industries in the country, wages and conditions of work have not improved. Annual earnings per employee rose from just over \$20,000 to only \$27,600. In real terms, controlling for inflation, annual income has increased by only 6 percent; average annual employee income in the SEPD sector has grown from \$17,100 to \$18,900, but in real terms, that is a 15 percent decline (US DOL QCEW 2013).

Home health and home care aides (PCAs), who make up more than half the employment in these two industries, are the 2<sup>nd</sup> and 3<sup>rd</sup> fastest growing occupations, according to the latest employment projections from the BLS; more jobs will be added in the personal care aide occupation than to any other occupation between 2012 and 2022 (BLS/EP 2013).

But despite the size of these occupations, we still do not really know how many PCAs there are; these data probably substantially underestimate their number. HHAs and PCAs, like other occupations, are counted in two different surveys. The Occupation and Employment Statistics Survey (OES), samples full and part-time wage and salary workers in non-farm establishments; self-employed workers or those employed in private households are not included in the survey. In order to construct the National Industry-Occupational Employment Matrix which is the basis for the occupational employment projections, the BLS adds estimates of self-employed and household workers from the Current Population Survey, which is a household survey.<sup>11</sup>

Persons who work outside the standard employment relationship are more likely to be undercounted. The biggest challenge in counting home care workers may arise from the increasing role that consumer-directed care plays in the provision of long term care services. In fact, it is unclear whether or to what extent these workers are being counted. For example, the 2012 National Employment Matrix puts the number of self-employed personal care aides at 70,400 and the number working in private households at 109,800, for a total of 180,200 persons who might be consumer-directed home care workers, working either in publicly funded programs or for private pay. However, we know that there are about 400,000 such persons working in the publicly-funded California In-Home Supportive Services (IHSS) program alone. Sciegaj and Selkow, reporting on the results of a survey of 298 publicly funded participant or consumer-directed programs, found these programs served 810,000 people, including the California program (cited in DOL/WHd 2013, 234). The survey did not provide a count of the number of workers, but we know that there are approximately 1.2 consumers per provider working in the IHSS

<sup>11</sup> As the WHD pointed out, subtracting self-employed and household workers from the CPS does not give employment estimates for each occupation that are identical to the OES.

program. Similar consumer-to-provider ratios in other programs would imply that there were between 600 to 700,000 people employed by publicly-funded consumer-directed programs; the number of independent providers could be under-counted by as much as 500,000. In sum, there could be as many as 1.7 million PCAs and another almost 0.9 million home health care workers, for a total of 2.6 million direct care workers employed primarily in the home health and home care sectors. That still does not account for self-employed individuals working in private households for private pay.

How fast these occupations are growing seems equally imprecise. Two years ago, the BLS estimated that there were 1,017.7 million home health aides and only 861,000 PCAs and with projected growth of 70 percent in each occupation by 2020 (BLS Industry-Occupation Matrix 2010). The 2012 industry occupation matrix estimates indicate the number of PCAs has grown by 38 percent in just two years, while the number of home health aides has declined. The most recent National Employment Matrix puts the number of home health care workers at 875,100 and projected to grow by 48.5 percent by 2022; personal care aides, numbering 1.191 million, are similarly projected to grow by 48.4 percent. The volatility in the employment projections seems to originate in the surprising growth in the SEPD sector which is outpacing the home health sector.<sup>12</sup> We may also have too little understanding of what the SEPD sector is actually doing.

An analysis of the 2010 Current Population Survey illustrates key differences in the quality of jobs in the direct care workforce. More than 50 percent of direct care workers were employed in home and community settings, 22 percent as home health aides and 31 percent as personal and home care aides, while nursing homes employed 26 percent as nursing assistants. The remaining 21 percent worked in hospitals as nursing assistants or orderlies. A clear occupational hierarchy was evident, with the quality of jobs declining as the locus of work moved away from traditional sites: Hospital aides were the best paid, at \$12.98 per hour. They worked more hours than home health and personal and home care aides, were most likely to work full time and were far more likely to have private health insurance. In contrast, personal and home care aides earned a much lower median wage (\$9.50 an hour), worked fewer hours and were much less likely to work full time than hospital and nursing home aides. Nursing home aides fell somewhere in the middle (Howes, Leana & Smith 2012).

Hospital aides were also more likely to be married and have higher education levels than nursing aides and home health aides. They were younger, on average, than home health and personal and home care aides. Nursing home aides are more likely to be black and non-Hispanic, while home health aides are more likely to be foreign-born.

<sup>12</sup>As an indication of how different estimates can be using different surveys, we estimated that there were 669,000 HHAs and 945,000 PCAs using the CPS 2010 (Howes, Leana & Smith 2012). But the trend is similar; with the 2013 CPS, I find that there are already 1.447 million PCAs, a 42 percent increase in just 3 years.

Roughly one-third of home health aides and personal and home care aides had no health insurance, and another third were covered by public insurance. In contrast, three-fourths of hospital aides are covered by employer-sponsored health insurance. Real wages fell for both home health and home care workers between 1999 and 2007 despite a steady increase in the demand for their labor (PHI and DCWANC 2009). By contrast, wages rose for nursing aides, orderlies and attendants, in part because they work in hospitals where 20 percent are unionized and where their wages are linked to those of other unionized employees.

### **Job quality, recruitment and retention**

Although institution-based work sites offer better wages and benefits, there is considerable evidence that many long-term care workers prefer to work in home-based settings. Long-term care workers are motivated to do this kind of work, as they frequently report, because they value the personal relationship with their clients and the opportunity to provide empathic care. Even though they earn lower pay and often experience more hazardous working conditions, home health and personal care aides enjoy more autonomy, discretion, and flexibility than workers employed in institutional settings. Having some control over the terms and conditions under which they care for their clients enhances their ability to provide high-quality, empathic care. However, while many home care workers find intrinsic satisfaction in their job, the low pay and poor working conditions, lack of training and support, often prompt them to leave (Howes 2008).

Turnover is a generally accepted indicator of job quality. Turnover is high across all sectors of the long-term care industry, related to problems of low wages, low morale, absenteeism, and burnout (Seavey and Marquand 2011). Certified nursing assistant (CNA) turnover averages 71 percent a year in nursing homes nationwide, and it reaches even higher levels in many states (Decker et al. 2003). An estimated 40 percent to 60 percent of home health aides leave after less than one year on a job, and 80 percent to 90 percent leave within the first two years (IOM 2008). There are no large-scale studies of turnover among home care workers, but small-scale studies have found that these turnover rates are lower than those in home health care and considerably lower than in nursing homes, providing evidence that increased autonomy may offset some of the negative effects of low wages and benefits.<sup>13</sup> But there is a tipping point beyond which autonomy cannot substitute for adequate compensation.

<sup>13</sup> A review of thirteen state and two national studies of in-home care for persons with intellectual and developmental disabilities found an average turnover rate of 65 percent (Hewitt and Larson 2007). A study of consumer-directed home care workers in one county in California found a turnover rate of 24 percent and for the entire state, a turnover rate of 27 percent in 2003 (Howes 2004, 2005). One intent-to-leave study showed that 37 percent of home care workers intended to leave their job in the following year (Brannon et al. 2007). One statewide study conducted over a two-year period found that 47 percent of agency-based home care workers intended to leave and that 46 percent actually did (Morris 2009). Staff turnover in assisted living facilities ranges from 21 percent to 135 percent, with an average of 45 percent (Maas and Buckwalter 2006).

The disruption that comes from turnover likely lowers the quality of care provided as workers have less incentive to invest in temporary relationships. Further, frequent turnover requires existing care workers to work overtime, which makes them “susceptible to exhaustion, increased mistakes and decreasing quality of performance” (Hewitt and Lakin 2001). Turnover increases employer costs because of the need for continuous recruitment and training. The costs of long-term care worker turnover on the national level have been estimated to total \$4.1 billion per year (Seavey 2004). State-level studies also yield high estimates (Leon, Marainen, and Marcotte 2001).

The training and licensing of direct care workers varies from state to state, but is widely considered inadequate (Kelly et al. 2013). As the Institute of Medicine puts it, “the education and training of the direct-care workforce is insufficient to prepare these workers to provide quality care to older adults” (IOM 2008: 204). Certified nursing assistants who work in nursing homes have been required by federal mandate to receive 75 hours of training, including 16 hours of clinical training, since 1987. States must maintain a registry of licensed CNAs (DOL/WHM 2013, 64). Home health aides must also receive 75 hours of training, by federal mandate, including 16 hours of clinical training, and pass a competency exam, however, the training and competency requirements are less stringent for HHAs, and states are not required to maintain a registry of licensed HHAs (DOL/WHM 2013, 67). Progress is being made. Sixteen states now exceed the federal standards for hours of training (PHI 2013), and 12 states have required HHAs to be credentialed as CNAs (DOL/WHM 2013, 67). Six states have extended these requirements beyond 120 hours.

There are no federal training requirements for personal care and home care aides. Only 35 percent of states have a training hours requirement for PCAs in one or more programs, and, of these, 68 percent require 40 hours or less. In a small step toward more credentialing, 6 states were awarded federal grants from the Health Resources and Services Administration in 2010, to develop training programs for PCAs with the expectation that these will become the gold standard (PHI 2013).

Turnover and retention seem to be driven by different forces. Studies of home-based adult care workers show that turnover rates are elevated by low wages and benefits, and mitigated by attachment to the consumer. Consumers show a significant tendency to hire family members, friends, or individuals who share their ethnic background when given the opportunity (Howes 2004a, 2004b). This “dual-driver model” suggests that institutions must respect both intrinsic and extrinsic motivations, providing better wages and working conditions but also creating a supportive work environment that facilitates autonomy, discretion and collaboration. The lesson is similar for home-based workers, but the challenges are different. Too much autonomy and discretion, little or no training and little or no supervision, and low wages and benefits all contribute to a lower quality of care.

As I have shown in several studies of home care workers in San Francisco and California turnover rates can be reduced with higher wages and benefits, even when a worker is significantly motivated by nonpecuniary rewards (Howes 2013).

### Conclusion

There seem to be immutable demographic and cultural forces driving growth in the long term services and supports industry. Virtually all of the growth is occurring in the home- and community-based services that are displacing traditional institutional modes of care. Because of problems in the way we collect data and measure employment in non-traditional work places, we are not really certain how many people are working in some parts of the non-residential LTSS industries. But the foregoing analysis suggests that the most rapid growth is in the SEPD industries and in publicly-financed, consumer-directed home care programs. While the average quality of jobs, measured by wages, benefits and hours, seems to be much lower for home health aides and PCAs than it is for facility-based workers, workers still seek the job control and autonomy that comes with working in people's homes.

As the declining real incomes in the SEPD industry suggest, home care workers have had little success in improving their conditions of employment. The notable exception has been in some states, beginning with California, where unions were able to organize consumer-directed home care workers in Medicaid-funded home care programs. As a pre-condition, these "independent providers" had to be re-classified as state-employees for the purposes of collective-bargaining, an act that required legislative approval. Once the workers belonged to a collective bargaining unit, they made real progress increasing wages and benefits. The successes in San Francisco spread to other counties and other states.

Success required a change in the narrative about these jobs. When low income, middle-aged women are working part-time to take care of a family member, it is too easy to dismiss the work as marginal employment. But a significant proportion of IHSS workers who responded to a survey in 2004 reported that they were the primary earners in their families. They might have been working multiple jobs but the IHSS job was the anchor. And while they might have become an IHSS worker because a family member needed care, many of them viewed themselves as professional home care workers who would or had moved on to other clients (Howes 2008).

Collective bargaining in Medicaid-funded home care programs is a good first strategy to raising wages in this low-wage sector. In fact, home care workers' wages have only increased where there is collective bargaining or local minimum or living wage ordinances, or both, as in San Francisco. One of the advantages of targeting workers in these programs is that the consumer is not price sensitive since they are generally not



paying for the services and the worker is paid directly by the state.<sup>14</sup> In counties, or states, where consumer-directed care is a very large proportion of LTSS, wage increases in the public programs can have a significant impact on wages in the sector.

The same does not hold true in areas where publicly-funded home care services are provided by agencies, mainly because agencies are usually reimbursed on a per visit or hourly basis, but have considerable discretion to set wages. The agency has an incentive to keep wages and benefits as low as the market can sustain. The fact that a large portion of the funding comes from public sources that the underlying demand is growing, that the industry is essentially recession-proof and that demand is inelastic may explain why the for-profit SEPD sector is growing so rapidly. The incentive structure created by reimbursement policies in the absence of unionization explains why wages remain low. It may also explain why much of resistance to eliminating companionship exemption came from the for-profit industry, as is well-documented in the comments summarized in the Final Rule (DOL/WHd 2013).

Consumers and workers have expressed a clear preference for consumer-directed home care as a viable alternative to institutional and agency-based models. And yet industry resistance may be one of the major impediments to expanding the consumer-directed model and raising the floor on wages for home care workers.

On January 21, the Supreme Court heard the case of *Harris v Quinn*. A group of eight home care workers filed a class-action lawsuit claimed that their First Amendment rights were violated when they were forced to support a union in their dealings with state officials about the Medicaid program. Seven of the eight are employed by a family member to provide services through a Medicaid-funded consumer-directed home care program. Their suit has drawn the support of a collection of conservative legal advocacy groups, libertarian and free-market organizations, groups representing associations of family care providers, and advocates for small business. The larger issue in the case was whether public sector unionism violated the first amendment rights of workers who were forced to pay dues to unions that represented them, even if they did not choose to belong to the union. The plaintiffs were asking the Court to overturn a 1977 precedent in *Abood vs Detroit Board of Education* which extended the concept of agency shop to public sector unions. Under the agency shop theory, when a union becomes the sole representative for a group of workers it has a legal obligation to bargain for all workers, regardless of whether the worker has elected to join the union. All workers in the bargaining unit must assume financial responsibility for the costs of collective bargaining

<sup>14</sup> In the Final Rule, the WHD argued that the price elasticity of demand for home health and home care services was -0.17 for reimbursed services, e.g., for persons enrolled in Medicaid programs, and -1.0 for unreimbursed services; further, they found that at least 75 percent of home health revenue originated from public sources. As the analysis above argues, the share of SEPD, including home care, revenue originating from public sources is probably in this range as well.

and pay a “fair share” which excludes the costs of other union activities such as political advocacy.

Whether the Court rules of the broader issue of Abood, or just on the narrower issue of whether consumer-directed home care workers in a Medicaid-financed program are employees of the state, an adverse decision from the Court will cripple unions’ ability to organize home care workers. If the Court decides that these home care workers are not employees of the state, the state will have no authority to pull them into collective bargaining. If that happens in Illinois, all the other states, including California will follow and the only proven effective route to raising wages for homecare workers will be blocked.

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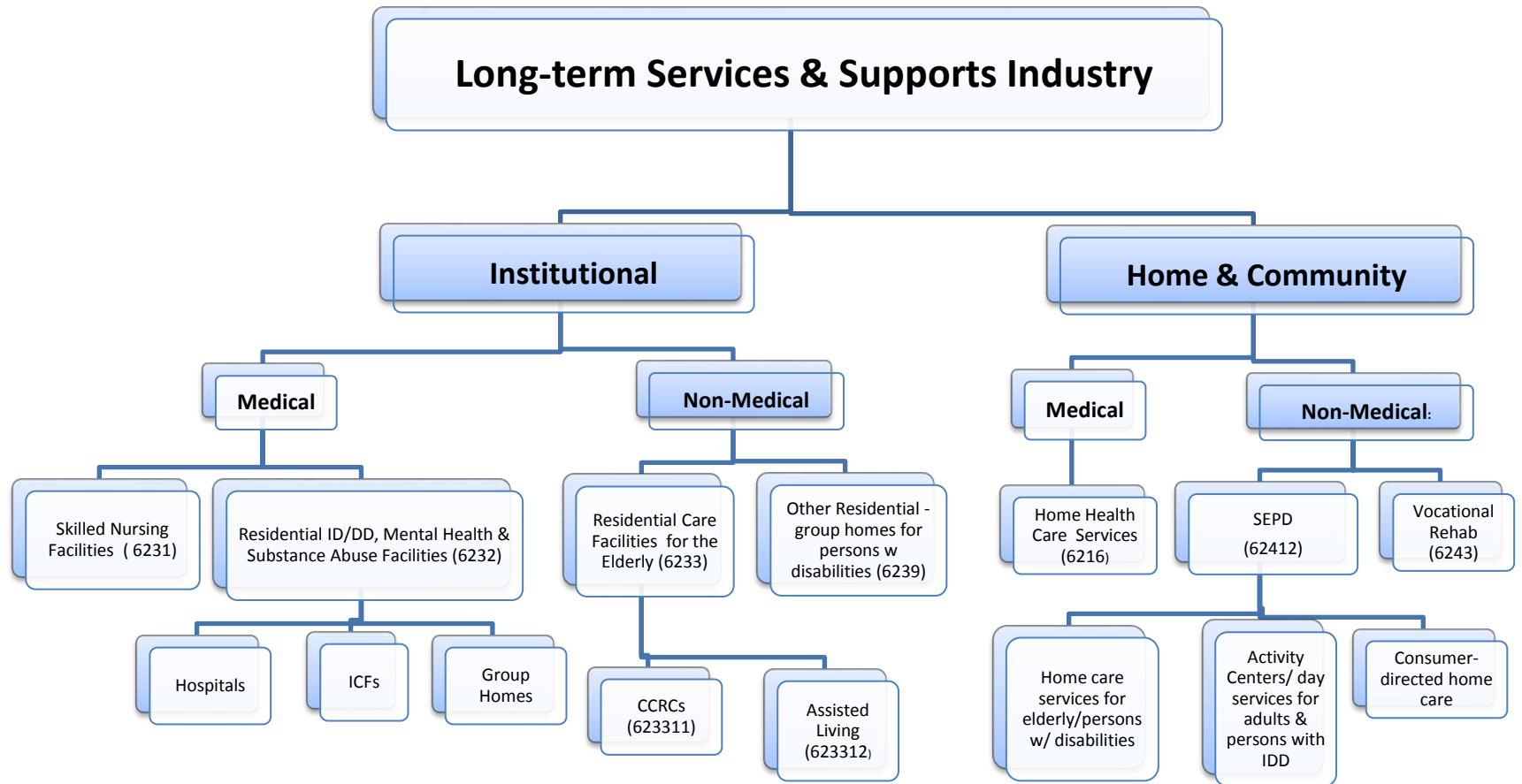


Figure 2

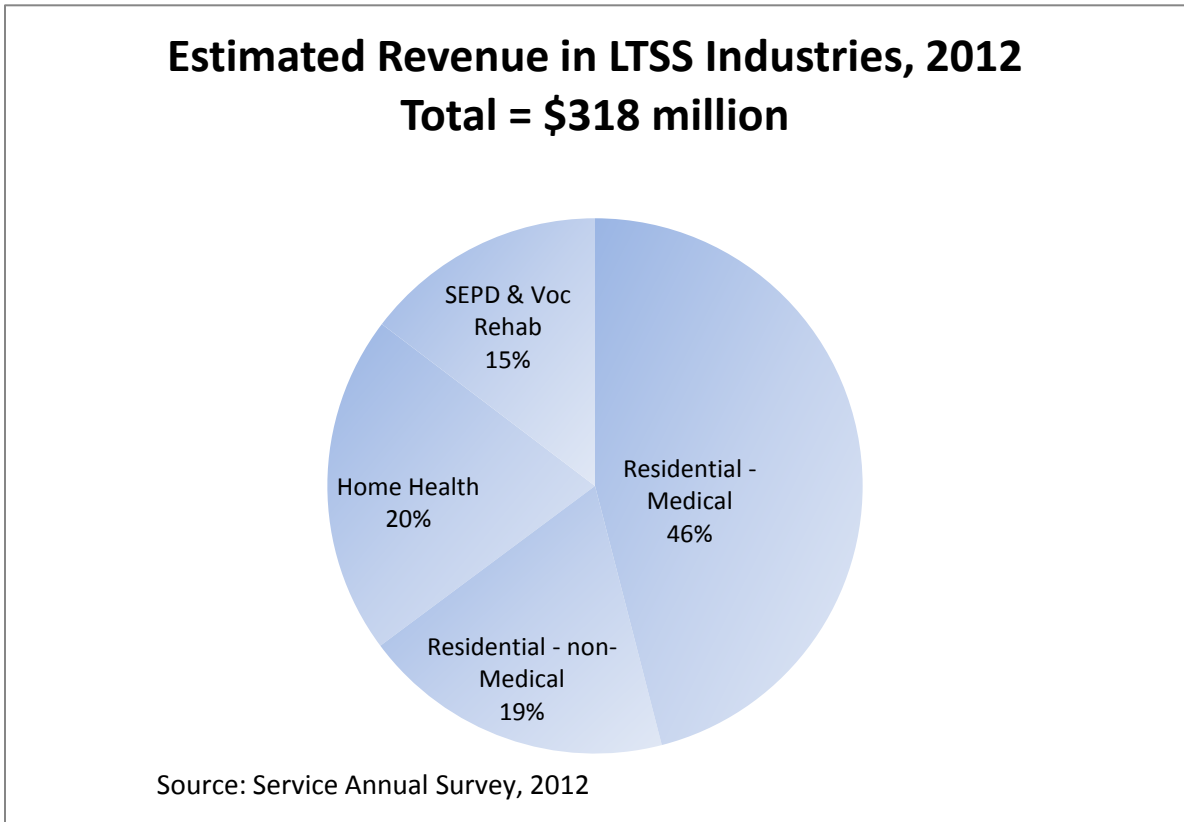
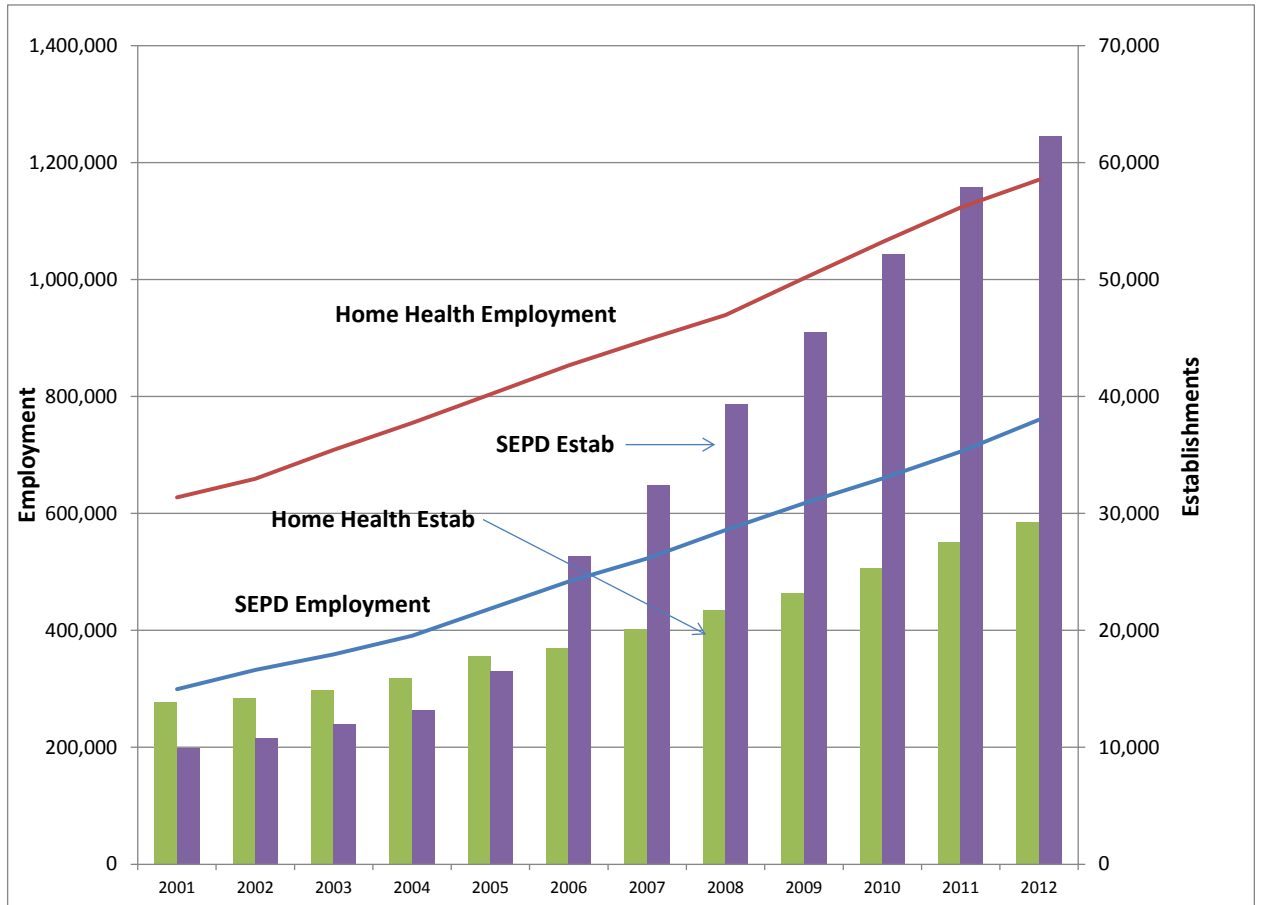
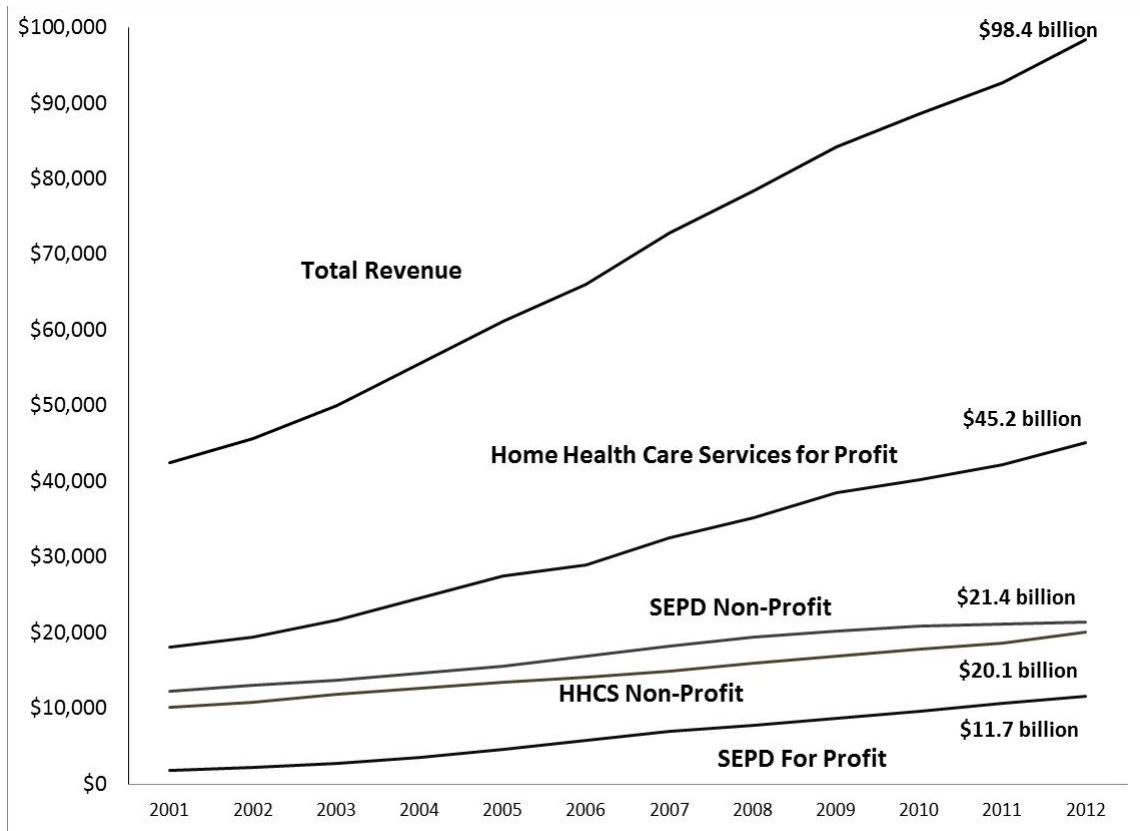


Figure 3. Number of Establishments and Employees, Home Health Services and SEPD, 2001 - 2012



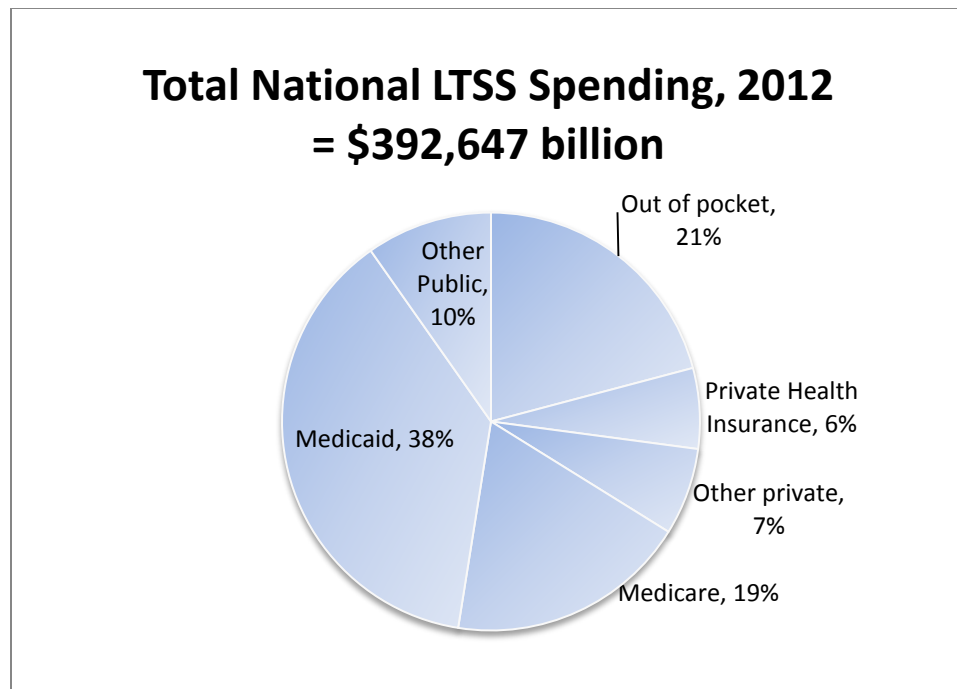
Source: Quarterly Census of Employment and Wages

Figure 4. Total Revenue, Home Health Services and SEPD, 2001 - 2012



Source: US Census, Service Annual Survey 2012

Figure 5.



Source: National Health Expenditure Accounts and Service Annual Survey

Table 1. Employment in Long-term Services and Supports, 2012 (thousands)

	<b>SNFs</b>	<b>Res Care</b>	<b>Total Residential</b>	<b>HHCS</b>	<b>SEPD</b>	<b>PH &amp; SE</b>	<b>Total Non-Residential</b>	<b>Occupation Totals</b>
Total	1,664.8	789.7	2,454.5	1,198.6	769.8		1,968.4	
Health Care Practitioners	418.8	86.5	505.3	303.0	24.3		327.3	8,049.7
Registered Nurses	139.6	30.7	170.3	164.9	11.8		176.7	2,711.5
LPNs	213.4	44.9	258.3	89.0	5.7		94.7	732.4
Health Care Support	689.3	294.4	983.7	399.7	161.2		560.9	4,110.2
Home Health Aides	33.6	116.4	150.0	323.0	141.2	22.3	486.5	875.1
Nurses Aides	621.1	167.6	788.7	64.6	16.7		81.3	1,479.8
Personal Care Aides	11.8	61.5	73.3	298.6	359.0	180.2	837.8	1,190.6
<i>All Aides</i>	666.5	345.5	1,012.0	686.2	516.9	202.5	1,405.6	3,429.6
<i>% aides</i>	0.40	0.44	0.41	0.57	0.67		0.71	

Source: BLS National Employment Matrix 2012

SNFs are Skilled Nursing Facilities (6231)

Residential Care includes CCRCs and Assisted Living (6233), Res Care for Persons with I/DD & Mental Disabilities (6232) and Other Res Care (6239)

HHCS includes Home Health Care Services (6216)

SEPD includes Services for the Elderly and Persons with Disabilities (62412)

PH and SE includes Private Household and Self-employed

Table 2 Characteristics of All Workers, All Low Wage Workers, Home Health & Home Care Workers, 2010

	<b>All workers</b>	<b>All low-wage workers<sup>2</sup></b>	<b>Home health aide</b>	<b>Personal care aide</b>
Number (in thousands)	152,145	42,634	669	945
Percent of all workers	100	28	22	31.1
Percent female	47.1	55	92.3	88
<b>Economic Characteristics</b>				
Median family income	\$64,030	\$33,000	\$28,673	\$30,800
In poverty	7.5	21.4	23.1	22
Median hourly wage <sup>3</sup>	\$16.82	\$7.75	\$10.00	\$9.50
Average weekly hours worked	38.5	35.4	33.4	33.9
Overtime (more than 40 hours per week)	20.9	13.5	10	12.1
Full-time employment <sup>5</sup>	79.3	64.5	59.1	58.4
Year-round full-time employment <sup>6</sup>	65	46	45.1	42.4
Self-employed	9.5	10	5.7	7.2
Two or more jobs	9.8	9.4	11.7	14.1
Union membership <sup>7</sup>	12	4.6	11.5	8.2
Health insurance				
Public	12.6	18.8	28.5	33.3
Private	74.2	52.2	43.9	45.1
No health insurance	19.3	35.1	33.1	31.2
<b>Demographic Characteristics</b>				
Average age	41.9	37.7	42.6	43.9
Education				
High school or less	38.3	55.5	58.9	55.2
Some college, no degree	19.8	23.7	20.9	24.4
Associate's degree	9.8	7.8	14.2	8.4
Bachelor's degree	21	10.1	4.4	9.6
More than bachelor's degree	11	2.9	1.6	2.4
Race and ethnicity				
White-non-Hispanic	68.8	59.6	42	49.2
Black, non-Hispanic	10.6	12.9	31.1	23.2
Asian, non-Hispanic	4.6	3.9	2.1	2.1
Other, non-Hispanic	1.9	2.2	3.5	3.2



	<b>All workers</b>	<b>All low-wage workers<sup>2</sup></b>	<b>Home health aide</b>	<b>Personal care aide</b>
Hispanic	14.1	21.4	21.3	18.1
Foreign-born	15.4	19.9	27.1	22.7
Marital status				
Married	54.9	38.8	34.6	35.2
Previously married	16.7	18	29.8	31.2
Never married	28.3	43.2	35.6	35.6
Children under 18 years	37.3	36.5	39.3	37.9
Single mothers	10.1	17.3	23.7	22.3

Source: Howes, Smith & Leana – analysis of ASEC 2010

Table A1. National Health Expenditures on Long Term Services and Supports, 2012

	<b>Residential Care</b>	<b>Home Health</b>	<b>Other Health, Residential &amp; Personal Care</b>	<b>Total</b>
Total Expenditures (000s)	176,656	77,781	138,237	392,674
Out of pocket	68,387	6,032	7,544	81,963
Private Health Insurance	12,033	5,582	6,855	24,470
Other private	7,461	1,019	18,000	26,480
Medicare	34,421	33,776	5,104	73,301
Medicaid	46,324	28,940	72,858	148,122
Other Public	8,028	2,433	27,876	38,337
<b>Total Private</b>	<b>87,881</b>	<b>12,633</b>	<b>32,399</b>	<b>132,913</b>
<b>Total Public</b>	<b>88,773</b>	<b>65,149</b>	<b>105,838</b>	<b>259,760</b>
Total Expenditures	1.000	1.000	1.000	1.000
Out of pocket	0.387	0.078	0.055	0.209
Private Health Insurance	0.068	0.072	0.050	0.062
Other private	0.042	0.013	0.130	0.067
Medicare	0.195	0.434	0.037	0.187
Medicaid	0.262	0.372	0.527	0.377
Other Public	0.045	0.031	0.202	0.098
<b>Total Private</b>	<b>0.497</b>	<b>0.162</b>	<b>0.234</b>	<b>0.338</b>
<b>Total Public</b>	<b>0.503</b>	<b>0.838</b>	<b>0.766</b>	<b>0.662</b>

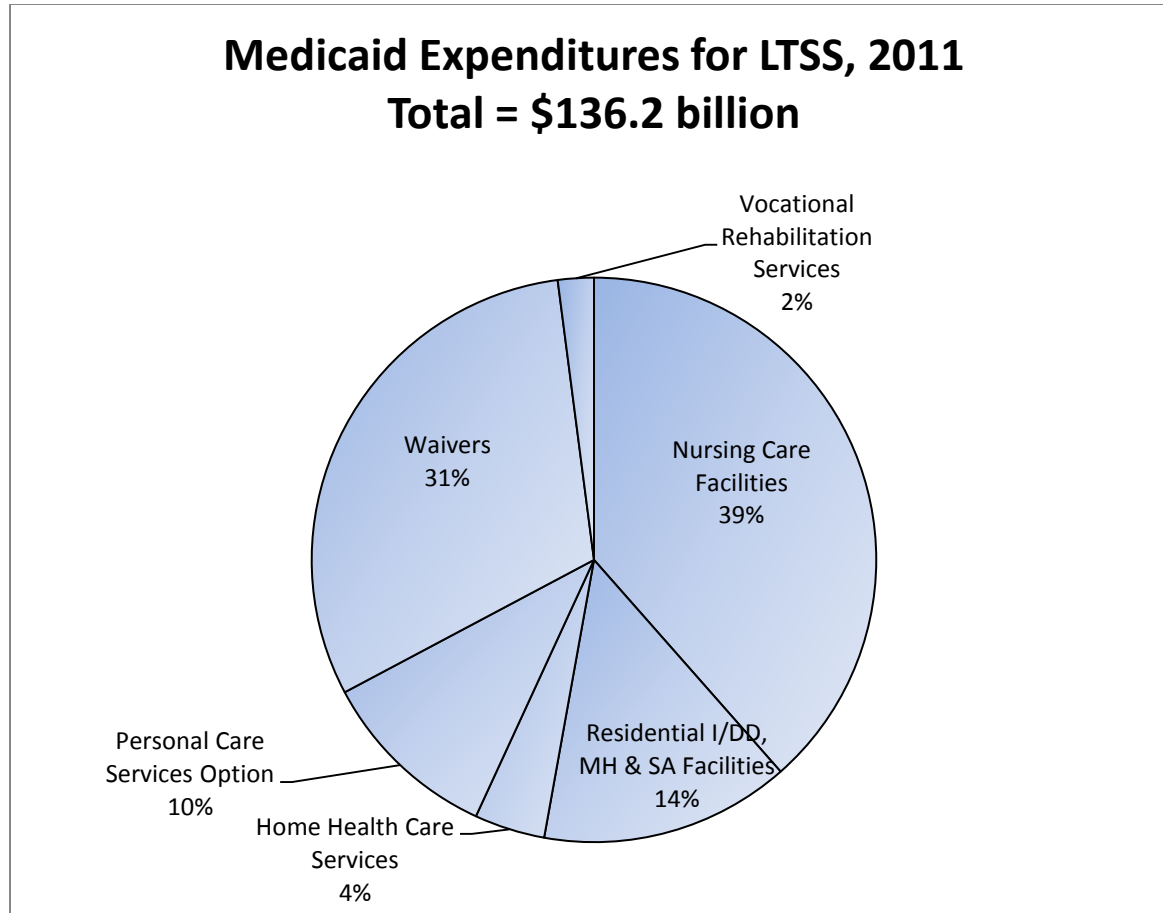
Residential Care includes Skilled Nursing Facilities (6231), Community Care Facilities for the Elderly (623311), Assisted Living (623312) and Other Residential Care (6239)

Home Health includes only Home Health Services (6216)

Other health, residential and personal services includes Ambulance Services (62191), Facilities for ID/DD (62321), Mental Health and Substance Abuse Facilities (62322), and all Medicaid Personal Care Option and Waiver programs.

Source: National Health Expenditure Accounts 2012; Service Annual Survey 2013; Eiken, et al. 2013

Figure A-1



Source: Eiken et al. 2013 analysis of CMS Form-64



# WOMEN WORKERS AND THE FAIR LABOR STANDARDS ACT, PAST AND PRESENT

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## Introduction

The 1938 Fair Labor Standards Act (FLSA) has set wage and hour standards for workers in the United States for the past 75 years. Enacted three years after the Social Security Act (SSA) and the National Labor Relations Act (NRLA) became law, the FLSA was a key component of the New Deal labor and employment regime. It helped to address what many 21st century commentators refer to as labor market "precarity" (Kalleberg 2011, Standing 2011, Vosko 2010). Although the term was not used in the 1930s, precarity was as widespread in the pre-New Deal era as it is today. Vast numbers of U.S. workers endured low pay, long hours, and employment insecurity, especially in the industrial sweatshops that had proliferated in the early 20th century. The Great Depression further intensified the problem of precarity, as cutthroat competition led to wage cuts and massive unemployment.

Although low wages and poor conditions would persist in agriculture, domestic service, and other sectors that were carved out of the legislation, the FLSA did help to eliminate sweatshops and employer abuses in manufacturing, then the center of the U.S. economy, and in other covered industries. By putting a floor under wages in those industries, the FLSA (along with other New Deal labor and employment measures) also contributed to the "Great Compression" (Goldin and Margo 1992) in income inequality that would remain intact until the mid-1970s.

Since the FLSA's passage, however, vast changes have taken place in the U.S. labor market. Perhaps the most far-reaching is the dramatic increase in women's labor force participation, which rose from less than 25 percent of the adult population in 1938 to nearly 60 percent today (Goldin 1990; U.S. Bureau of Labor Statistics 2013a). The FLSA's 75th anniversary provides a valuable opportunity to reflect on this landmark legislation's past and present significance from a gender perspective. This paper assesses the initial impact of the FLSA on women workers, analyzes the changes and continuities in regard to women's work over the decades since it was enacted, and highlights key challenges that lie ahead for updating fair labor standards to meet the 21st century needs for women workers in particular.

## **The FLSA and Gender in Historical Perspective**

The groundwork for the FLSA was laid in the late 19th and early 20th century when various states enacted "protective legislation," which mandated maximum hours and minimum wage laws for women and children. Although in the 19th century some states passed broader laws that regulated work hours for adult males as well, they did not survive court challenges; in practice only skilled male workers who were organized into trade unions were able to limit their work hours. In the decade following the 1908 *Muller v. Oregon* Supreme Court decision, which validated limits on women's work hours, all but nine states passed some type of maximum hours law for women. In this same period, 15 states, starting with Massachusetts in 1912, passed minimum wage laws for women and minors. Progressive era labor reformers saw women (and children) as vulnerable workers who needed special protection, to preserve maternal health and to prevent employer abuse. Organized labor also supported protective legislation, to forestall potential competition from cheaper female or child labor; in this period most unionists considered women simply "unorganizable." Trade unionists strongly opposed such legislation for men, however, fearing it could undermine efforts to organize them (Kessler Harris 1982: ch 7).

The political and cultural ground shifted, however, in the context of the deep economic crisis of the 1930s, finally making it possible to establish universal labor standards for both men and women - first through industry "codes of competition" under the ill-fated 1932 National Industrial Recovery Act and then under FLSA. Many trade unionists still opposed such laws for adult men, however; as late as 1936 the AFL called for minimum wage laws "for women and children but not for men." The AFL had a long history of mistrust for state intervention, and its leaders were wary of minimum wages in particular, concerned that "the minimum tends to become the maximum" (Samuel 2000: 34). However, CIO leaders - most notably "clear it with Sidney" Hillman of the Amalgamated Clothing Workers - supported the FLSA. Although Hillman's union did have a substantial female membership, women made up less than one-tenth of all U.S. union members in the 1930s - not even half their share of total employment (Dickason 1947).

Moreover, due to the multiple carve-outs that excluded many sectors from FLSA's reach, the legislation covered a far larger proportion of male than female workers. Under the political compromise that led to the law's passage, agriculture and domestic work were excluded, as well

as retail, laundry, hotel and restaurant work, food processing, and government employment. All of these were heavily female-employing fields, and as Alice Kessler-Harris' (2001: 106) authoritative account concludes, FLSA initially covered only 14 percent of employed women, compared to 39 percent of adult working men. On the other hand, among those who *were* covered by the law, a far greater proportion of men than women already were paid at or above the minimum wage it set (initially 25 cents per hour); in that respect women disproportionately benefited. Women in the garment and textile trades, where sweatshops were especially notorious, were among the most conspicuous beneficiaries of the FLSA (Mettler 1998: 186).

Enforcement, if never perfect, was relatively vigorous in the late 1930s and 1940s. The Wage and Hour division staff, as well as local and state officials, and trade unionists all helped to police the FLSA in this period (Herman 1939). Some commentators have argued that not only the largely African American agricultural and domestic labor workforce (which of course included large numbers of women) but also women workers generally gained little from the new law (Mettler 1998). However, labor feminists strongly supported FLSA at the time of its passage, and they subsequently struggled to extend its reach, while also working to improve state minimum wage laws. By the 1960s these efforts had led not only to the passage of the Equal Pay Act (itself an amendment to the FLSA) but also, by now with full support from organized labor and the civil rights movement, the 1966 amendments to the FLSA extending its minimum wage provisions to cover most workers in agriculture, state and local government, and retail and service work. In 1974 domestic workers finally won coverage as well (Cobble 2004: 96, 110-13, 200).

The FLSA was enacted against the backdrop of the Great Depression, and that context was critical in shaping the law and its gendered impact. Unemployment was higher among men than women during the 1930s, especially in the early years of the slump, due to longstanding sex-segregated employment patterns that confined most female workers to industries and occupations that were less vulnerable to the worst effects of the crisis than male-dominated manufacturing and construction sectors. Unemployment soared in the latter industries after the 1929 crash, while its level in pink-collar jobs in office, sales and service jobs was lower and materialized more gradually (Milkman 1976).

Although it remained extremely rare for employers to substitute men for women, the hegemonic family wage ideal (that a married man's wage ought to be adequate to support a



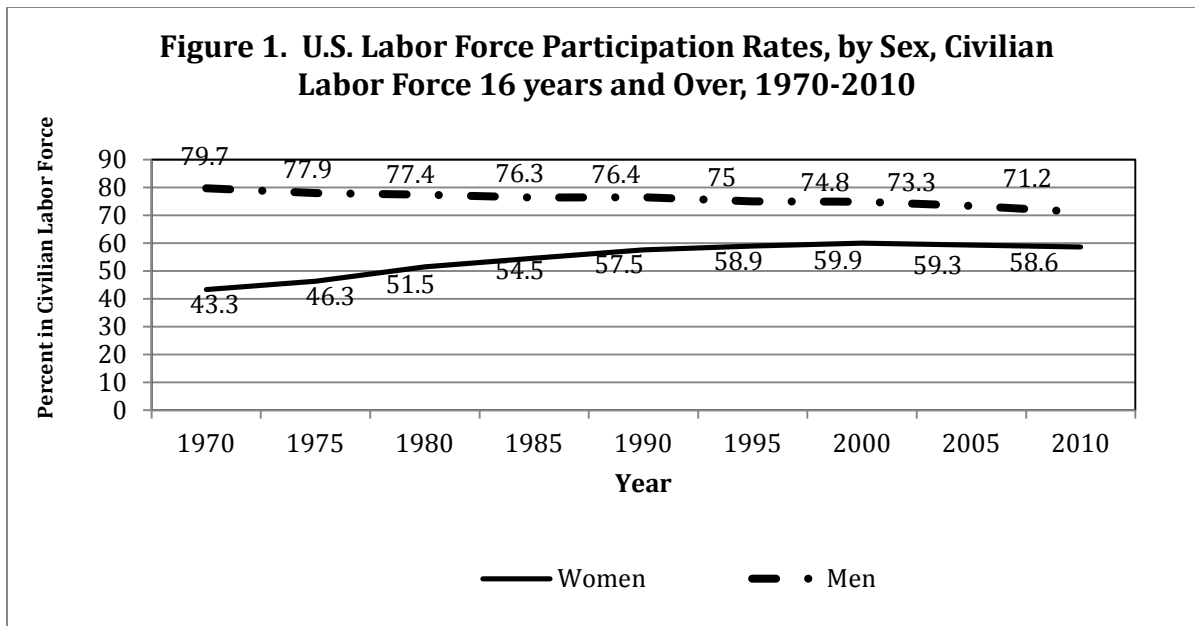
family) led to popular condemnation of married women's employment, and "marriage bars" spread in the 1930s more widely than ever before. Professional women, who had made significant gains in the 1920s, were especially affected by these measures, and their share of the female labor force fell during the Depression (Scharf 1980). In any case, most were in poorly paid female-dominated "semi-professions" like teaching, nursing, and social work; the elite professions were still virtual male monopolies. Professional women often faced discrimination and other challenges that paralleled those of working-class women.

As had been the case prior to the 1930s, most women of all social classes left the paid labor force when they married or when they had their first child, unless economic necessity dictated otherwise. Economic necessity, however, was more prevalent in the depression decade than previously, due to widespread male unemployment. Indeed married women's labor force participation rate *rose* between 1930 and 1940 - even if it remained modest by late 20th century standards (Golden 1990: 129; Scharf 1980: 107). Regardless of marital status, however, the vast majority of employed women were confined to low-wage jobs; formal sex differentials in pay were common (and perfectly legal).

The other critically important aspect of the 1930s context was that it ushered in what economic historians Claudia Goldin and Robert Margo (1992) have called the "Great Compression" in income inequality. The array of New Deal regulatory legislation, including the FLSA, played a key role in bringing that about, as did the labor upsurge that began during that decade and then continued into the 1940s. Women remained underrepresented in union ranks, but their share of total union membership grew dramatically, from 8 percent in 1930 to 22 percent in 1944, thanks to the World War II influx of women into the basic industries in which industrial unionism had expanded dramatically just before the war (Dickason 1947: 71). Although women's presence in that sector proved short-lived, the war years did set the pattern for ongoing expansion in female labor force participation.

### **Changes and Continuities in Women's Work in the Postwar Decades**

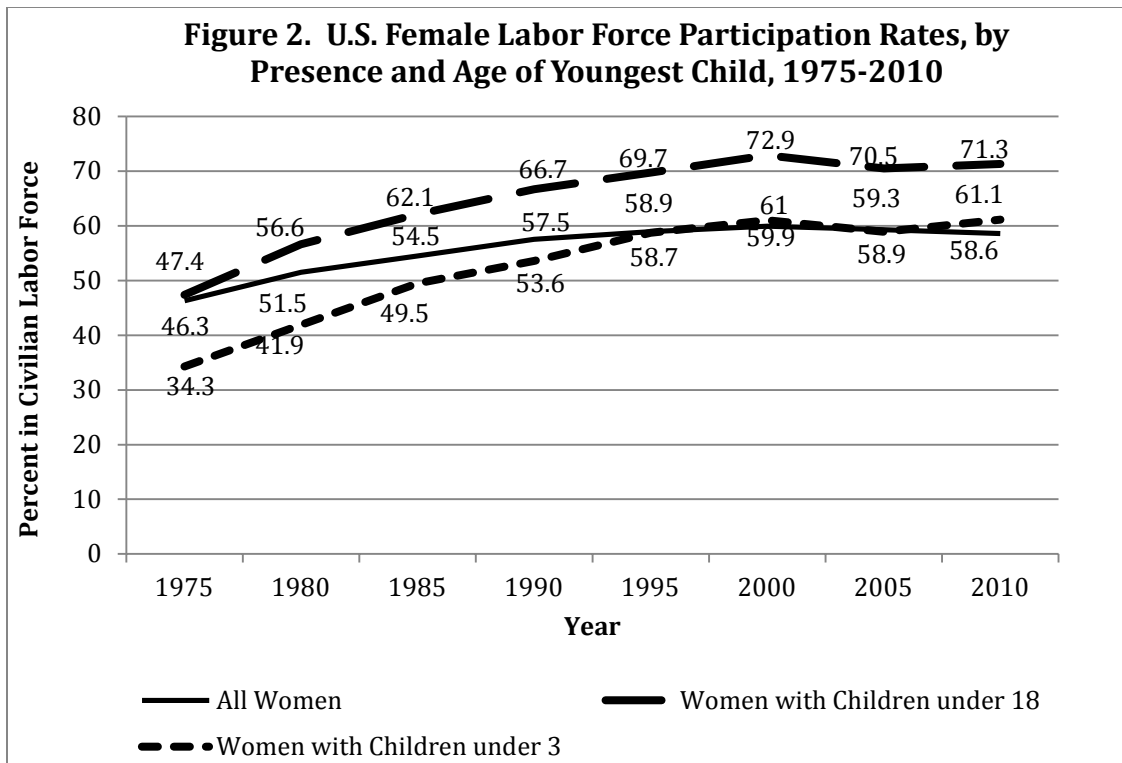
Indeed, female labor force participation grew steadily in the postwar era, as married women and mothers increasingly sought paid employment. By 1970, 43 percent of adult women were in the labor force, compared to 30 percent in 1950 (Goldin 1990: 17). As Figure 1 shows, the figure had increased to 59 percent by 2010; in contrast, the male participation rate (for those 16 years and over) fell from 80 to 71 percent between 1970 and 2010, sharply reducing the gender gap in labor force participation.



Source: U.S. Bureau of Labor Statistics 2013a

The primary driver of this growth in female labor force participation, as Figure 2 shows, was expanded employment among married women and mothers, which in turn was driven by the stagnation in male real wages that began in the mid-1970s. Indeed, the period that saw the greatest changes in women's employment was also the period in which the New Deal order, of which the FLSA was one key component, began to unravel in the face of deindustrialization, deregulation and deunionization. As the "Great Compression" in income inequality came to an end, working families responded by sending more members into the paid labor force.

In 1975, 47 percent of all mothers, and 34 percent of those whose youngest child was under 3 years old, were in the labor force. By 2010 those figures had risen to 71 percent and 61 percent, respectively. The era when male workers could aspire to earn a "family wage" sufficient to support a wife and children remained an object of nostalgia for many, but by 2009, only 21 percent of all married-couple families with at least one wage-earner were supported exclusively by husbands' earnings;

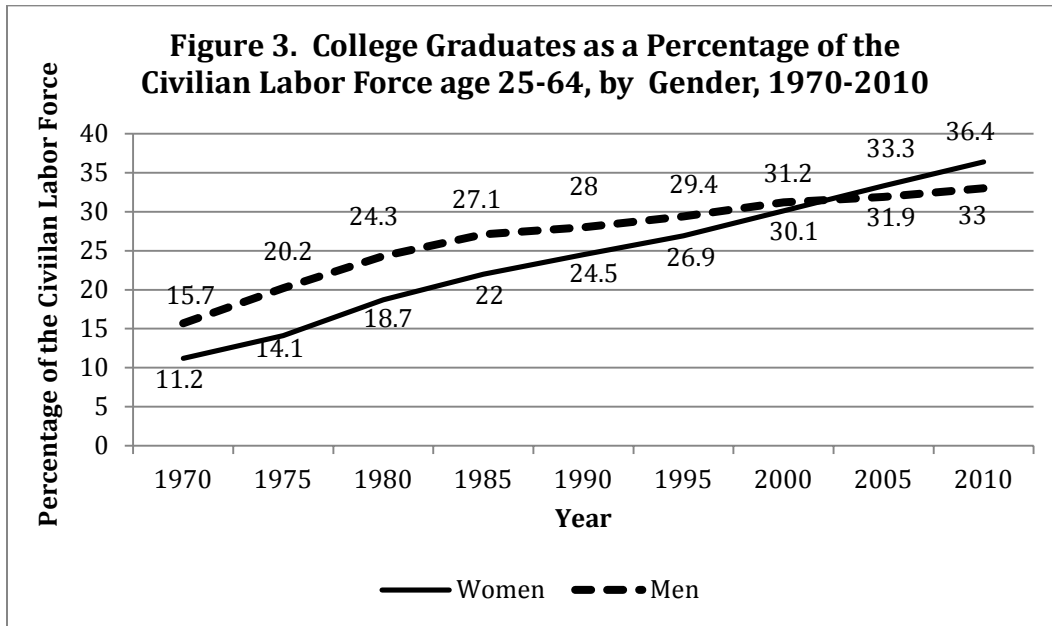


Source: U.S. Bureau of Labor Statistics 2013a

over two-thirds (69 percent) had two or more wage earners, in most cases husbands and wives (U.S. Bureau of Labor Statistics 2011: 75). Moreover, the number of women supporting families on their own (often in poverty) surged in this period. By 2008, 30 percent of all U.S. households with children were headed by a single parent, and in the vast majority of cases that parent was female and in the labor force (U.S. Census Bureau 2012: 840). In sharp contrast to the situation in the early 20th century, when wives and mothers were rarely employed outside the home, then, labor force participation has become the norm for women throughout their adult lives, regardless of marital status and whether or not they have children.

Another striking change in the gender dynamics of the labor market during this period involved the vast expansion of post-secondary education. As Figure 3 shows, as recently as 1970, only 11 percent of women aged 25 to 64 in the civilian labor force had completed four years of post-secondary education. By 2010 that figure had more than tripled, to 36 percent. Over the same period, the share of male workers in this age group who had completed college also rose steadily – indeed this helps explain the decline in male labor force participation shown in Figure 1.

Whereas in the late 20th century the share of the civilian labor force made up of college graduates was higher among males than females, their positions were



Source: U.S. Bureau of Labor Statistics 2013a

later reversed, as Figure 3 reveals. This helped foster gender equity in the upper tier of the labor market, since educational institutions, especially at the post-secondary level, tend to be more meritocratic and less gender-segregated than employment settings – another tendency that became increasingly pronounced in the last few decades of the 20<sup>th</sup> century (England 2010: 155).

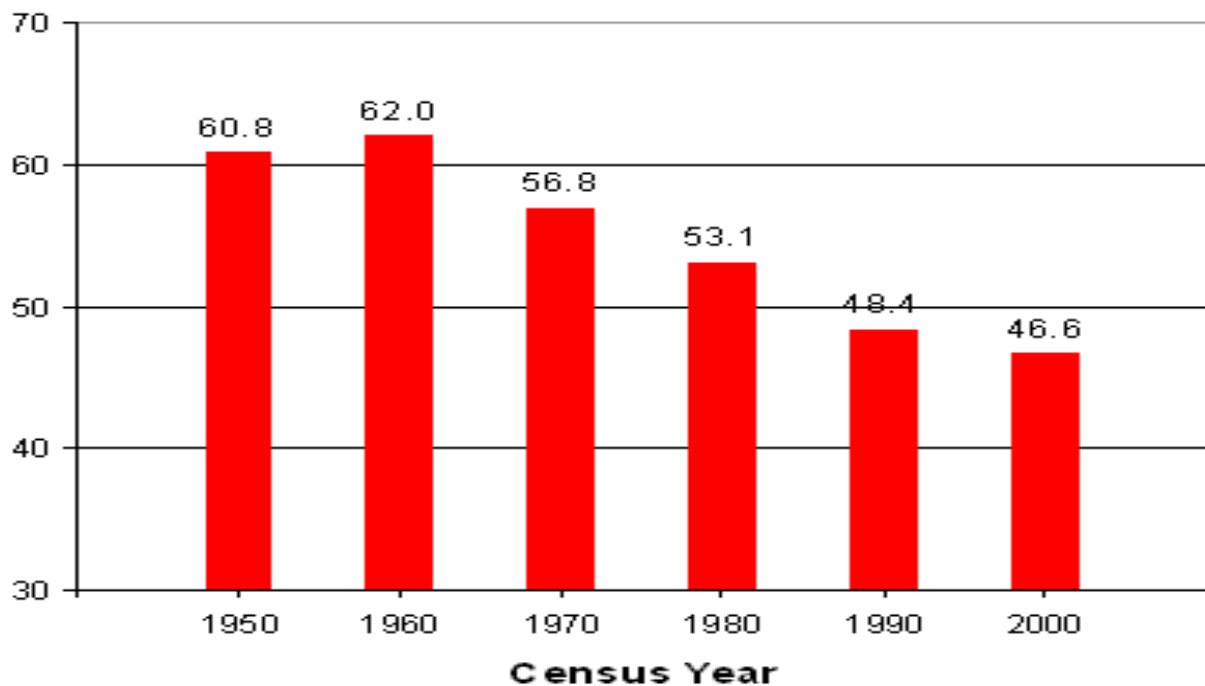
Insofar as educational credentials improved access to desirable jobs, they also helped expand women’s employment opportunities over this period. The same phenomenon emerged among college graduates who went on to professional schools in elite fields like law, medicine, and academia, in which an advanced degree is the main requirement for labor-market entry (Goldin 2006: 94). Gaining access to professional education enabled women to make disproportionate advances in such professions relative to fields in which subjective employer hiring decisions determine access to entry-level jobs (e.g. corporate management).

These developments, together with the passage in the 1960s of pathbreaking legislation prohibiting sex discrimination in employment and education, including the 1963 amendment to the FLSA mandating “equal pay for equal work,” produced significant progress toward gender equality in the workplace starting in the late 1960s and continuing into the late 1980s, even as

class inequalities began to widen. Longstanding patterns of job segregation by gender and inequality in earnings were by no means eliminated, but both were significantly reduced in this period – in marked contrast to the first two-thirds of the 20th century, when these twin linchpins of gender inequality seemed impervious to change, even in the face of the major economic upheavals associated with the Great Depression and the two world wars (Gross 1968; Milkman 1987).

Indeed, occupational sex segregation declined substantially in the United States during the 1960s, 1970s and 1980s, as Figure 4 shows. It depicts the “index of dissimilarity,” a standard measure of segregation that in this case specifies the proportion of men or women who would have to change occupations in order for both genders to be equally distributed through all occupations, which was stable for

**Figure 4. Occupational Segregation by Gender, United States, 1950-2000**



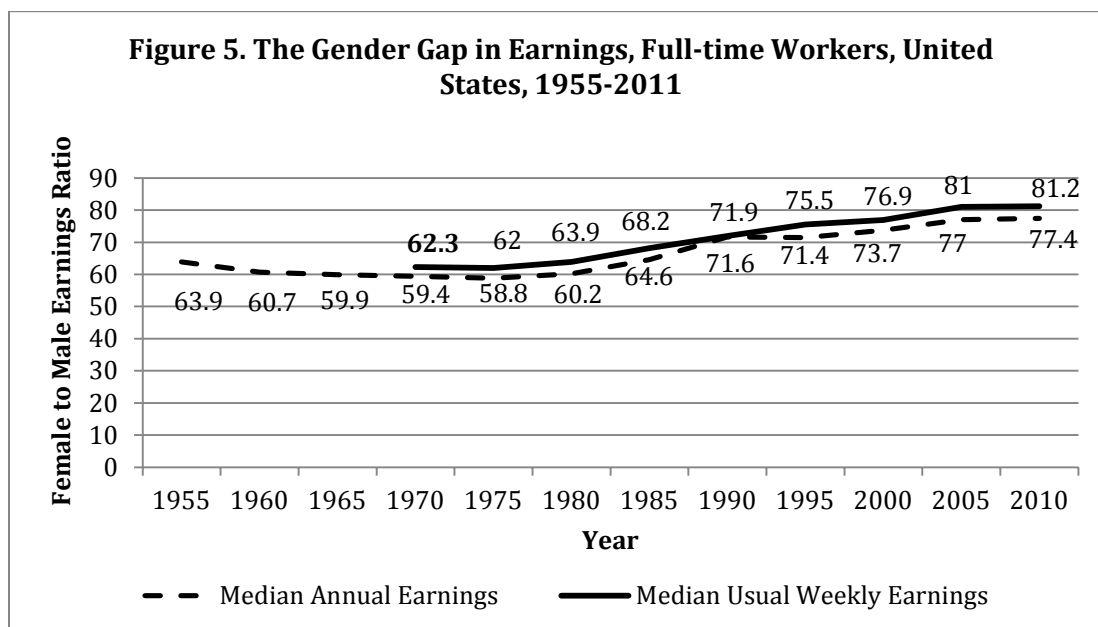
Source: <http://www.bsos.umd.edu/socy/vanneman/endofgr/ipumsoccseg.html>

the first half of the 20th century (Gross 1968) but declined significantly after 1960. As England (2010: 158) has noted, however, gender segregation declined most sharply in professional, managerial and nonretail sales jobs, while the change was marginal in “working class” occupations. Other analyses have also shown that occupational segregation by gender declined much more for college-educated workers than for those with less education (Hegewisch et al

2010). Because African-American and Latino women are underrepresented in upper-level jobs, they are disproportionately affected by this class disparity, but the extent of segregation between men and women has declined *within* both these race/ethnic categories since the 1970s (Hegewisch et al 2010). By the 1980s, the overall extent of occupational segregation by gender was substantially lower in the United States than in most other advanced industrial countries (Charles 1992).

Occupational segregation is closely tied to gender inequality in earnings. Although direct pay discrimination against women doing the same job as men has by no means disappeared, what has an even larger impact on the gender pay gap is that the jobs in which women predominate typically are underpaid relative to those in which men are concentrated (Hegewisch et al 2010). As Figure 5 shows, paralleling the pattern of change over time in occupational segregation, the female-to-male earnings ratio among full-time workers rose substantially in the 1970s and 1980s (although not the 1960s), with slower progress in the 1990s. Moreover, whereas the United States has been an international leader in reducing occupational segregation by sex, this is not the case with the gender gap in earnings. As Blau and Kahn (1996) have shown, most other advanced countries have a much smaller gap, largely reflecting the higher level of overall earnings inequality in the United States, and its lower rates of unionization. The U.S. earnings gap likely would be even larger if not for the fact that the gender gap in unionization rates has greatly narrowed over recent decades; yet because U.S. female union members are highly concentrated in the public sector while the dwindling ranks of private-sector union members are disproportionately male, the feminization of union membership has had limited impact (see Milkman 2007).

The class pattern of gender disparities in earnings is complex in another respect as well: while women in elite jobs advanced economically far more than those at lower levels in the labor market in *absolute* terms over the course of the late 20<sup>th</sup> century, the *relative* decline in earnings inequality by gender was smaller for women at the top than for women generally, because the earnings of men in elite jobs rose far more rapidly than those of other men over this period (McCall 2010: 309). As in the case of occupational segregation, class overlaps considerably with race and ethnicity: African American and Latina women are underrepresented among women in elite jobs; but those women of color who are in the upper tier of the labor market are faring nearly as well as their white counterparts.



*Note:* Comparable data for median usual weekly earnings are not available prior to 1970.  
*Source:* Institute for Women’s Policy Research (2012)

Yet another factor contributing to the gender gap in pay is the “motherhood penalty.” Employed mothers experience a wage penalty averaging about 5 percent per child, and mothers often experience discrimination in job performance evaluations as well. By contrast, men are not penalized, and sometimes benefit, from fatherhood. As a result, the gender gap in pay typically grows over the female life cycle: by the early 21<sup>st</sup> century, among young workers (under age 35), the pay gap between mothers and non-mothers exceeded the female-male gap (Correll et al 2007). Given the high rate of maternal labor force participation, the motherhood penalty is an increasingly important obstacle to efforts to advance gender equality.

### **Class Inequality among Women and the Limits of U.S. Work-Family Policy**

Adding to the challenges facing employed mothers in the United States is the nation’s weakness in regard to work-family policy. Although every other advanced industrial country (and most developing countries as well) guarantees paid leave to employed mothers (and in many cases, fathers) when they take time off to care for a new child, the United States is famously exceptional in its failure to do so. Similarly, the nation is an outlier in regard to childcare provision for the offspring of working parents. Such care is rarely offered by public

entities, except to the poorest families. Modest tax deductions are available to some families for dependent care expenses, but otherwise such care is largely a market-based phenomenon. Childcare is typically either provided by family members or obtained privately; the latter is not only expensive but often of poor quality (Gornick and Meyers 2003: 185-235).

Since 1993, the Family and Medical Leave Act has guaranteed some workers *unpaid* job-protected leaves of up to twelve weeks for parental or medical leave, but this law covers only about half the workforce, and many of those who are covered cannot afford to take unpaid leaves. Five states have temporary disability insurance programs that provide partial wage replacement during and immediately after pregnancy, and three of the five also have recently established paid family leave programs. In the rest of the country, however, paid leave for pregnancy or caring for a new baby is available only to those whose employers provide it voluntarily.

Employers offer such benefits primarily to college-educated workers and those with firm-specific skills whom they are eager to retain, especially managers and professionals. In the private sector, non-college-educated workers and others in jobs with low pay and status often lack access even to paid sick days, and very few have access to paid parental leave (with the exception of union members, who often obtain such benefits through collective bargaining). In 2006-08, two-thirds of employed mothers with four or more years of post-secondary education received some type of paid maternity leave before or after the birth of their first child, while only 18 percent of those with less than 12 years of education did so (Laughlin 2011).

All workers are affected by the deficiencies of paid family leave policy in the United States, but the need for financial support during and after pregnancy is particularly acute for those in the bottom and middle layers of the labor market, especially given that their real incomes have declined sharply in recent decades. Again, this affects African American and Latina women disproportionately, since they are disproportionately concentrated in the lower reaches of the labor market.

Not only has income inequality expanded rapidly in the United States since the 1970s, but its social effects have been further multiplied by homogamous marriage and mating patterns – the tendency for people to choose partners and spouses from class backgrounds similar to their own. Indeed, income homogamy has increased within married couples in the same period that inequality has grown.



Families are also more stable among the affluent, who typically marry at later ages and have lower divorce rates than their less privileged counterparts. At the other end of the economic spectrum, in contrast, families are disproportionately headed by single mothers employed in low-wage jobs (McCall 2010). And in working and middle class married-couple households, the demise of the “family wage” means that what were once “second incomes” earned by wives and mothers have become increasingly essential to meeting basic living costs in recent decades.

These disparities are further aggravated by the ways in which work schedules are structured in the United States. Professional and managerial workers not only have greater economic resources at their disposal, but also tend to have more flexible schedules than low-wage workers. Many low-wage service workers are not permitted to leave their jobs even briefly to attend to an ill child or to escort a family member to a medical appointment. Although managers and professionals (of both genders) often are required to work far longer hours than they would prefer, they typically have far more control over the way in which their time is distributed across work and family responsibilities.

In some contexts, part-time work can be helpful to employed parents as they struggle to balance work and family, and therefore some workers do work part-time voluntarily; not surprisingly, women are overrepresented in that group. But a larger number of non-supervisory workers instead seek more hours of employment than they are offered by their employers (Jacobs and Gerson 2004). And a growing number of low-wage workers in retail and hospitality, especially women, are now employed in jobs where hours are both limited and erratically scheduled. The increasingly widespread practice of consumer-driven scheduling impacts not only workers' hours but also their earnings, while unpredictable schedules wreak havoc with child care arrangements and other family responsibilities. (Lambert 2008)

Thus alongside the broader trend of rapidly growing inequality since the 1970s, class disparities *among women* have become increasingly salient in regard to occupational segregation, the gender gap in pay, as well as in regard to work-family issues. African Americans and Latinas remain underrepresented in the ranks of affluent, college-educated women, but those in this privileged group - regardless of race and ethnicity - have shared in the gains that have been made in gender equity since the rebirth of U.S. feminism in the 1960s. For women in the middle and lower tiers of the labor market, gender inequalities are much sharper. To win advances in gender equity for them, challenging the broader structure of class inequality is imperative.

Restoring the norms of the New Deal era, along with the types of economic regulations it ushered in, could play a vital role in this process.

### *Updating the FLSA for 21st Century Women Workers*

The dramatic changes that have taken place since 1938 in the situation of women workers, and especially since the mid-1970s, suggest the need to rethink labor and employment policy for the 21st century. While the FLSA and the other bedrock labor and employment laws enacted during the 1930s remain "on the books," their effectiveness has been greatly reduced. Ironically, shortly after 1974, when domestic workers finally won coverage under FLSA, completing the long process of extending its minimum wage protections to include all major groups of nonsupervisory employees, other developments began to erode its promise of providing a floor under which wages and conditions could not fall.

One of these developments was the failure of the statutory federal minimum wage to keep up with inflation. In real terms it reached its peak value in 1968. In 2013, the \$7.25 minimum wage was equivalent to the inflation-adjusted 1950 level. As a percentage of average hourly earnings for production and non-supervisory workers in nonfarm private-sector work, the real minimum wage also peaked in 1968, at 54 percent; by 2013 it had fallen to 36 percent of that figure (Elwell 2013). Although many states have higher minimums, they too have declined in real value.

This is a particularly serious problem for women workers. As noted above, the narrowing of the overall gender gap in pay has not "trickled down" to the lowest levels of the labor market. When increases in the federal minimum wage do occur, they disproportionately benefit women workers - especially African American, Latina, and foreign-born women. This is simply because more females than males, and more women of color and immigrants than U.S.-born whites, are paid at or near the legal minimum wage (U.S. Bureau of Labor Statistics 2013b). A recent study (Hall and Cooper 2012) found that women were 55 percent of the workers who would benefit from increasing the federal minimum wage from its current level of \$7.25 to \$9.80, as was proposed in 2012. Women were 48 percent of employed workers at that time (U.S. Bureau of Labor Statistics 2013a).

Further adding to the difficulties facing women at the bottom of the labor market, enforcement of the FLSA and related state laws has deteriorated. Staffing levels in enforcement

agencies have declined sharply over the postwar decades (Bobo 2008), and even with the post-2009 increases in staffing at the Wage and Hour Division, capacity to monitor the nation's workplaces and enforce the law remains severely limited. This is one reason that employer violations of the FLSA and other New Deal laws have become commonplace. Although data on the prevalence of such violations are scarce, and those that are gender-differentiated even more so, a 2008 representative survey of low-wage workers in New York Chicago, and Los Angeles conducted by a team (including the present author) suggests that women are disproportionately impacted (Bernhardt et al 2009).

As Table 1 shows, this survey found significantly higher violation rates among women than among men, especially for payment below the legal minimum wage - commonly known as "wage theft." Rates were even higher for foreign-born women, especially the unauthorized. This survey sample was limited to workers at the bottom of the labor market (roughly the bottom 15 percent) in the three cities. Declining union density has further contributed to the deterioration of FLSA enforcement, since in workplaces where they have a presence, unions often bring violations to the attention of government agents. Today unionization rates are now at pre-New Deal levels. However, in contrast to the situation a century ago, when

**Table 1. Violation Rates by Gender, New York, Chicago, and Los Angeles, 2008.**

<b>Type of Violation</b>	<b>Women</b>	<b>Men</b>
Paid Below Minimum Wage	30.2%	19.5%
Not Paid Time-and-a-half for Overtime	78.8%	74.5%
Meal Break Denied, Shortened, or Interrupted	74.4%	64.6%

*Note:* The percentages shown for overtime violations are for respondents who worked more than 40 hours in the previous work week; those for meal break violations are for those who worked enough hours to qualify for a meal break.

*Source:* Bernhardt et al 2009.

many unionists were wary of state intervention in the labor market, organized labor is now the primary political force advocating increases in the minimum wage and other improvements in labor standards. This is the case despite the fact that the vast majority of union members (of both genders) already earns well above the legal minimum and enjoy other basic protections.

Whereas in the early 20th century, as noted above, many unions supported protective legislation for women and children only, today organized labor opposes carve-outs for any segment of the workforce, instead advocating universal coverage.

Women workers currently are 46 percent of U.S. union members, just below their 48 percent share of all employed workers (U.S. Bureau of Labor Statistics 2013a). However, a large share of female union membership is made up of teachers and other college-educated workers, most of whom are employed in the public sector. These workers are far less likely to experience FLSA violations than their less-educated counterparts. As Table 2 shows, although the overall gender gap in unionization rates is relatively small (especially compared to the 1930s), among the less-educated union protection is far more limited among women than men.

In addition, the increasingly common practice of converting workers from traditional "employees" into "independent contractors," excludes a growing number of them from coverage under FLSA (as well as the NLRA and SSA). There is evidence that these arrangements often involve illegal misclassification of workers who are actually employees (U.S. Government Accountability Office 2009). The fragmentary data available suggest that men are overrepresented in the independent contractor population (U.S. Bureau of Labor Statistics 2005, Table 5), but substantial numbers of women are also affected. The recent growth of internships and of "off the books" employment, as well as the proliferation of subcontracting in various forms, also has

**Table 2. Unionization Rates by Gender and Education, U.S. 2012-13.**

	<b>Less than High School</b>	<b>High School Graduate</b>	<b>Some College</b>	<b>College Graduate</b>	<b>Overall Rate</b>
Women	5.1%	7.9%	8.4%	15.6%	10.6%
Men	6.0%	13.6%	14.4%	10.6%	12.0%

*Source:* U.S. Current Population Survey, Outgoing Rotation Group, January 2012-June 2013, inclusive.

contributed to erosion in FLSA's effective coverage. These developments reflect employers' efforts to shift market risk away from the firm to subcontractors or directly to workers themselves, and have greatly contributed to the growth of labor market precarity (Kalleberg 2011).

Another way in which employers are externalizing market risk involves scheduling. In the late 19th and early 20th centuries, long hours were among the most important concerns for U.S. workers. Labor struggled mightily for the eight-hour day, and for extra pay for overtime work - goals that were finally achieved with the passage of the FLSA (albeit not for those who were not covered by the law). Among law-abiding employers, this has been highly effective;

especially in the low-wage labor market, many of them go to great lengths to limit hours to 40 per week. However, they often accomplish this by employing large numbers of part-time workers whose hours can be adjusted in tandem with consumer demand, along with a smaller core of full-time workers (Lambert 2008). This has led to a new problem, especially widespread in sectors like retail and hospitality, where women are highly overrepresented: hours that are unpredictable and often shorter than workers would prefer. Historically, labor reform advocates and unionists alike supported maximum hours laws, especially for women (and children) but the idea of *minimum* hours laws was never on the agenda.

In conclusion, the FLSA's effectiveness has been eroded since the 1970s by a combination of several interrelated factors, including failure to legislate minimum wage increases to keep pace with inflation, declining resources for enforcement, and falling unionization levels. Outright violation of the law has become commonplace, along with misclassification of employees as independent contractors. Legal forms of subcontracting and other employer practices that fall within the law, such as "just in time scheduling" have also reduced the coverage of the nation's bedrock labor and employment laws. Women low-wage workers have been disproportionately impacted by all of these practices, although their plight has received far less public and media attention than the situation of female professionals and managers, who have disproportionately benefited from recent progress toward gender equality in the labor market.

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# **The Impact of the 1996/97 and 2007/08/09 Increases in the Federal Minimum Wage on Food Security**

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## Summary

The U.S. federal minimum wage increased from \$4.25 to \$4.75 in October 1996 and from \$4.75 to \$5.15 in September 1997 and from \$5.15 to \$5.85 in July 2007, \$5.85 to \$6.55 in July 2008, and from \$6.55 to \$7.25 in July 2009. This paper estimates the extent to which these increases improved the ability of households to be food secure - that is, to purchase for their members an adequate supply of nutritional and safe foods.

First, the paper shows that the five increases significantly altered the hourly wage distribution of householders (principal person in a household). The shifts were greatest among household heads that are minority, single parents, and household heads with no more than a high school diploma.

Even after controlling for the links between the 1990s economic expansion and food security, and food stamp usage and food security, the October 1996 and September 1997 increases in the federal minimum wage raised food security, particularly in low-income households where householders had completed no more than a high school degree or were a single parent. For the three increases that occurred from 2007 to 2009, the increases in the federal minimum wage only raised food security for single parent households.

Because of the extreme nature of the macroeconomy during the increases, the economic boom during the 1990s, and the "Great Recession" during the 2000 period, my preferred estimate of the increase's affect comes from a model that pools the two periods. I find that a state with 1 percent higher increase in the share of "affected" workers will have a 0.13 percentage point increase in their food security.

The paper concludes with simulations. The first shows the impact of increasing the federal minimum wage to \$10.10 per hour. It would provide food security to approximately 29 million hourly wage workers, or 11 million households. The increases would have the greatest impact on Southern households. Southern states make up 10 of the top 15 beneficiaries.

## **I. Introduction**

The Fair Labor Standards Act (FLSA) of 1938 established minimum wage, overtime pay, recordkeeping, and child labor standards. The Act applied to private and public sector full-time and part-time workers. One key feature of the Act which at the time covered only one-fifth of the workforce was to set a federal minimum wage of 25 cents. Unlike many European countries where increases in the minimum wage are based on annual increases in a measure of the cost of living, increases in the U.S. federal minimum wage remain a part of the political process. Increases occur when enough economic, social, cultural, morale, ethical, and ultimately political pressure is created such that public opinion supports an increase.

A variety of arguments are made against increases. The inflation-adjusted value is economically too low, keeping individuals and families in poverty. Two additional arguments against increasing the minimum wage have been that theoretically, increases are a job killer and empirically when there are benefits, the primary beneficiaries are teenagers. Prior to the late 1980s, the economics literature on the minimum wage focused on employment losses resulting from increases in the minimum wage, especially for the lowest-skilled workers.<sup>1</sup> Most studies before 1982 predicted that increases in the minimum wage would lead to large increases in unemployment. The evidence, however, typically found small rises in unemployment.<sup>2</sup> Studies after 1982 continued to find only modest job losses. These small job loss estimates led to a shift in research focus toward the distribution of benefits from minimum wage increases across the population and their effect on the overall wage distribution.

What is known about the direct effects of increasing the minimum wage on household welfare? Numerous studies have examined the relationship between increases in the minimum wage and poverty.<sup>3</sup> However, to my knowledge few studies have estimated the impact of

increases in the federal minimum wage on direct measures of economic well-being, such as food security.

The U.S. Department of Agriculture defines food security as the extent to which a household has enough financial resources to provide its members with adequate supplies of nutritional and safe foods, without resorting to emergency food. Hunger or very low food insecurity, is a physiological condition where household members experience an uneasy or painful sensation caused by the involuntary lack of food.

To date, most studies on U.S. food security have been descriptive in nature, finding that households whose members are low-wage workers, minorities, immigrants, or female heads tend to be more food insecure than middle-income U.S. households (Andrews, et al. 2000). A natural policy question arises: how do we improve the food security of American households? One way to raise household food security is through increases in federal and state minimum wages. However, it remains an open question as to how much an increase in the minimum wage translates into actual improvements in household food security.

In this study, I estimate the impact that the 1996/1997 and 2007/2008/2009 increases in the federal minimum wage have on household food security. I use micro data from the 1995 to 1999 and 2005 to 2011 Food Security Supplements of the Current Population Survey (CPS). The CPS is a monthly survey conducted by the U.S. Bureau of the Census as part of a joint effort with the U.S. Bureau of Labor Statistics to measure employment and unemployment in the United States. Once a year, a supplement to the monthly survey collects data on household food security.

I estimate the relationship between a state's change (before and after the increase) in food security at a particular income level and the state's percentage of "affected" workers. The latter

were prior to the increase earning an hourly wage in the “sweep”, which corresponds to the share of workers that are earning between the old and new federal minimum wages.

The findings are summarized as follows.

#### **Shifts in the Hourly Wage Distribution:**

- The five increases in the minimum wage significantly altered the hourly wage distributions of householders (principal person in a household).
- The shifts were greatest among household heads that are nonwhite, household heads with no more than a high school diploma, and single parents.
- The shifts in the hourly wage distributions were larger during the increases that occurred during the 1990s.

#### **Probit and Ordered Probit Food Security Models:**

- I estimate the impact that the hourly wage has on food security for 1995 to 1999 and 2005 to 2011. Even after controlling for a host of personal and household characteristics, a positive food security-wage gradient exists; however, the ability of higher wages to increase household food security diminished over time.
- Specifically, during the 1990s, a one-dollar increase in the hourly wage is associated with a 0.8 percentage point increase in the proportion of households classified as food secure, while during the 2000's, a one-dollar increase in the hourly wage is only associated with a 0.5 percentage point increase in food security.
- In addition, the food security-wage gradients among nonwhite householders, householders that have no more than a high school diploma, and single parent householders are larger than white householders, educated householders and dual householders.

- The ordered probit models indicate that the increase in food security associated with an increase in the hourly wage is mostly due to householders that move from insecurity without hunger or low insecurity to food secure.

### **Impacts of the Increases in the Federal Minimum Wage:**

- Even after controlling for the links between the 1990s economic expansion and food security, and food stamp usage and food security, the October 1996 and September 1997 increases in the federal minimum wage raised food security, particularly in low-income households where householders had completed no more than a high school degree or were a single parent. The source of the increases is larger due to households moving from low food insecurity to food secure.
- For the three increases in the federal minimum wage that occurred from 2007 to 2009, the increases only raised food security for single parent households.
- Because of the extreme nature of the macroeconomy during the 1990s and 2000s increases, the economic boom during the 1990s, and the “Great Recession” during the 2000 period, my preferred estimate of the increase’s affect comes from a model that pools the two periods.
  - I find that a state with 1 percent higher increase in the share of “affected” workers will have a 0.13 percentage point increase in their food security.
  - The increase is larger among householders who have no more than a high school degree, are single parents.

### **Policy Simulations:**

- Increasing the federal minimum wage to \$10.10 per hour would provide food security to approximately 29 million hourly wage workers, or 11 million households.

- The increases would have the greatest impact on Southern households. Southern states make up 10 of the top 15 beneficiaries.

## **II. Literature Review**

### **A. Food Security**

Numerous studies over the last decade have sought to develop and validate a methodological basis for measuring food security. From these studies, questionnaire-based surveys have emerged as the prevailing method for assigning food security status to households.<sup>4</sup> Concerns have sometimes arisen as to the seemingly simplistic and adhoc approach of questionnaire or survey-based formats for sorting households into food security categories. For example, depending on the nature of the survey questions, it is quite plausible that a household well above the poverty line could still report food insecurity.

Extensive efforts have been made to assess the validity of the questionnaire-based approach.<sup>5</sup> One validation method is to assess the extent to which households that are predetermined to be food secure by alternative criteria are actually classified as secure by the survey in question. Another method is to use factor analysis to determine whether different theoretical components of food security exist in the actual response patterns to the survey questions. A third form of validation is to evaluate the consistency of response patterns across different demographic groups.

These validation procedures typically find a strong correlation between food security status, as classified by the survey, and food assistance program participation, actual nutrient intake, and weekly household food expenditures. Hamilton et al (1997) use the 1995 Current Population Survey supplement to show that the raw summation of affirmative responses of food insecurity is highly indicative of the severity of the behaviors experienced by the household.<sup>6</sup>



Borjas (2001) finds additional support for the validity of the questionnaire used in the CPS Food Security Supplement. He pools observations from the 1995 to 1999 files and shows that the usual weekly food expenditures of households classified as food insecure are approximately 20 percent lower than the food expenditures of households classified as food secure. Hence the validity of the questionnaire can be easily cross-checked by looking at weekly food expenditures of the household in question.

Moreover, Borjas finds that the correlation between food expenditure and food security status persists even after controlling for state-time fixed effects, country of origin, and other socioeconomic variables. Beyond research on evaluating the validity of the survey method, Borjas found that households classified as food insecure tended to be lower-income adult households that were predominately African American, Latino, single parent, or female-headed.

Researchers have also identified various socioeconomic characteristics that are correlated with food security. Bickel et al (1999), Nord et al (1999a), and Andrews et al (2000) use the CPS Food Security Supplement to calculate the prevalence of food security in the United States as well as in states and for socio-demographic groups. African American households, Hispanic households, single-parent households, and households in poverty have lower food security rates than the general population.

Bhattacharya, Currie and Haider (2004) takes a different approach to assess the validity of questionnaire-based measures of food security. They use the standard poverty measure as a benchmark for evaluating the quality of the food insecurity questions in the National Health and Nutrition Examination Survey III (NHANES III). They argue that the validity test should not be how the survey questions correlate with other factors such as education or household structure, but rather whether the new food security measure better predicts nutritional outcomes than the

traditional measure of poverty. They find that the food insecurity questions are correlated with the dietary outcomes of older household members, but "not consistently related to the diets of children."

Several studies have performed multivariate regression analysis of the sociodemographic determinants of food security. Rose et al (1998) estimate logit models and find that household income, household size, educational attainment, age, race, and home ownership are strongly correlated with the probability of food insufficiency. Their analysis uses data from the 1989 to 1991 Continuing Survey of Food Intake by Individuals (CSFII) and the 1992 Survey of Income and Program Participation (SIPP).

Others focus on describing the adverse physical and psychosocial consequences stemming from the absence of food security. Olson (1999) studies 204 Baltimore and Philadelphia school-age children and finds that a strong association exists between food insecurity, as measured by the Community Childhood Hunger Identification Project (CCHIP) survey, and the prevalence of psychosocial disorders in children, as documented by the Pediatric Symptom Checklist (PSC). The relationship remains after controlling for estimated family income and maternal educational attainment.

Several studies have worked to strengthen how child food security is measured. For example, Nord and Hopwood (2007) examine the extent to which children's food security is correlated with that of adults. They find that the relationship is a function of the children's ages. The implication of their finding is that individual measures of children's and adults' food security provide more accurate assessment than a single household measure that tries to capture both. They recommend that more research is needed to estimate the relationship between food security

and children's diet quality/variety and the effects of children's food security on their health and development.

Cook and Frank (2008) link household and children's food insecurity to children's health and development and mothers' depressive symptoms. Specifically, in their review of 23 studies, they conclude that food insecurity is a prevalent risk to the growth, health, cognitive, and behavioral potential of low-income children. The U.S. possesses the food and distribution resources to reduce these risks for low-income children. A lack of political will constrains public policy.

It still seems that few food security studies have attempted to link food security to economic and social policy. One example is Bernell et al. (2006), who finds that for Oregon along with personal and demographic characteristics, residential location and housing costs are highly correlated with food security.

## **B. Increases in the Federal Minimum Wage**

During the 1990s, research on the minimum wage shifted away from estimating effects on employment (modest to none) to describing the beneficiaries of minimum wage hikes and the alteration of the wage distribution resulting from increases in the minimum wage.<sup>7</sup> Much of that research has found that the chief beneficiaries of a minimum wage hike are adults, and not teenage workers from middle-class families. Card and Krueger (1995) find that more than 70 percent of workers affected by the 1990 increase were adults, who were predominately women and minorities; moreover, 30 percent of the beneficiaries were the only earner in their family. On average, minimum wage workers account for one-half of their family's total earnings. Compared to other workers, individuals whose wages are affected by an increase are three times more likely to live in poverty.

For example, during the debate to increase the federal minimum wage from \$5.15 to \$6.65 per hour, Bernstein and Chapman (2002) demonstrated that a link exists between increased quality of life and increases in the minimum wage for low-income households. They find that between 1938 and 1981, the federal government routinely increased the minimum wage to keep pace with cost of living increases. Between 1981 and 1997, the federal government increased the minimum wage three times, with none of the increases matching the cost of living or ordinary wage increases. Given those policy decisions, the minimum wage is now valued at 19 percent less than it was in 1981. The Bernstein and Chapman study also shows that workers and families who would be most significantly impacted by a minimum wage increase are low-wage households, primarily those that are African-American, Latino, female, or single-parent.

Specifically, if the minimum wage were raised from \$5.15 to \$6.65 per hour, almost 68 percent of the beneficiaries would be adults and most of those (61 percent) of those adults would be women. African-Americans and Hispanics would make up 33 percent of the beneficiaries, far larger than their representation in the total workforce.<sup>8</sup> For households headed by workers between the ages of 25 and 54, 59 percent of the gains from the proposed increase would go to the bottom 40 percent of the income distribution, and over three-fourths of the gains would go to the bottom 60 percent of these prime-age earner-headed households. Excluded are households with no earnings and households headed by older or younger persons (who tend to be less connected to the workforce).

There are now proposals to increase the federal minimum wage to \$10.10 per hour by July 2015. Most recently, Cooper and Hall (2013) estimate the impacts and conclude that about 30 million workers would receive over \$51 billion in additional wages over the period of implementation. GDP would increase by approximately \$32.6 billion, generating approximately

140,000 net new jobs. The beneficiaries are disproportionately women and adults. They also show that the increases would assist families. For example, around 55 percent of affected workers work full time, 70 percent are in families with incomes of less than \$60,000, more than a quarter parents, over a one-third are married. Finally, the average affected worker earns about half of his or her family's total income.

In earlier work that provides the econometric foundations for this paper, Card and Krueger (1995) illustrate the impact that the 1990 and 1991 increases in the minimum wage from \$3.35 to \$4.25 per hour had on the wage distribution. To do this, they follow the 5<sup>th</sup> and 10<sup>th</sup> percentiles of wages between the first quarter of 1989 and the last quarter of 1991 in three groups of U.S. states: (1) 13 low-wage states (where the increase in the minimum wage had a high impact); (2) 22 medium-wage states; and (3) 16 high-wage states (where it had a low impact). The categories are based on the share of a state's working teenagers that earned between \$3.35 and \$4.25 per hour prior to the increase. They find that both the 5<sup>th</sup> and 10<sup>th</sup> percentiles of wages in the low-impact states drifted upward during the three-year sample period, but prior to the increases in the federal minimum wage. This timing suggests that the structure of wages in the low-impact states was largely unaffected by the federal minimum wage hikes, implying that wages in the low-impact states provide a valid counterfactual for the wage growth in the medium and high impact states.

Card and Krueger find that the 1990 and 1991 federal minimum wage hikes increased the 5<sup>th</sup> percentile of wages in the lowest-wage (i.e., high-impact) states by 60 cents and raised the 10<sup>th</sup> percentile of wages in these states by 25 cents. To control for remaining factors that might be correlated with both wage growth and the share of workers affected by a minimum wage increase, Card and Krueger estimate state-level regressions which control for a variety of factors,

finding again a strong positive correlation between changes in the 5<sup>th</sup> and 10<sup>th</sup> percentiles of wages and the fraction of workers who prior to the increase were earning between \$3.35 and \$4.24. Wage inequality, as measured by the difference between the 10<sup>th</sup> and 90<sup>th</sup> percentile wages, narrowed in states with a high fraction of workers who were affected by the minimum wage increases.

Finally, Card and Krueger show that the 10<sup>th</sup> percentile of family earnings increased as the percentage of workers affected by the minimum wage in the state increased and that poverty rates fell faster in high-impact states. Because of the estimate's lack of precision, they caution the reader that it is difficult to attribute the decline in poverty solely to the minimum wage. But they are confident that there is no evidence to suggest that poverty increased as a result of the 1990 and 1991 minimum wage hikes.

However, more recently a variety of studies challenge this conclusion (Sabia and Nielson (2012), Burkhauser and Sabia (2007), Neumark and Wascher (2002), Leigh (2007), Neumark et al (2005), Page et al (2005), and Burkhauser and Sabia (2010)). In particular, Sabia and Nielson (2012) not only estimate the impact of increases in the minimum on poverty, they estimate the impacts on financial security, housing security, health and food security. Using the Survey of Income Program Participation (SIPP) from 1996 to 2007, they create a state-year panel that enables them to estimate difference in difference estimates of the impact that state minimum wages have on these four broad areas. They find no evidence that the increases which were primarily state driven improved security in any of these dimensions. They rationalize their results by showing that over half their sample does not work or report a rent or a mortgage payment do not work.

I have several concerns with their analysis. First, they only measure poverty and food security at the state level. Doing so could wash out the impacts at lower portions of the income distribution. Because of this concern, I build state-year aggregates but also create three income categories: low, moderate and high. The SIPP's food security questions are a subset of the 18 questions that I use in the CPS Food Security Supplement.

Aaronson et al (2012) provide support that increases in the minimum wage impact spending and thus could improve concrete measures of security. They show that right after an increase in the minimum wage, household income rises on average by about \$250 per quarter and spending by roughly \$700 per quarter for households with minimum wage workers. However, they also show that most of the spending response is generated by a small number of households who purchase vehicles.

These conflicting results make the following questions germane: (1) How do the wage distribution changes translate into improved food security status? (2) Does food security increase, and is the increase largest in low-income households, including minority households, households in which the head has no more than a high school diploma, and single-parent households?

### **III. Theoretical Framework**

Our model of food security is based the theory of household production as developed in Gorman (1956), Lancaster (1966a, b) and Becker (1965). Rose et al (1998) is the most recent study on food security to utilize this model.<sup>9</sup> The approach relies on the assumption that households obtain utility from underlying goods that cannot be purchased in markets. Instead, households produce utility by using goods from market purchases and leisure time.<sup>10</sup>

In our setting, households combine store-bought foods and time spent shopping and preparing meals with the use of durable goods (e.g., refrigerators and microwaves) and human

capital (e.g., nutrition knowledge and preparation skills) to create meals. Households receive utility from their preferences or tastes for different types of foods and from the health effects of the nutrients consumed. More formally, households choose taste components,  $A$ , and nutrients,  $N$ , found in meals to maximize

$$1) \quad U = U(A, N, X, l), \quad \text{subject to}$$

$$2) \quad N = n(F, L_F, K, D), \quad \text{and}$$

$$3) \quad P_F F + P X = V + w(T - L_F - l).$$

The term  $X$  denotes other goods and  $l$  denotes leisure. Equation (2) represents the household's home production function, where  $F$  denotes store-bought foods,  $L_F$  is the labor time spent shopping for food and preparing meals,  $K$  denotes capital goods, including human capital, and  $D$  denotes the demographic characteristics of the household.<sup>11</sup>

Equation (3) is the household's constraint on income and time, where  $P_F$  denotes the price of food,  $P$  denotes prices of other goods,  $w$  denotes the wage rate,  $V$  denotes non-labor income, and  $T$  denotes the total time available to the household members.<sup>12</sup>

For this optimization problem, the households' reduced-form nutrient demand equations take the following form:

$$4) \quad N = n^*(P_F, P, V, w, K, D).$$

The demand for nutrients depends on the price of food, prices of other goods, non-labor income (e.g., food stamps), wages, capital goods, and demographic characteristics.

A household is categorized as food secure if the level of nutrients consumed exceeds some minimum level of nutrients. Let  $I_h$  denote a food security indicator variable for the  $h$ th household that takes on the following values:



$$5) \quad \begin{aligned} I_h &= 1, \text{ if } N_h > N_{h,\min} \\ I_h &= 0, \text{ otherwise,} \end{aligned}$$

where a household is food secure if the level of nutrients exceeds some threshold, which could either be a societal threshold (e.g., living wage) or a subjective threshold set by the individual household.<sup>13</sup>

#### IV. Econometric Models

##### 1. Probit and Ordered Models

Since we only observe the outcome of whether the household nutritional level exceeds a particular threshold, and not the actual nutritional level, we model food security for the  $h$ th household as an unobserved latent variable,  $y^*$ , such that

$$6) \quad y_h^* = X_h \beta + \varepsilon_h.$$

The vector  $X_h$  contains household-specific information such as the age, gender, race, educational attainment, industry, and occupation of the reference person in the household. The vector also contains household-level information on the number of individuals in the household, urban residency, and food stamp usage and amount. We assume that  $\varepsilon$  has a standard normal distribution with mean zero and variance one. To operationalize (7), we write

$$7) \quad \begin{aligned} y_h &= 1, \text{ if } N_h^* > N_{\min}, \\ y_h &= 0, \text{ if } N_h^* \leq N_{\min}, \end{aligned}$$

where  $y_h$  denotes a dummy variable that equals 1 if the nutrition level of the  $h$ th household exceeds some minimum threshold and 0 if not. Given our assumption that the residual is distributed with mean zero and variance of 1, we estimate a probit model.

It is well known that the estimated coefficients for probit models can only be utilized to determine the direction of a variable's impact on the probability of food security. To estimate the impact that a change in a variable has on the probability of food security, we use the estimated

coefficients from our probit equation and each household's vector of characteristics to construct an index  $(X_h \hat{\beta})$  for the each household. We then calculate each household's partial derivative, the change in the probability of food security with respect to a change in the  $k$ th variable, and compute the average of the partial derivatives over the  $H$  households. The resulting marginal effect of the  $k$ th explanatory variable on the probability of food security is

$$8) \quad \overline{\frac{\partial P[y = 1]}{\partial X_k}} = \frac{1}{H} \sum_{h=1}^H \left( \frac{\partial P[y = 1]}{\partial X_k} \right)_h = \frac{1}{H} \sum_{h=1}^H \phi(X \hat{\beta}_h) \hat{\beta}_k$$

where  $\phi(\cdot)$  is the density function of the standard normal distribution.

Food security is one of three potential thresholds that a household can achieve. In the 1995 to 1999 surveys, families are classified in one of three areas: hunger, low food insecurity, or food secure. In the 2005 to 2011 surveys, families are classified as either very low food security, low food security and food security. The change in labels resulted from a National Academy of Sciences study panel's recommendations. To model the dynamics of how an increase in the minimum wage works, I estimate ordered probit models. I write the model as follows:

$$9) \quad \begin{aligned} y_h &= 2, \text{ if } N_h^* > N_2, \\ y_h &= 1, \text{ if } N_2 > N_h^* > N_1, \\ y_h &= 0, \text{ if } N_h^* \leq N_{\min}, \end{aligned}$$

where  $y_h$  denotes a discrete variable that equals 2 if the nutrition level of the  $h$ th household exceeds the threshold  $N_2$ , which indicates food secure. The variable equals 1, denoting low insecurity if the nutrition level exceeds the threshold  $N_1$  but is less than the threshold  $N_2$ , and the variable equals 0 if the nutrition level does not exceed the threshold  $N_{\min}$ , denoting hunger or very low food insecurity. Given our assumption that the residual is distributed with mean zero and variance of 1, we estimate an ordered probit model.

Similar to the probit model, the estimated coefficients for the ordered probit models can only be utilized to determine the direction of a variable's impact on the probability of food security. To estimate the impact that a change in a variable has on the probability of food security, low insecurity and hunger/very low insecurity, I use the estimated coefficients from our probit equation and each household's vector of characteristics to construct an index ( $X_h \hat{\beta}$ ) for the each household. We then calculate each household's partial derivative, the change in the probability of food security with respect to a change in the  $k$ th variable, and compute the average of the partial derivatives over the  $H$  households. The resulting marginal effect of the  $k$ th explanatory variable on the probability of food security is

$$10) \quad \overline{\frac{\partial P[y = 1]}{\partial X_k}} = \frac{1}{H} \sum_{h=1}^H \left( \frac{\partial P[y = 1]}{\partial X_k} \right)_h = \frac{1}{H} \sum_{h=1}^H \phi(X_h \hat{\beta}_h) \hat{\beta}_k$$

### 3. Estimating the Impact of the Federal Minimum Wage Increases

Using the state-level approach in Card and Krueger (1995), I estimate a variety of specifications to identify the impact of the October 1<sup>st</sup>, 1996 and September 1<sup>st</sup>, 1997 increases in the federal minimum wage. We regress the change in a state's food security at a given income level (e.g., low, medium and high) – that is, the change in the percentage of households classified as food secure within the state – on its share of working householders earning between the old and new minimum wage (e.g., \$4.25 and 5.14 per hour). To control for changing macroeconomic conditions and food stamp usage, we include the change in the state's employment-population ratio.

Formally, the model is written as

$$11) \quad \Delta FS_{ij} = \alpha_0 + \alpha_1 \% \text{Affected}_{ij} + \alpha_2 \Delta EPOP_{ij} + \alpha_3 \Delta FDSTMP_{ij} + \varepsilon_{ij},$$

where  $\Delta FS_{ij}$  denotes the change in the  $i$ th state's food security at the  $j$ th income category from period  $t$ , a period before the increase in the minimum wage and  $t+1$ , a period after the increase in the minimum wage,  $\% \text{Affected}_{ij}$  denotes the  $i$ th state's share of working householders earning between the old and new minimum wage in the  $j$ th income category prior to the minimum wage increase,  $\Delta EPOP_{ij}$  denotes the  $i$ th state's change in employment-population ratio of householders in the  $j$ th income category from period  $t$  to  $t+1$ ,  $\Delta FDSTMP_{ij}$  denotes the  $i$ th state's change in food stamp usage of householders in the  $j$ th income category from period  $t$  to  $t+1$ , and  $\varepsilon_{ij}$  denotes an error term. All specifications are estimated using weighted least squares, where the state's resident population is used as the weight.

## V. Data

The Current Population Survey (CPS) is a monthly survey of about 50,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics. The CPS is the primary source of information on the labor force characteristics of the U.S. population. Respondents are interviewed to obtain information about the employment status, earnings, and hours of work for each member of the household aged 15 years and older.

Our research utilizes the annual Food Security supplement to the CPS that was first collected in April 1995 by the U.S. Census Bureau and sponsored by the U.S. Department of Agriculture. Subsequent supplements have been administered in September 1996, April 1997, August 1998, and April 1999. For the 2005 to 2011 supplements, the survey was administered in December.

The food security classification scheme is based on a standard conceptual framework developed by the Life Sciences Research Office (LSRO) of the Federation of American Societies for Experimental Biology. Underlying the LSRO framework is the following descriptive terminology:

**Food security** – “Access...to enough food for an active, healthy life. Food security includes at a minimum: (1) the ready availability of nutritionally adequate and safe foods, and (2) an assured ability to acquire acceptable foods in socially acceptable ways (e.g., without resorting to emergency food supplies, scavenging, stealing, or other coping strategies).”

**Food insecurity** – “Limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods in socially acceptable ways.”

**Hunger** – “The uneasy or painful sensation caused by a lack of food. The recurrent and involuntary lack of access to food. Hunger may produce malnutrition over time...Hunger is a potential, although not necessary, consequence of food insecurity.” (LSRO 1990).

Food insecurity and hunger can be thought of as a continuum in which hunger is manifested as the level of food insecurity worsens. The determination is based on behaviors that include “the experience of running out of food, without the money to buy more,” “perceptions...that the food eaten by household members was inadequate in quality or quantity,” “adjustments to normal food use, substituting fewer and cheaper foods than usual,” and “instances of reduced food intake” (Bickel et al 2000).

The food security supplement classifies each household into a food security category by its pattern of responses to 18 questions. See Appendix 1 for a list of the questions. Each question asks the household to affirm or deny whether it has experienced a particular behavior in the last twelve months; each affirmation thus provides additional evidence of food insecurity or hunger in the household. The respondent’s period of reference for reporting behaviors is, in every question, the twelve months immediately prior to the administration of the survey. Moreover, all questions explicitly ask the household to report only those behaviors that result from financial

resource constraints. Since some questions refer to children, households without children are asked only 10 of the 18 questions.

Given the presence or absence of children, the household is classified as “food secure,” “food insecure without hunger,” or “food insecure with hunger” based on the number of affirmative responses given by a designated household member’s answers to the eighteen or subset of eighteen questions. For example, households with children are designated as “food secure” if they give fewer than three affirmative responses, as “food insecure without hunger” if they give between three and seven affirmative responses (inclusive), and as “food insecure with hunger” if they give eight or more such responses (Bickel et al 2000).

Recall that in the estimation of equation (10), which assesses the impact that increases in the minimum wage have on food security, we desire data from reference periods completely *before* and completely *after* the pair of minimum wage increases. Thus, we exclude the 1997 data from our analysis; our results would be biased if we included it. The supplement was administered in April 1997, but the minimum wage was increased on October 1<sup>st</sup>, 1996. Since respondents are asked to report their experiences from the previous 12 months, the effective date of the wage hike falls in the middle of the reference period for the 1997 interview. Note that even though the September 1<sup>st</sup>, 1997 increase in the minimum wage occurs one month after the beginning of the reference period for the August 1998 survey, we do not exclude the 1998 data from our analysis and regard this data as falling in the post-increase period.

For the 2005 to 2011 analysis, we exclude the three years during which an increase in the minimum wage occurred: 2007, 2008, and 2009. Since the survey was administered in December and I use the 12-month incidence question, there are no overlap issues between the survey interval and the increases.

To measure food security across years, we use the variable HSCAL12D in 1995 and HRFS12C1 in 1996 to 1999. The latter has been adjusted to account for changes in the screening process used to determine whether an individual is asked the food security supplement that occurred in the 1996 to 1999 surveys. For the 2005 to 2011 surveys, I use the HRFS12M1 variable in all years. To my knowledge the screening process was not changed over this period.

The major sample restrictions are that each household must have complete information on the age, sex, race, ethnicity, and educational attainment of the reference householder, as well as information on household structure, number of household members, industry, occupation, and residency in metropolitan statistical areas. When I focus on estimating the food security-hourly wage relationship, our samples are further reduced, because hourly wages are only collected for the outgoing groups (4 and 8), which represent 20 percent of the CPS sample. Further, in 1998 and 1999, a food security test question was used in rotation group 8, leading to households with multiple children or adults being excluded during the computation of food security status. The Bureau of Census and Bureau of Labor Statistics adjust the sample weights of the remaining rotation groups to account for the reduction in sample. We also exclude households in which the reference person's (head of household) hourly wages are below \$1.00 per hour.

I now present summary statistics. Table 1 reports nominal hourly wage distributions by demographic group. Panel A reports the distributions for 1995 to 1999 and Panel B reports the distributions for 2005 to 2011. The point is to show the wage distribution's shift from before and after the increases in the minimum wage. Because of that and the recommendation from the USDA that individual years should be pooled to capture broader trends, 1995 and 1996 are pooled. The 1998 and 1999 cross sections are pooled. The 2005 and 2006 cross sections are pooled, and the 2010 and 2011 cross sections are pooled.

For each demographic group in Panel A, the share of householders with earnings below \$5.14 per hour falls after 1996. In the pooled 1995/1996 cross section, 8.5 percent of reference persons earned less than \$5.15 per hour, with 7.2 percent earning between \$4.25, the old minimum wage and \$5.15, the new minimum wage. This figure falls to 1.8 percent in the 1998/99 cross section. In the pooled 2005/06 cross section, 6.3 percent of householders earned between \$4.75 and \$7.25. The share fell to 1.3 percent in the 2010/11 cross section. The sub-panels for African Americans, Latinos, single parents, and reference persons with no more than a high school diploma, show even larger shifts in their wage distributions.

What were the macroeconomic conditions during the five increases? This is an important question. If not adequately controlled for, the extreme nature of economic growth during each period could in the case of the 1990s boom; lead to an overstatement of the increases in the minimum wage's impact, and in the case of the "Great Recession" could understate the impact of the minimum wage increases. Table 2 reports the U.S. unemployment rate, employment-population ratio, total nonfarm payroll growth, and real Gross Domestic Product growth. During the 1990s increases, the nation's unemployment rate fell from 5.5 to 4.4 percent, both well below estimates of the Non-accelerating Inflation Rate of Unemployment (NAIRU), while during the period when the three increases occurred from 2005/6 to 2010/11, the unemployment rate almost doubled to 9.3 percent. The employment-population ratio, which unlike the jobless rate captures labor force entry and departures, also demonstrates major swings, increasing by 1.2 percentage points in the 1990s, but falling by 4.5 percentage points in the 2000s. Total nonfarm employment and real GDP expand by 7.6 and 13.9 percent, respectively. Total nonfarm employment contracts during the 1990s increases, and real GDP growth exhibits a modest expansion in the 2000s.



Panel B shows that as expected, during the 1990s increases, the odds of becoming food secure increased, as both the economy improved and the increases in the minimum wage were implemented. Conversely, during the “Great Recession”, food security fell from 2005/06 to 2010/2011. The table suggests that the weak recovery between 1998/99 and 2005/06 may have also caused food security to begin to trend down before the increase in the minimum wage. For example, food security of single parents falls below 70 percent after the “Great Recession, but it fell from 77.4 to 76.8 percent from 1998/99 to 2005/06.

For the 1990s, the aggregate trends point to a modest increase in food security that might be due to the increase in the minimum wage; however, it is quite reasonable to think that the economic boom of the 1990s explains a portion of the food security increase.<sup>14</sup> For the 2000s, the challenge will be to control for the correlation between the “Great Recession” and its impact on food security, and its correlation with states that had large shares of householders that were beneficiaries of the increases.

## **VI. Basic Results**

Table 3 displays results from probit models that estimate the determinants of food security for 1995 to 1999 and 2005 to 2011. The entries show the estimated changes in the probability of food security with respect to a change in a particular explanatory variable.<sup>15</sup> In these specifications, food security and hourly wages are modeled as a linear relation. The superscripts denote the level of statistical significance. In both periods, even after controlling for a host of personal and household characteristics, a positive food security-wage gradient exists; however, the ability of higher wages to increase household food security has diminished over time. During the 1990s, a one-dollar increase in the hourly wage is associated with a 0.8 percentage point increase in the proportion of households classified as food secure, while during

the 2000's, a one-dollar increase in the hourly wage is only associated with a 0.5 percentage point increase in food security.

In addition, Table 3 presents the food security-wage gradients among nonwhite householders, householders that have no more than a high school diploma, and single parent householders.<sup>16</sup> A one-dollar increase in the reference person's hourly wage has a larger impact if the reference person is Nonwhite, single parent, or has no more than a high school diploma. The larger impacts are due to the fact that these groups have lower initial wages and that food security exhibits diminishing returns as a function of wages. Although these relative relationships persist into the period from 2005 to 2011, the impact within each sub-group of a wage increase on food security has weakened.

Food stamp usage is associated with bigger reductions in food security in the 2005 to 2011 period, than during the 1995 to 1999 period. During the period that encompasses the "Great Recession", usage is associated with having approximately a third lower food security than a household that does not utilize food stamps. During the economic boom of the 1990s, food stamp usage is only associated with a 0.11 to 0.15 lower odds of food security. A household's food stamp amount does not explain food security during the 1990s, but does during the 2000s. Higher amounts are positively correlated with food security.

The estimates associated with the dummy variables for race and ethnicity indicate that Black and Latino householders have lower food securities than White householders. In fact, the gap widened during the 2005 to 2011 period, with a larger expansion in the Latino-White gap. An education gradient exists, with high school dropouts and graduates having the lowest food security and college graduates having the highest food security. For the most part, the disadvantage of less-educated householders did not worsen during the 2005 to 2011 period.

Single parent households and households comprised of an individual male or female all have lower levels of food security than dual-headed householders. These relative differences remained fairly constant across the two periods.

The estimates associated with the gender dummy variable reveal that except for single parent households, women householders do not experience a food security disadvantage. Table 3 also suggests that after controlling for household and personal characteristics, an urban-suburban food security difference does not exist.<sup>17</sup> This runs counter to conclusions in Berube and Kneebone (2013). They find that most poverty is now concentrated in suburban areas as opposed to central cities. This finding needs more study. Table 3 reveals that public sector householders have food security rates that are 2.5 to 5.3 percentage points higher than private sector householders.

Table 4 reports ordered probit results. For the 1990s, the table shows the estimated impact of personal and household characteristics on three food security thresholds: food security, food insecurity without hunger, and food insecurity with hunger. For the 2000s, the table presents the estimated impact of personal and household characteristics on three thresholds: food security, low security, and very low security. The benefit of the ordered probit models is that they demonstrate how the food security distribution changes when a particular variable such as hourly earnings changes. That is, if hourly earnings increase, food security will increase because smaller portions of the sample are food insecure without hunger and food insecure with hunger.

The estimates show that in most cases, the increase in food security is due to a decline in the fraction of householders that are insecure without hunger from 1995 to 1999 and low security from 2005 to 2011. The dampening in the ability of an increase in hourly earnings to improve food security from the 1990's to the 2000's is uniform across the distribution. Insecure

households without hunger become food secure and households in a hunger state move to insecurity without hunger. Although the thresholds (e.g., hunger is now very low security) change in the 2000s, similar shifts occur. This pattern occurs for food stamp usage and amount, gender, race, ethnicity, age, educational attainment, household structure, urban residence and public versus private sector employment.

In sum, the wage estimates in Tables 3 and 4 reveal that demographic groups with the greatest disadvantages are the ones most likely to be beneficiaries of increases in the minimum wage. The results also indicate that much of the improvement in food security is due to shifts from insecurity without hunger (low security) to food security. Further, the comparisons of the 1995 to 1999 period to the 2005 to 2011 period indicate that the ability of an increase in the hourly wage to increase food security has dissipated, suggesting that in order to have a significant impact on household food security, any new increases may need to be larger than those implemented during the 2005 to 2011 period.

I turn now to directly estimate the effects of the 1996-97 and 2007-2009 increases in the federal minimum wage on food security. Utilizing state-level variation in food security and the variation across the CPS Food Security Supplement's 14 household income categories to build aggregate food security statistics is not feasible. Many state-income combinations have too few observations to generate reliable estimates. To solve this problem, I still allow food security to vary by state but I create three broad income categories: 1) less than \$12,500, 2) \$12,500 to \$34,999, and 3) \$35,000 or more. For each state and household income category, I construct the change in food security by first pooling the 1995 and 1996 (2005 and 2006) cross sections and the 1998 and 1999 (2010 and 2011), cross sections.<sup>18</sup> The former pairs are cross sections that are prior to the increases and the latter pairs are after the increases. I then compute the change in a

state's food security for each income level, generating a dependent variable with  $51 \times 3 = 153$  observations.

Our independent variable, an aggregate measure of the percent of household heads affected by the 1996-97 and the 2007-2009 increases in the minimum wage, also varies across states and the three household income distribution categories. To control for changes in the state's macroeconomy, I add a second variable, the change in the state's employment-population ratio of household heads in each income category. Allowing for variation in the employment-population ratio by income enables us to control for state-specific fixed effects.

Before presenting the estimates of the impact that increases in the minimum wage have on food security, I show that the increases improved earnings at the lower tail of the hourly wage distribution and did not have a negative impact on employment. Instead of the change in food security as the dependent variable, I use changes in the hourly earnings at a given percentile of the earnings distribution and changes in the employment-population ratio. The expectation is that increases in the minimum wage should have their greatest impacts at the lower percentiles. However, these effects will move up to higher percentiles for nonwhites, less educated and single parents. They have a larger portion of workers with lower earnings that could either be directly or indirectly impacted. The indirect impacts or "ripple" effects occur because although their wages exceed the new minimum wage, their employer ties their earnings to the nominal value of the minimum wage. Pay increases only occur when an increase in the minimum wage occurs.

Table 5 reports the three sets of estimates: pooling of the two periods, 1995 to 1999 only, and 2005 to 2011 only. Overall, the earnings estimates indicate that the increases had their greatest impact at the lower percentiles. In the 2005 to 2011 period, the estimates suggest that

spill over or ripple effects may have occurred. Employers also increased the wages of workers who earned slightly more than those who directly benefitted from the increase.

The estimates for nonwhites, less-educated householders and single parents indicate the presence of both direct and indirect impacts. The lowest percentiles have the largest increases, but the table shows that across demographic groups and periods, the hourly earnings distribution at the median and above shifted upward, especially for nonwhite and single parent householders.

Increases in the minimum wage did not have adverse impact on employment. Table 6 reveals that across time periods and samples, the increases, even after controlling for changes in the business cycle are associated with an improvement in the employment-population ratio. The coefficient on the percent affected ranges from 0.079 (pooled single parents) to 0.219 (1995-99 Nonwhite), which means that a 1 percentage point increase in the share affected is associated with a 0.08 to 0.22 percentage point increase in the employment-population ratio. All estimates, except single parents in the 2000s cross section, are measured with precision at the 5 or 1 percent level of significance.

Table 7 reports the relationship between the change in food security and the percent of household heads affected, controlling for a state's food stamp usage and employment-population ratio. A one-percent increase in the fraction affected raises the probability of reporting food security in the pooled and the 1995 to 1999 cross sections by 0.13 to 0.28 percentage points. The coefficient for the 2005 to 2011 cross section is positive but has fallen toward zero and is not measured with precision.

How can we interpret these estimates? Consider the coefficients on “% affected” in the pooled food security model for all householders (0.132). In a state such as California where 25.4

percent of households with income less than \$12,500 are affected by the minimum wage increase, the preceding coefficient gives rise to an increase in food security of 3.4 percentage points ( $0.254 \times 0.132$ ) between 1995/96 and 1998/99.<sup>19</sup> If we assume that California households with incomes between \$12,500 and \$34,999 are fairly similar to households with incomes less than \$12,500, the former can serve as a counterfactual. The predicted change in food security for households with income between \$12,500 and \$34,999 is what we could expect to observe in the absence of a minimum wage increase. The predicted change in food security among California households with incomes between \$12,500 and \$34,999 is 0.98 percent. The difference between the two predicted changes in food security, 2.42 ( $3.4 - 0.98$ ) represents among households with less than \$12,500 of income the net food security impact of the increase in the minimum wage.

The results for householders with no more than a high school degree and single parent householders indicate that the increases in the minimum wage have a significant impact on food security in the pooled and 1995-99 samples. Only the single parent householders experience an improvement in food security in both periods.

A key result here is that the impacts for the sub-groups tend to exceed the estimated impacts for the full sample, supporting the notion that increases in the minimum wage have larger impacts on lower-paid household heads that are disproportionately householders with no more than a high school degree, single parents and nonwhite householders. For example, in the pooled sample, a one-percentage point rise in the share of affected single parents increases the growth in food security by 0.287 percentage points. The 1995-99 estimated coefficient yields a 0.286 percentage point increase. The estimate gets larger during the 2000's, indicating a 0.366 percentage point increase as the percent affected grows by one-percentage point. The food security coefficients for householders with no more than a high school degree are 0.222 and

0.386 in the pooled sample and 1995 to 1999 sample. The 2005 to 2011 coefficient remains positive, but falls to 0.026.

The food security coefficients for nonwhite householders have the expected sign in the pooled and 1995 to 1999 samples but are only statistically significant in the 1995 to 199 period. This is due to the data limitations in creating more precise income-state-year aggregates of food security.

Similar in spirit to the ordered probits, I estimate the impact that the percent affected has on the two forms of insecurity (1995 to 1999) or low security (2005 to 2011). Consistent with the ordered probits, Table 7 shows that the improvement in food security is primarily due to a decline in low insecurity in the 1990s and decline in low security in the 2000s. The increases are large enough to have a sizeable impact on reducing the percentage of householders that experience low insecurity/low security.

## **VII. Controlling for the Business Cycle and State-Level Minimum Wage Laws**

The negative and small positive coefficients for the percent affected in the 2005 to 2011 cross sections (Table 7) could exist for two reasons. First, the proxy for macroeconomic fluctuations, the state-household income-year employment-population ratio is not capturing the dramatic impact that the “Great Recession” had on changes in food security. Second, during the increases in 2007, 2008, and 2009, many states increased their own minimum wages. In each year, 30, 33, and 27 states had minimum wages that exceeded the federal minimum wage. However, in 2010 and 2011, 15 and 17 states had minimum wages that exceeded the federal minimum wage. The post-increase number of states is roughly the same as in 1995/96, the two years prior to the federal increases. Thus, it is not likely that controlling for the number of states



with minimum wages that exceed the federal will cause the percent affected coefficient to have the predicted positive sign.

To test these explanations, I use BLS' state-level nonfarm payroll and the state-level official unemployment rate. The models include the change in the macroeconomic measure and its pre-increase level (1995/96 or 2005/05). To control for the number of states with minimum wages that exceed the federal minimum wage, I include a dummy variable that equals 1 if the state's minimum wage exceeds the federal minimum wage, and zero if the state's minimum wage is equal to or less than the federal minimum wage.

Focusing on the 2005 to 2011 period, I find that the specifications fail to generate a positive coefficients on the percent affected. Table 8 reports the estimated coefficient for the "percent affected" variable for the various models and specifications. Simply put, using different measures of the macro economy's health, including the starting point for the macro measure, and controlling for the state's relative level of its minimum wage does not alter our earlier result.

### **VIII. Sensitivity Analysis**

As a model specification test, I regress the change in a state's change in food security from 1998/99 to 2005/06 on its percent affected in 1996. The equation includes the changes in the state's food stamp usage and overall employment-population ratio. If the increases in the federal minimum wage had independent impacts on food security, then the percent affected coefficient in this model should be zero. I have purposely misspecified the model. The federal minimum wage did not increase over this period. Thus, I don't expect a positive relationship between food security and the percent affected. Formally, the equation can be written as follows:

12)

$$\Delta FS_{i,(2006/05-1998/99)} = \gamma_0 + \gamma_1 \% \textit{Affected}_{i,1996} + \gamma_2 \Delta X_{i,(2006/05-1998/99)} + \Delta \varepsilon_{i,(2006/05-1998/99)},$$

Equation (11) is identical to our models in Tables 5 to 7, except that I use the 1998, 1999, 2005, and 2006 CPS's to build *pseudo* pre- and post-increase state aggregates. The coefficient on percent affected captures the relationship between a state's share of affected workers prior to the increases in the minimum wage (e.g., 1996 or 2006) and the state's change in food security from 1998/99 to 2005/06. The estimate of  $\gamma_1$  is expected to be zero, or small and have little to no precision. The percent affected in 1996 or 2006 should not be correlated with changes in food security in years in which the federal minimum wage was unchanged.

I estimate six additional specifications: 1) Model 1 plus state dummy variables, 2) Model 1 plus the macro measure's initial level, 3) changes in the macro measures and food stamp usage, and whether in 2006, a state's minimum wage exceeded the federal minimum wage, 4) the same as model 4, but the dummy variable that corresponds to whether a state's minimum wage exceeds the federal minimum wage is for 2010, 5) the same as model 4, but the dummy variable for whether a state's minimum wage exceeds the federal minimum wage in 2010, and 6) model 6 with the initial period macro measure's level. All models are estimated using weighted least squares, with state population used as the weight. I first estimate the models using the employment-population ratio as the macro measure. I then estimate the models using the unemployment rate as the macro indicator.

The regression results of the change in food security from 1998/99 to 2005/06 on the percent affected in 1996 are displayed in Table 8. The estimates span from -0.07 to 0.02. The standard errors exceed the estimates: 0.08 to 0.11. The regressions on the percent affected in 2010 are also small, ranging from -0.03 to 0.03, with standard errors that equal the estimates. None of the estimates are measured with precision. These estimates support the paper's earlier

results that the variation in the percent affected prior to the increases in the federal minimum wage is capturing the policy's impact on household food security.<sup>20</sup>

## **IX. Policy Simulations**

In President Obama's 2013 State of the Union Speech, he proposed raising the federal minimum wage to \$9.90 per hour. California Congressman George Miller and Senator Tom Harkin proposed increasing the federal minimum wage to \$10.10 per hour and indexing it to inflation thereafter. The proposed increases are based on Congressman George Miller's three proposed increases in The Fair Minimum Wage Act (H.R. 1010). The Congressman and Senator's choice of \$10.10 per hour would bring the inflation-adjusted value close to its peak of \$10.56 in 1968. Cooper (2013) estimates that over 30 million Americans would experience a pay increase if the increases were enacted. More than 50 percent of the beneficiaries are women. Almost 90 percent are adult workers. Eighteen million children or almost 1 in 4 American children have parents who will receive pay increases.

What are the estimated food security effects of this proposed increase in the minimum wage to \$10.10 per hour? Table 9 presents estimated impacts of the increases on food security. "Total Estimated Workers" is constructed using the Current Population Survey, where respondents are at least 16 years of age, working, and possess a valid hourly wage, or the hourly wage can be imputed from their weekly earnings and average weekly hours. "Directly Affected Workers" will experience an increase in their earnings because the new minimum wage will exceed their hourly earnings. "Indirectly Affected Workers" have an hourly wage that exceeds the new minimum wage. They will experience an increase in their earnings to the extent that employers adjust their pay scales to reflect the new minimum wage. "Total Affected" as a fraction of workers is the ratio of "Total Affected" and "Total Estimated Workers". Once fully

phased in over the three increases, 23.4 percent of hourly wage workers would be impacted. These estimates are reproduced from Appendix Table 2 of Cooper (2013).

I use 0.132, the pooled estimated coefficient from the relationship between a change in food security and the share of household heads that have hourly earnings between the current and new minimum wage. The Predicted Change in Food Security is the product of the estimated coefficient and the fraction of affected workers. Predicted Food Security is constructed by taking the Economic Research Service/USDA's estimated three year average (2010-12) of household and individual food security and adding the predicted changes in food security (Column 5).<sup>21</sup>

The number of food secure households is the product of the predicted food security and estimated total number of households (individuals). The Change in Food Security is the difference between the number of households/individuals that are secure for each proposed increase. Table 10 indicates that 11.8 million households would become food secure, or 28.5 million individuals would become food secure. Finally, Table 11 reports state-specific estimates. The unique result here is that southern states comprise the top 15 beneficiaries of the increases. This is measured by comparing a state's actual 2010-12 food security to its predicted food security.

## **X. Conclusions**

Research on the economic impacts of increases in the federal minimum wage remains an active area of inquiry; however, the focus for many researchers and policy makers has shifted from estimating dis-employment effects to estimating the broader impacts on economic welfare. First, researchers found that the profile of minimum wage workers had changed. Today, more "breadwinners" support their households on the minimum wage. Second, researchers found evidence that the increases in the minimum wage during the 1990s had significant impacts on the

wage distribution. Another set of increases occurred in 2007, 2008 and 2009. To my knowledge few studies have examined their impact.

Did these and the earlier 1990s increases lead to improvements in the welfare of low-wage households? More specifically, did the increases in the minimum wage translate into greater food security for low-wage households? To answer these questions I used data from the Food Security Supplements of the Current Population Survey. I first establish that households headed by nonwhites, single parents, or persons with no more than a high school degree have food security rates that are lower than the rate prevailing in the general population. I then show that food security rates increased modestly 1995 to 1999, and fell from 2005 to 2011.

My estimation strategy finds that even after controlling for the links between the 1990s economic expansion and food security, and food stamp usage and food security, the October 1996 and September 1997 increases in the federal minimum wage raised food security, particularly in low-income households where householders had completed no more than a high school degree or were a single parent. The source of the increases is larger due to households moving from low food insecurity to food secure. For the three increases in the federal minimum wage that occurred from 2007 to 2009, the increases only raised food security for single parent households.

Because of the extreme nature of the macroeconomy during the 1990s and 2000s increases, the economic boom during the 1990s, and the “Great Recession” during the 2000 period, my preferred estimate of the increase’s affect comes from a model that pools the two periods. I find that a state with 1 percent higher increase in the share of “affected” workers will

have a 0.13 percentage point increase in their food security. The increase is larger among householders who have no more than a high school degree, are single parents.

My sensitivity analysis that estimates models with different approaches to controlling for macroeconomic fluctuations and estimates misspecified models supports our findings that the increases had real impacts on food security.

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**Table 1: The Nominal Hourly Wage Distributions of Reference Persons (in Percent)**

<b>Panel A: 1995/96 and 1998/99</b>										
<b>All Reference Persons</b>										
<b>Year</b>	<b>Sample</b>	<b>Less than \$4.25</b>	<b>\$4.25- \$4.74</b>	<b>\$4.75- \$5.14</b>	<b>\$5.15- \$5.74</b>	<b>\$5.75- \$6.24</b>	<b>\$6.25- \$6.64</b>	<b>\$6.65- \$8.28</b>	<b>\$8.29- \$15.37</b>	<b>At Least \$15.38</b>
1995/96	5,350	1.3%	2.9%	4.3%	4.1%	4.8%	3.1%	15.0%	43.5%	21.0%
1998/99	3,476	0.4%	0.1%	1.3%	4.0%	4.8%	3.5%	15.1%	43.7%	27.1%
<b>Black or African American Reference Persons</b>										
1995/96	632	1.7%	4.2%	5.7%	5.6%	7.8%	3.8%	18.0%	38.6%	14.6%
1998/99	490	0.0%	0.0%	1.4%	7.0%	5.2%	6.6%	21.8%	39.1%	19.0%
<b>Latino Reference Persons</b>										
1995/96	453	3.5%	6.3%	8.7%	6.3%	7.0%	6.4%	15.0%	36.2%	10.6%
1998/99	351	0.4%	0.0%	2.3%	2.7%	9.5%	5.5%	21.8%	41.7%	16.1%
<b>Single Parent Reference Persons</b>										
1995/96	993	2.5%	5.1%	7.6%	6.2%	5.5%	3.8%	19.1%	38.1%	12.0%
1998/99	683	0.9%	0.0%	1.4%	7.1%	6.8%	6.0%	20.9%	39.4%	17.5%
<b>No More than a High School Diploma</b>										
1995/96	4,112	1.6%	3.4%	4.9%	4.8%	5.6%	3.5%	16.0%	43.8%	16.4%
1998/99	2,622	0.3%	0.1%	1.5%	4.8%	5.5%	4.2%	16.7%	44.7%	22.2%
Notes: Authors' calculations from the 1995, 1996, 1998, 1999, 2005, 2006, 2010 and 2011 Current Population Survey Food Supplements. The years before the increase are pooled (e.g., 1995/96). The years after the increase are pooled (1998/99). The pooling is done based on the US Department of Agriculture's strong recommendation to combine years. This will be important when I estimate food security for state-household income groups. The earnings data on which these figures are based is only collected in the CPS's outgoing rotation groups (4 and 8), which represent one fifth of the sample. In 1998 and 1999, as a result of a test question used in rotation group 8, households in this rotation group with multiple children or adults were excluded from the computation of food security. The other rotation groups were weighted to account for this drop in sample. The distributions have been weighted using the household sample weight, which is based on the nominal hourly wages of the household reference person. To be included in the sample, the household must have complete information for all of the following variables: household family income, structure, size, and urban residency status, as well as the reference person's hourly wage, gender, race/ethnicity, age, educational attainment, and industry and occupation of employment.										

**Table 1 cont.: The Nominal Hourly Wage Distributions of Reference Persons (in Percent)**

<b>Panel B: 2005/06 and 2010/11</b>										
<b>All Reference Persons</b>										
<b>Year</b>	<b>Sample</b>	<b>Less than \$4.25</b>	<b>\$4.25- \$4.74</b>	<b>\$4.75- \$5.14</b>	<b>\$5.15- \$5.84</b>	<b>\$5.85- \$6.54</b>	<b>\$6.55- \$7.24</b>	<b>\$7.25- \$8.28</b>	<b>\$8.29- \$15.37</b>	<b>At Least \$15.38</b>
2005/06	6,186	0.3%	0.1%	0.1%	<b>0.7%</b>	<b>2.4%</b>	<b>3.2%</b>	7.7%	48.0%	37.6%
2010/11	6,333	0.2%	0.1%	0.1%	<b>0.1%</b>	<b>0.4%</b>	<b>0.8%</b>	8.2%	44.1%	46.0%
<b>Black or African American Reference Persons</b>										
2005/06	607	0.4%	0.0%	0.0%	<b>1.9%</b>	<b>3.7%</b>	<b>4.6%</b>	10.4%	55.5%	23.4%
2010/11	754	0.0%	0.0%	0.2%	<b>0.0%</b>	<b>0.0%</b>	<b>1.3%</b>	13.8%	51.1%	33.5%
<b>Latino Reference Persons</b>										
2005/06	777	0.0%	0.2%	0.1%	<b>0.7%</b>	<b>3.3%</b>	<b>4.6%</b>	12.8%	51.6%	26.7%
2010/11	841	0.3%	0.0%	0.0%	<b>0.1%</b>	<b>0.4%</b>	<b>1.7%</b>	10.6%	52.6%	34.3%
<b>Single Parent Reference Persons</b>										
2005/06	1,280	0.4%	0.2%	0.1%	<b>1.3%</b>	<b>3.2%</b>	<b>4.2%</b>	10.9%	53.9%	25.6%
2010/11	1,399	0.3%	0.1%	0.3%	<b>0.1%</b>	<b>0.5%</b>	<b>1.5%</b>	13.3%	50.8%	33.1%
<b>No More than a High School Diploma</b>										
2005/06	4,273	0.2%	0.1%	0.1%	<b>0.9%</b>	<b>3.0%</b>	<b>4.1%</b>	9.7%	52.8%	29.0%
2010/11	4,039	0.3%	0.1%	0.2%	<b>0.1%</b>	<b>0.5%</b>	<b>1.0%</b>	10.7%	50.5%	36.8%
Notes: Authors' calculations from the 1995, 1996, 1998, 1999, 2005, 2006, 2010 and 2011 Current Population Survey Food Supplements. The years before the increase are pooled (e.g., 1995/96). The years after the increase are pooled (1998/99). The pooling is done based on the US Department of Agriculture's strong recommendation to combine years. This will be important when I estimate food security for state-household income groups. The earnings data on which these figures are based is only collected in the CPS's outgoing rotation groups (4 and 8), which represent one fifth of the sample. In 1998 and 1999, as a result of a test question used in rotation group 8, households in this rotation group with multiple children or adults were excluded from the computation of food security. The other rotation groups were weighted to account for this drop in sample. The distributions have been weighted using the household sample weight, which is based on the nominal hourly wages of the household reference person. To be included in the sample, the household must have complete information for all of the following variables: household family income, structure, size, and urban residency status, as well as the reference person's hourly wage, gender, race/ethnicity, age, educational attainment, and industry and occupation of employment.										

**Table 2: Estimates of Macroeconomic Conditions and Household Food Security**

<b>Panel A: U.S. Macroeconomic Indicators</b>				
<b>Year</b>	<b>Unemployment Rate</b>	<b>Employment-Population Ratio</b>	<b>Total Nonfarm Growth (1,000s)</b>	<b>Real GDP Growth (Billions of dollars)</b>
1995/96	5.5%	63.0%	118,546	10,357
1998/99	4.4%	64.2%	127,562	11,792
<b>Change</b>	<b>-1.1%</b>	<b>1.2%</b>	<b>7.6%</b>	<b>13.9%</b>
2005/06	4.8%	62.9%	134,934	14,425
2010/11	9.3%	58.4%	130,705	14,916
<b>Change</b>	<b>4.5%</b>	<b>-4.5%</b>	<b>-3.1%</b>	<b>3.4%</b>

Notes: Author's calculations from Bureau of Labor Statistics data ([www.bls.gov](http://www.bls.gov)) and Bureau of Economic Analysis ([www.bea.gov](http://www.bea.gov)). Estimates are two-year averages of the annual values for each year.

<b>Panel B: Food Security</b>	<b>Reference Householder</b>				
	<b>All</b>	<b>Black</b>	<b>Latino</b>	<b>Single Parents</b>	<b>No More than a High School Diploma</b>
<b>Year</b>					
1995/96	86.2%	80.4%	79.8%	75.0%	84.3%
1998/99	88.8%	83.2%	82.3%	77.4%	87.5%
<b>Change in Percentage Points</b>	<b>2.6%</b>	<b>2.8%</b>	<b>2.5%</b>	<b>2.4%</b>	<b>3.2%</b>
2005/06	85.5%	75.3%	79.6%	76.8%	83.6%
2010/11	82.5%	75.4%	74.4%	69.5%	79.0%
<b>Change in Percentage Points</b>	<b>-3.0%</b>	<b>0.1%</b>	<b>-5.2%</b>	<b>-7.3%</b>	<b>-4.6%</b>

Notes: Author's calculations from the 1995, 1996, 1998, 1999, 2005, 2006, 2010 and 2011 Current Population Survey Food Supplements. To be included in the sample, the household must have complete information for all of the following variables: household family income, structure, size, and urban residency status, as well as the reference person's hourly wage, gender, race/ethnicity, age, educational attainment, and industry and occupation of employment. In 1998 and 1999, as a result of a test question used in rotation group 8, households in this rotation group with multiple children or adults were excluded from the computation of food security. The other rotation groups were weighted to account for this drop in sample. The years before the increase in the minimum wage are pooled (e.g., 1995/96 and 2005/06). The years after the increase are pooled (1998/99 and 2010/11). The pooling is done based on the US Department of Agriculture's strong recommendation to combine years. This will be important when I estimate food security for state-household income groups.

**Table 3: The Determinants of Household Food Security**

Variable	1995 to 1999				2005 to 2011			
	All	Nonwhite	No More than H.S. Degree	Single Parents	All	Nonwhite	No More than H.S. Degree	Single Parents
Hourly Wage	0.0080 <sup>a</sup>	0.0096 <sup>a</sup>	0.0103 <sup>a</sup>	0.0134 <sup>a</sup>	0.0050 <sup>a</sup>	0.0074 <sup>a</sup>	0.0059 <sup>a</sup>	0.0058 <sup>a</sup>
Food Stamp Usage = 1	-0.1116 <sup>a</sup>	-0.1450 <sup>a</sup>	-0.1092 <sup>a</sup>	- 0.1362 <sup>a</sup>	-0.3105 <sup>a</sup>	-0.3617 <sup>a</sup>	-0.3390 <sup>a</sup>	-0.3690 <sup>a</sup>
Food Stamp Amount	-0.0001	-0.0001	-0.0001	-0.0002	0.0002 <sup>a</sup>	0.0003 <sup>a</sup>	0.0002 <sup>a</sup>	0.0002 <sup>b</sup>
Female = 1	0.0248 <sup>b</sup>	0.0386	0.0339 <sup>a</sup>	-0.0386	-0.0095	-0.0075	-0.0093	-0.0845 <sup>a</sup>
Latino = 1	-0.0193 <sup>b</sup>		-0.0167	0.0145	-0.0468 <sup>a</sup>		-0.0439 <sup>a</sup>	-0.0357 <sup>c</sup>
Black = 1	-0.0148 <sup>c</sup>		-0.0163 <sup>c</sup>	-0.0018	-0.0250 <sup>a</sup>		-0.0111	0.0106
Native American = 1	-0.006		-0.0127	0.0103	-0.0341		-0.0558 <sup>b</sup>	-0.0162
Asian = 1	0.0014		0.0129	0.0585	0.009		0.0243	-0.0118
Age	-0.0061 <sup>a</sup>	-0.0032	-0.0072 <sup>a</sup>	- 0.0132 <sup>a</sup>	-0.0088 <sup>a</sup>	-0.0075 <sup>a</sup>	-0.0098 <sup>a</sup>	-0.0180 <sup>a</sup>
High School Dropout = 1	-0.0723 <sup>a</sup>	-0.0615 <sup>c</sup>		- 0.1565 <sup>a</sup>	-0.0733 <sup>a</sup>	-0.0973 <sup>a</sup>		-0.1020 <sup>a</sup>
High School Graduate = 1	-0.0346 <sup>a</sup>	-0.0096	0.0287 <sup>a</sup>	- 0.1014 <sup>b</sup>	-0.0388 <sup>a</sup>	-0.036	0.0304 <sup>a</sup>	-0.0447 <sup>c</sup>
Associate Degree = 1	-0.0221 <sup>c</sup>	0.0301		- 0.0945 <sup>c</sup>	-0.0431 <sup>a</sup>	-0.0739 <sup>a</sup>		-0.0046
Single Father = 1	-0.0442 <sup>a</sup>	-0.0264	-0.0456		-0.0503 <sup>a</sup>	-0.0181	-0.0618 <sup>a</sup>	
Single Mother = 1	-0.1295 <sup>a</sup>	-0.1429 <sup>a</sup>	-0.1472 <sup>a</sup>		-0.1056 <sup>a</sup>	-0.0821 <sup>a</sup>	-0.1107 <sup>a</sup>	
Individual Male = 1	-0.0258 <sup>b</sup>	-0.0136	-0.0283 <sup>b</sup>		-0.0566 <sup>a</sup>	-0.0151	-0.0607 <sup>a</sup>	
Individual female = 1	-0.0988 <sup>a</sup>	-0.1224 <sup>a</sup>	-0.1163 <sup>a</sup>		-0.1093	-0.0459 <sup>c</sup>	-0.1209	
Number in Household	-0.0109 <sup>a</sup>	-0.0067	-0.0132 <sup>a</sup>	- 0.0211 <sup>a</sup>	-0.0128 <sup>a</sup>	-0.0117 <sup>a</sup>	-0.0150 <sup>a</sup>	-0.0116 <sup>b</sup>
Urban = 1	0.0015	0.0187	0.0042	-0.0004	-0.0059	-0.0055	-0.0125 <sup>c</sup>	-0.0367 <sup>b</sup>
Public Sector = 1	0.0084	0.0189	0.0123	0.0234	0.0264 <sup>a</sup>	0.0456 <sup>b</sup>	0.0254 <sup>b</sup>	0.0528 <sup>b</sup>
Dep. Var. Sample Mean	0.884	0.832	0.868	0.775	0.848	0.779	0.824	0.736
Sample Size	11,454	2,957	8,735	2,184	19,024	5,424	12,817	3,953

Notes: Author's calculations from the 1995 to 1999 and 2005 to 2011 CPS Food Supplements. In 1995, I use the 12 month food security variable, HSCAL12D. To adjust for differences in the screener question in 1996 to 1999, I use the HRFS12C1 variable. From 2005 to 2011, I use the HRFS12M1 food security variable. All models include industry, occupation, and year dummy variables. The samples consist of households that have complete information for the following variables: household family income, structure, size, and urban residency status, as well as the reference person's gender, race/ethnicity, age, educational attainment, and industry and occupation of employment. Variables for Blacks, Native Americans, and Asians refer to non-Hispanic members of the respective groups. Non-Hispanic Whites are omitted from the set of race and ethnicity variables included in the models; college graduates are omitted from the set of variables for educational attainment; and dual-headed households are omitted from the set of variables for household structure. "Monthly amount of food stamps" is measured in dollars and assumes a value of 0 for all non-recipients. Suburban reference persons are the excluded group for the Urban dummy variable. Private sector householders are the excluded group for the Public Sector dummy variable. An "a" denotes 1 percent level of significance. A "b" denotes 5 percent level of significance, and a "c" denotes the 10 percent level of significance.

**Table 4: Ordered Probit Equations - The Determinants of Household Food Security  
(Change in Probability of Outcome with respect to Change in Predictor Variable)**

Panel A: All Households	1995-1999			2005-2011		
	Food Insecure		Food Secure	Very Low Security	Low Security	Food Secure
	Hunger	w/out Hunger				
Hourly Wage	-0.0037 <sup>a</sup>	-0.0051 <sup>a</sup>	0.0087 <sup>a</sup>	-0.002 <sup>a</sup>	-0.003 <sup>a</sup>	0.005 <sup>a</sup>
Food Stamp Usage = 1	0.0324 <sup>a</sup>	0.0449 <sup>a</sup>	-0.0773 <sup>a</sup>	0.091 <sup>a</sup>	0.110 <sup>a</sup>	-0.201 <sup>a</sup>
Food Stamp Amount	0.00002	0.00003	-0.00005	-0.00009 <sup>a</sup>	-0.00011 <sup>a</sup>	0.00020 <sup>a</sup>
Female = 1	-0.0125 <sup>a</sup>	-0.0173 <sup>a</sup>	0.0299 <sup>a</sup>	0.004	0.005	-0.010
Latino = 1	0.0090 <sup>b</sup>	0.0125 <sup>b</sup>	-0.0215 <sup>b</sup>	0.017 <sup>a</sup>	0.020 <sup>a</sup>	-0.037 <sup>a</sup>
Black = 1	0.0069 <sup>c</sup>	0.0095 <sup>c</sup>	-0.0164 <sup>c</sup>	0.007 <sup>b</sup>	0.009 <sup>b</sup>	-0.016 <sup>b</sup>
Native American = 1	-0.0024	-0.0034	0.0058	0.011	0.013	-0.025
Asian = 1	0.0004	0.0005	-0.0009	-0.004	-0.005	0.009
Age	0.0032 <sup>a</sup>	0.0044 <sup>a</sup>	-0.0076 <sup>a</sup>	0.004 <sup>a</sup>	0.005 <sup>a</sup>	-0.010 <sup>a</sup>
Age <sup>2</sup>	-0.00003 <sup>a</sup>	-0.0001 <sup>a</sup>	0.0001 <sup>a</sup>	-0.00005 <sup>a</sup>	-0.00007 <sup>a</sup>	0.0001 <sup>a</sup>
High School Dropout = 1	0.0262 <sup>a</sup>	0.0363 <sup>a</sup>	-0.0624 <sup>a</sup>	0.026 <sup>a</sup>	0.031 <sup>a</sup>	-0.058 <sup>a</sup>
High School Graduate = 1	0.0162 <sup>a</sup>	0.0224 <sup>a</sup>	-0.0386 <sup>a</sup>	0.018 <sup>a</sup>	0.021 <sup>a</sup>	-0.039 <sup>a</sup>
Associate Degree = 1	0.0106 <sup>c</sup>	0.0147 <sup>c</sup>	-0.0252 <sup>c</sup>	0.018 <sup>a</sup>	0.021 <sup>a</sup>	-0.039 <sup>a</sup>
Single Father = 1	0.0167 <sup>a</sup>	0.0232 <sup>a</sup>	-0.0399 <sup>a</sup>	0.022 <sup>a</sup>	0.027 <sup>a</sup>	-0.049 <sup>a</sup>
Single Mother = 1	0.0442 <sup>a</sup>	0.0612 <sup>a</sup>	-0.1055 <sup>a</sup>	0.038 <sup>a</sup>	0.046 <sup>a</sup>	-0.084 <sup>a</sup>
Individual Male = 1	0.0135 <sup>a</sup>	0.0187 <sup>a</sup>	-0.0322 <sup>a</sup>	0.027 <sup>a</sup>	0.032 <sup>a</sup>	-0.059 <sup>a</sup>
Individual Female = 1	0.0393 <sup>a</sup>	0.0544 <sup>a</sup>	-0.0937 <sup>a</sup>	0.045 <sup>a</sup>	0.054 <sup>a</sup>	-0.099 <sup>a</sup>
Other Household = 1	0.0405	0.0561	-0.0966	-0.339	-0.407	0.746
Number in Household	0.0048 <sup>a</sup>	0.0066 <sup>a</sup>	-0.0114 <sup>a</sup>	0.005 <sup>a</sup>	0.006 <sup>a</sup>	-0.011 <sup>a</sup>
Urban = 1	-0.0003	-0.0004	0.0007	0.004	0.004	-0.008
Public Sector = 1	-0.0040	-0.0055	0.0094	-0.010 <sup>b</sup>	-0.012 <sup>b</sup>	0.023 <sup>b</sup>

Notes: See end of table.



**Table 4 cont.: Ordered Probit Equations - The Determinants of Household Food Security  
(Change in Probability of Outcome with respect to Change in Predictor Variable)**

	1995-1999			2005-2011		
	Food Insecure		Food Secure	Very Low Security	Low Security	Food Secure
	Hunger	w/out Hunger				
<b>Panel B: Nonwhite</b>						
Hourly Wage	-0.0044 <sup>a</sup>	-0.0055 <sup>a</sup>	0.0099 <sup>a</sup>	-0.003 <sup>a</sup>	-0.004 <sup>a</sup>	0.007 <sup>a</sup>
Food Stamp Usage = 1	0.0474 <sup>a</sup>	0.0592 <sup>a</sup>	-0.1066 <sup>a</sup>	0.107 <sup>a</sup>	0.142 <sup>a</sup>	-0.249 <sup>a</sup>
Food Stamp Amount	0.00001	0.00002	-0.00003	-0.0001 <sup>a</sup>	-0.0002 <sup>a</sup>	0.0003 <sup>a</sup>
Female = 1	-0.0171	-0.0213	0.0383	0.004	0.006	-0.010
Age	0.0019	0.0024	-0.0043	0.004 <sup>a</sup>	0.005 <sup>a</sup>	-0.009 <sup>a</sup>
Age <sup>2</sup>	-0.00003	-0.00004 <sup>c</sup>	0.0001 <sup>c</sup>	-0.0001 <sup>a</sup>	-0.00007 <sup>a</sup>	0.0001 <sup>a</sup>
High School Dropout = 1	0.0233 <sup>c</sup>	0.0291 <sup>c</sup>	-0.0523 <sup>c</sup>	0.032 <sup>a</sup>	0.042 <sup>a</sup>	-0.074 <sup>a</sup>
High School Graduate = 1	0.0032	0.0040	-0.0072	0.013	0.017	-0.030
Associate Degree = 1	-0.0159	-0.0198	0.0357	0.025 <sup>b</sup>	0.034 <sup>b</sup>	-0.059 <sup>b</sup>
Single Father = 1	0.0121	0.0152	-0.0273	0.008	0.010	-0.017
Single Mother = 1	0.0530 <sup>a</sup>	0.0662 <sup>a</sup>	-0.1193 <sup>a</sup>	0.031 <sup>a</sup>	0.041 <sup>a</sup>	-0.072 <sup>a</sup>
Individual Male = 1	0.0128	0.0160	-0.0288	0.015 <sup>c</sup>	0.020 <sup>c</sup>	-0.035 <sup>c</sup>
Individual Female = 1	0.0501 <sup>a</sup>	0.0625 <sup>a</sup>	-0.1126 <sup>a</sup>	0.023 <sup>b</sup>	0.030 <sup>b</sup>	-0.053 <sup>b</sup>
Other Household = 1	-0.3366 <sup>a</sup>	-0.4202 <sup>a</sup>	0.7568 <sup>a</sup>	-	-	-
Number in Household	0.0030	0.0037	-0.0067	0.004 <sup>b</sup>	0.005 <sup>b</sup>	-0.009 <sup>b</sup>
Urban = 1	-0.0079	-0.0098	0.0177	0.003	0.004	-0.008
Public Sector = 1	-0.0089	-0.0111	0.0201	-0.015 <sup>c</sup>	-0.020 <sup>c</sup>	0.034 <sup>c</sup>
Notes: See end of the table.						

**Table 4 cont.: Ordered Probit Equations - The Determinants of Household Food Security  
(Change in Probability of Outcome with respect to Change in Predictor Variable)**

Panel C: No More than High School Degree	1995-1999			2005-2011		
	Food Insecure		Food Secure	Very Low Security	Low Security	Food Secure
	Hunger	w/out Hunger				
Hourly Wage	-0.0046 <sup>a</sup>	-0.0064 <sup>a</sup>	0.0110 <sup>a</sup>	-0.003 <sup>a</sup>	-0.003 <sup>a</sup>	0.006 <sup>a</sup>
Food Stamp Usage = 1	0.0321 <sup>a</sup>	0.0450 <sup>a</sup>	-0.0771 <sup>a</sup>	0.104 <sup>a</sup>	0.123 <sup>a</sup>	-0.226 <sup>a</sup>
Food Stamp Amount	0.00002	0.00003	-0.0001	0.0001 <sup>a</sup>	0.0001 <sup>a</sup>	0.0002 <sup>a</sup>
Female = 1	-0.0168 <sup>a</sup>	-0.0236 <sup>a</sup>	0.0404 <sup>a</sup>	0.005	0.006	-0.010
Latino = 1	0.0078 <sup>c</sup>	0.0109 <sup>c</sup>	-0.0187 <sup>c</sup>	0.015 <sup>a</sup>	0.018 <sup>a</sup>	-0.034 <sup>a</sup>
Black = 1	0.0074 <sup>c</sup>	0.0104 <sup>c</sup>	-0.0178 <sup>c</sup>	0.0004	0.0005	-0.001
Native American = 1	-0.0007	-0.0010	0.0017	0.016	0.019	-0.036
Asian = 1	-0.0044	-0.0062	0.0106	-0.011	-0.013	0.024
Age	0.0036 <sup>a</sup>	0.0050 <sup>a</sup>	-0.0086 <sup>a</sup>	0.005 <sup>a</sup>	0.006 <sup>a</sup>	-0.011 <sup>a</sup>
Age <sup>2</sup>	-0.0001 <sup>a</sup>	-0.0001 <sup>a</sup>	0.0001 <sup>a</sup>	-0.0001 <sup>a</sup>	-0.0001 <sup>a</sup>	0.0001 <sup>a</sup>
High School Graduate = 1	-0.0108 <sup>a</sup>	-0.0151 <sup>a</sup>	0.0259 <sup>a</sup>	-0.010 <sup>b</sup>	-0.012 <sup>b</sup>	0.023 <sup>a</sup>
Single Father = 1	0.0171 <sup>a</sup>	0.0240 <sup>a</sup>	-0.0411 <sup>a</sup>	0.027 <sup>a</sup>	0.032 <sup>a</sup>	-0.059 <sup>a</sup>
Single Mother = 1	0.0500 <sup>a</sup>	0.0701 <sup>a</sup>	-0.1201 <sup>a</sup>	0.040 <sup>a</sup>	0.047 <sup>a</sup>	-0.087 <sup>a</sup>
Individual Male = 1	0.0144 <sup>a</sup>	0.0201 <sup>a</sup>	-0.0345 <sup>a</sup>	0.030 <sup>a</sup>	0.035 <sup>a</sup>	-0.065 <sup>a</sup>
Individual Female = 1	0.0442 <sup>a</sup>	0.0620 <sup>a</sup>	-0.1062 <sup>a</sup>	0.050 <sup>a</sup>	0.059 <sup>a</sup>	-0.108 <sup>a</sup>
Other Household = 1	0.0707	0.0991	-0.1698	-0.375	-0.444	0.820
Number in Household	0.0056 <sup>a</sup>	0.0078 <sup>a</sup>	-0.0134 <sup>a</sup>	0.006 <sup>a</sup>	0.007 <sup>a</sup>	-0.013 <sup>a</sup>
Urban = 1	-0.0010	-0.0014	0.0023	0.007 <sup>c</sup>	0.008 <sup>c</sup>	-0.014 <sup>c</sup>
Public Sector = 1	-0.0059	-0.0083	0.0142	-0.008	-0.010	0.018

Notes: See end of table.

**Table 4 cont.: Ordered Probit Equations - The Determinants of Household Food Security  
(Change in Probability of Outcome with respect to Change in Predictor Variable)**

Panel D: Single Parents	1995-1999			2005-2011		
	Food Insecure		Food Secure	Very Low Security	Low Security	Food Secure
	Hunger	w/out Hunger				
Hourly Wage	-0.0057 <sup>a</sup>	-0.0071 <sup>a</sup>	0.0128 <sup>a</sup>	-0.003 <sup>a</sup>	-0.003 <sup>a</sup>	0.006 <sup>a</sup>
Food Stamp Usage = 1	0.0378 <sup>b</sup>	0.0476 <sup>b</sup>	-0.0854 <sup>b</sup>	0.123 <sup>a</sup>	0.144 <sup>a</sup>	-0.267 <sup>a</sup>
Food Stamp Amount	0.0001	0.0001	-0.0002	0.0001 <sup>a</sup>	0.0001 <sup>b</sup>	0.0002 <sup>b</sup>
Female = 1	0.0180 <sup>c</sup>	0.0227 <sup>c</sup>	-0.0407 <sup>c</sup>	0.033 <sup>a</sup>	0.039 <sup>a</sup>	-0.073 <sup>a</sup>
Latino = 1	-0.0041	-0.0051	0.0092	0.011	0.013	-0.025
Black = 1	0.0005	0.0006	-0.0011	-0.009	-0.011	0.021
Native American = 1	-0.0109	-0.0137	0.0246	-0.002	-0.002	0.004
Asian = 1	-0.0194	-0.0245	0.0439	0.004	0.005	-0.009
Age	0.0061 <sup>b</sup>	0.0077 <sup>b</sup>	-0.0137 <sup>b</sup>	0.008 <sup>a</sup>	0.009 <sup>a</sup>	-0.017 <sup>a</sup>
Age <sup>2</sup>	-0.0001 <sup>b</sup>	-0.0001 <sup>b</sup>	0.0002 <sup>b</sup>	0.0001 <sup>a</sup>	0.0001 <sup>a</sup>	0.0002 <sup>a</sup>
High School Dropout = 1	0.0567 <sup>a</sup>	0.0714 <sup>a</sup>	-0.1281 <sup>a</sup>	0.032 <sup>b</sup>	0.038 <sup>b</sup>	-0.070 <sup>b</sup>
High School Graduate = 1	0.0473 <sup>a</sup>	0.0597 <sup>a</sup>	-0.1070 <sup>a</sup>	0.016	0.019	-0.035
Associate Degree = 1	0.0418 <sup>b</sup>	0.0527 <sup>b</sup>	-0.0945 <sup>b</sup>	-0.002	-0.002	0.003
Number in Household	0.0088 <sup>a</sup>	0.0111 <sup>a</sup>	-0.0199 <sup>a</sup>	0.005 <sup>b</sup>	0.006 <sup>b</sup>	-0.010 <sup>b</sup>
Urban = 1	-0.0007	-0.0009	0.0016	0.020 <sup>a</sup>	0.023 <sup>a</sup>	-0.043 <sup>a</sup>
Public Sector = 1	-0.0066	-0.0084	0.0150	-0.017	-0.020	0.038

Notes: Author's calculations from the 1995 to 1999 and 2005 to 2011 CPS Food Supplements. . In 1995, I use the 12 month food security variable, HSCAL12D. To adjust for differences in the screener question in 1996 to 1999, I use the HRFS12C1 variable. From 2005 to 2011, I use the HRFS12M1 food security variable. All models include industry, occupation, and year dummy variables. The samples consist of households that have complete information for the following variables: household family income, structure, size, and urban residency status, as well as the reference person's gender, race/ethnicity, age, educational attainment, and industry and occupation of employment. Variables for Blacks, Native Americans, and Asians refer to non-Hispanic members of the respective groups. Non-Hispanic Whites are omitted from the set of race and ethnicity variables included in the models; college graduates are omitted from the set of variables for educational attainment; and dual-headed households are omitted from the set of variables for household structure. "Monthly amount of food stamps" is measured in dollars and assumes a value of 0 for all non-recipients. Suburban reference persons are the excluded group for the Urban dummy variable. Private sector householders are the excluded group for the Public Sector dummy variable. An "a" denotes 1 percent level of significance. A "b" denotes 5 percent level of significance, and a "c" denotes the 10 percent level of significance.

**Table 5 : The Impact of the Minimum Wage on the Hourly Wage Distribution**

Wage Percentile	Pooled				1995-99				2005-11			
	All	Nonwhite	No More than a HS Degree	Single Parent	All	Nonwhite	No More than HS Degree	Single Parents	All	Nonwhite	No More than HS Degree	Single Parents
5	0.116 <sup>b</sup>	0.160 <sup>b</sup>	0.130 <sup>a</sup>	0.077	0.09	0.139	0.117 <sup>c</sup>	0.0132	0.145 <sup>a</sup>	0.232 <sup>a</sup>	0.150 <sup>a</sup>	0.119
10	0.102 <sup>b</sup>	0.296 <sup>a</sup>	0.106 <sup>b</sup>	0.156 <sup>a</sup>	0.05	0.319 <sup>b</sup>	0.067	0.113	0.153 <sup>a</sup>	0.342 <sup>a</sup>	0.144 <sup>a</sup>	0.149 <sup>c</sup>
15	0.136 <sup>b</sup>	0.284 <sup>a</sup>	0.113 <sup>b</sup>	0.115 <sup>b</sup>	0.124 <sup>c</sup>	0.344 <sup>b</sup>	0.086	0.1142	0.151 <sup>a</sup>	0.312 <sup>a</sup>	0.118 <sup>b</sup>	0.069
20	0.087 <sup>b</sup>	0.303 <sup>a</sup>	0.097 <sup>b</sup>	0.092 <sup>c</sup>	0.063	0.243 <sup>c</sup>	0.093	0.0462	0.108 <sup>b</sup>	0.363 <sup>a</sup>	0.078	0.072
25	0.047	0.338 <sup>a</sup>	0.068	0.064	0.025	0.28 <sup>b</sup>	0.065	0.0254	0.079 <sup>c</sup>	0.406 <sup>a</sup>	0.048	0.046
30	0.008	0.305 <sup>a</sup>	0.002	0.073	-0.022	0.286 <sup>b</sup>	0.003	0.0479	0.083 <sup>c</sup>	0.305 <sup>a</sup>	0.012	0.079
35	0.029	0.271 <sup>a</sup>	0.012	0.064	-0.023	0.233 <sup>c</sup>	0.011	0.0725	0.086	0.288 <sup>a</sup>	0.046	0.054
40	0.025	0.287 <sup>a</sup>	0.024	0.04	-0.024	0.238 <sup>c</sup>	-0.001	0.0596	0.078 <sup>c</sup>	0.305 <sup>a</sup>	0.072	0.059
45	0.015	0.244 <sup>a</sup>	0.016	0.04	-0.014	0.195	-0.011	0.0545	0.055	0.265 <sup>a</sup>	0.051	0.03
Median	0.014	0.219 <sup>a</sup>	-0.005	0.139 <sup>c</sup>	-0.012	0.134	-0.023	0.1702 <sup>c</sup>	0.034	0.255 <sup>a</sup>	0.037	0.104
55	0.010	0.194 <sup>a</sup>	-0.018	0.124 <sup>c</sup>	-0.012	0.174	-0.021	0.1764 <sup>c</sup>	0.035	0.184 <sup>a</sup>	0.009	0.035
60	0.033	0.166 <sup>b</sup>	-0.013	0.122 <sup>c</sup>	-0.002	0.094	-0.029	0.1787 <sup>c</sup>	0.076	0.217 <sup>a</sup>	0.003	0.051
65	0.060	0.160 <sup>b</sup>	-0.009	0.193 <sup>b</sup>	-0.02	0.092	-0.045	0.2374 <sup>c</sup>	0.119 <sup>b</sup>	0.183 <sup>b</sup>	0.026	0.121
70	0.067	0.076	-0.003	0.14	0.025	0.093	-0.078	0.1713	0.098 <sup>c</sup>	0.097	0.094	0.119
75	0.048	0.144 <sup>c</sup>	0.004	0.117	0.012	0.113	-0.045	0.145	0.056	0.155	0.088	0.108
80	0.037	0.251 <sup>b</sup>	0.027	0.169 <sup>c</sup>	-0.012	0.098	-0.037	0.2240 <sup>c</sup>	0.07	0.321 <sup>b</sup>	0.113 <sup>c</sup>	0.09
85	0.069	0.266 <sup>b</sup>	-0.014	0.171 <sup>c</sup>	-0.017	-0.055	-0.056	0.2364 <sup>b</sup>	0.124 <sup>c</sup>	0.412 <sup>b</sup>	0.056	0.048
90	0.040	0.246 <sup>c</sup>	0.046	0.220 <sup>b</sup>	-0.016	-0.036	-0.034	0.3059 <sup>c</sup>	0.09	0.348 <sup>b</sup>	0.13	0.079
Sample Size	301	252	299	262	152	117	153	129	149	135	299	133

Notes: Author's calculations from the 1995 to 1999 and 2005 to 2011 Current Population Survey Food Supplements. The income category-state-year aggregates are based on micro data samples of households for which we have complete information for all of the following variables: household family income, structure, size, urban residency status, and food stamp usage, as well as the reference person's gender, race/ethnicity, age, educational attainment, and industry and occupation of employment. The pooled models contain 306 observations. The models for each minimum wage increase contain 153 observations. The regressions are estimated using weighted least squares where the weight is the state's population. All models include industry, occupation and state dummy variables. The pooled model contains a dummy variable that indicates the minimum wage cross section (e.g., 1996/97 vs. 2007/08/09). "a" – Significant at the 1% level. "b" – Significant at the 5% level. "c" – Significant at the 10% level.

**Table 6: Impact of the Increases in the Minimum Wage on Employment  
(Entries are coefficient on Percent Affected)**

<b>Sample</b>	<b>All</b>	<b>Nonwhite</b>	<b>No More than HS Degree</b>	<b>Single Parents</b>
Pooled 1995-99 and 2005-11	0.142 <sup>a</sup>	0.130 <sup>a</sup>	0.163 <sup>a</sup>	0.079 <sup>b</sup>
	(0.018)	(0.031)	(0.020)	(0.032)
1995-99	0.168 <sup>a</sup>	0.219 <sup>a</sup>	0.184 <sup>a</sup>	0.119 <sup>b</sup>
	(0.023)	(0.044)	(0.022)	(0.046)
2005-11	0.198 <sup>a</sup>	0.126 <sup>b</sup>	0.211 <sup>a</sup>	0.063
	(0.030)	(0.049)	(0.035)	(0.051)
Sample Size	301	252	299	262
<p>Notes: Author's calculations from the 1995, 1996, 1998, 1999, 2005, 2006, 2010, and 2011 Current Population Survey Food Supplements. The income category-state-year aggregates are based on micro data samples of households for which we have complete information for all of the following variables: household family income, structure, size, urban residency status, and food stamp usage, as well as the reference person's gender, race/ethnicity, age, educational attainment, and industry and occupation of employment. The regressions are estimated using weighted least squares where the weight is the state's average population over each increase. The pooled models include a constant, a dummy variable whether the 1990s or 200s cross section and state dummy variables. "a" – Significant at the 1% level. "b" – Significant at the 5% level. "c"-Significant at the 10% level.</p>				

**Table 7: The Impact of the Minimum Wage on Food Security, Low Insecurity and Hunger/Very Low Insecurity**

Household Category	Pooled 1995-99 and 2005-11			1995-99		2005-11			
	Food Secure	Low Insecurity/ Low Security	Hunger/ Very Low Security	Food Secure	Insecure		Food Secure	Secure	
					Low	Hunger		Low	Very Low
All Households	0.1325 <sup>b</sup> (0.0615)	-0.1076 <sup>c</sup> (0.0588)	-0.0250 (0.0408)	0.2760 <sup>a</sup> (0.0783)	-0.1520 <sup>c</sup> (0.0809)	-0.1239 <sup>b</sup> (0.0493)	0.0020 (0.1118)	-0.0403 (0.1041)	0.0382 (0.0716)
Nonwhite	0.0753 (0.1033)	-0.0491 (0.0918)	-0.0263 (0.0654)	0.2557 <sup>a</sup> (0.1580)	-0.2274 (0.1558)	-0.0284 (0.1073)	-0.0197 (0.1603)	0.0464 (0.1388)	-0.0267 (0.0997)
No More than High School Degree	0.2218 <sup>a</sup> (0.0690)	-0.1954 <sup>a</sup> (0.0648)	-0.0264 (0.0432)	0.3861 <sup>a</sup> (0.0851)	-0.2214 <sup>a</sup> (0.0831)	-0.1647 <sup>a</sup> (0.0494)	0.0257 (0.1299)	-0.1247 (0.1232)	0.0990 (0.0758)
Single Parents	0.2874 <sup>a</sup> (0.0880)	-0.3007 <sup>a</sup> (0.0860)	0.0132 (0.0528)	0.2862 <sup>a</sup> (0.1128)	-0.2377 <sup>c</sup> (0.1256)	-0.0485 (0.0744)	0.3665 <sup>a</sup> (0.1376)	-0.4038 <sup>a</sup> (0.1316)	0.0373 (0.0853)

Notes: Author's calculations from the 1995, 1996, 1998, 1999, 2005, 2006, 2010, and 2011 Current Population Survey Food Supplements. The income category-state-year aggregates are based on micro data samples of households for which we have complete information for all of the following variables: household family income, structure, size, urban residency status, and food stamp usage, as well as the reference person's gender, race/ethnicity, age, educational attainment, and industry and occupation of employment. The regressions are estimated using weighted least squares where the weight is the state's population. All models include census division dummy variables. "a" – Significant at the 1% level. "b" – Significant at the 5% level. "c" – Significant at the 10% level.

**Table 8: Determinants of Food Security - Alternative Macro Measures and Model Specifications  
(Percent Affected Coefficient)**

<b>Macro Measure</b>	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
Change in Employment-Population Ratio	-0.015	0.002	0.005	-0.018	-0.009	-0.011	-0.022
	(0.095)	(0.112)	(0.112)	(0.095)	(0.096)	(0.096)	(0.097)
Change in Unemployment Rate	-0.042	-0.065	0.151	-0.054	-0.035	-0.045	0.099
	(0.098)	(0.119)	(0.146)	(0.101)	(0.101)	(0.102)	(0.119)
Change in Nonfarm Employment	-0.0005	-0.021	-0.013	-0.007	-0.005	-0.007	-0.001
	(0.094)	(0.111)	(0.109)	(0.094)	(0.095)	(0.095)	(0.095)
<b>Additional Variables</b>							
Change in Food Stamps	x	x	x	x	x	x	x
State Dummies		x	x				
Pre Increase Macro Level (2005/06)			x				x
Pre-Min Wage Above = 1				x		x	x
Post- Min Wage Above = 1					x	x	x
<p>Notes: Author's calculations from the 2005, 2006, 2010, and 2011 Current Population Survey Food Supplements. The income category-state-year aggregates are based on micro data samples of households for which we have complete information for all of the following variables: household family income, structure, size, urban residency status, and food stamp usage, as well as the reference person's gender, race/ethnicity, age, educational attainment, and industry and occupation of employment. The regressions are estimated using weighted least squares where the weight is the state's average population over each increase. The "a" denote significance at the 1% level. The "b" denotes significance at the 5% level and "c" denotes significance at the 10% level. The models in this table use changes in the aggregate employment-population ratio, unemployment rate and nonfarm payroll as the macro measures. The additional controls are change in food stamp usage, state dummy variables, the level of the employment-population ratio, unemployment rate and nonfarm payroll at the time of the increase (Pre Increase Macro), and indicators of whether the state's minimum wage exceeded the federal minimum wage prior to the increase, or after the increase (Pre-Min Wage Above and Post-Min Wage Above).</p>							

**Table 9: Estimated Food Security Effects of Proposed Federal Minimum Wage Increases**

	<b>Proposed Increase</b>	<b>Size of Increase</b>	<b>Total Estimated Workers</b>	<b>Directly Affected</b>	<b>Indirectly Affected</b>	<b>Total Affected</b>	<b>Total affected as fraction of workers</b>
Current	\$7.25						
2013	\$8.20	\$0.95	127,361,000	8,778,000	5,228,000	14,006,000	0.110
2014	\$9.15	\$0.95	128,356,000	14,489,000	6,815,000	21,304,000	0.166
2015	\$10.10	\$0.95	129,359,000	21,267,000	8,997,000	30,264,000	0.234
<p>Source: The proposed increases are based on Congressman George Miller’s three proposed increases in The Fair Minimum Wage Act (H.R. 1010). Columns 3 to 7 come from Appendix Table 2 in David Cooper and Doug Hall, “Raising the Federal Minimum Wage to \$10.10 Would Give Working Families, and The Overall Economy, a Much-Needed Boost.” Economic Policy Institute, March 13, 2013. <a href="http://www.epi.org/publications/bp357-federal-minimum-wage-increase/">http://www.epi.org/publications/bp357-federal-minimum-wage-increase/</a>. “Total Estimated Workers” is constructed using the Current Population Survey, where respondents are at least 16 years of age, working, and possess a valid hourly wage, or the hourly wage can be imputed from their weekly earnings and average weekly hours. “Directly Affected Workers” will experience an increase in their earnings because the new minimum wage will exceed their hourly earnings. “Indirectly Affected Workers” have an hourly wage that exceeds the new minimum wage. They will experience an increase in their earnings to the extent that employers adjust their pay scales to reflect the new minimum wage. “Total Affected” as a fraction of workers is the ratio of “Total Affected” and “Total Estimated Workers”.</p>							



**Table 10: Estimated Food Security Effects of Proposed Increases in the Federal Minimum Wage**

<b>Panel A: Households</b>								
	<b>Proposed Increase</b>	<b>Total affected as fraction of workers</b>	<b>Estimated Coefficient</b>	<b>Pred. Change in Food Security</b>	<b>Predicted Food Security</b>	<b>Total Households</b>	<b>Food Secure Households</b>	<b>Change in Food Security</b>
Current/2012	\$7.25				0.855	121,546,000	103,914,000	
2013	\$8.20	0.110	0.132	0.015	0.870	122,848,000	106,818,000	2,904,000
2014	\$9.15	0.166	0.132	0.022	0.891	124,151,000	110,671,000	3,853,000
2015	\$10.10	0.234	0.132	0.031	0.922	125,453,000	115,707,000	5,036,000
Cumulative Total								11,793,000
<b>Panel B: Individuals</b>								
Current/2012	\$7.25				0.841	308,361,000	259,395,000	
2013	\$8.20	0.110	0.132	0.015	0.856	311,217,000	266,251,000	6,856,000
2014	\$9.15	0.166	0.132	0.022	0.877	314,074,000	275,576,000	9,325,000
2015	\$10.10	0.234	0.132	0.031	0.908	316,931,000	287,870,000	12,294,000
Cumulative Total								28,475,000
<p>Notes: The proposed increases are based on Congressman George Miller’s three proposed increases in The Fair Minimum Wage Act (H.R. 1010). Columns 2 and 6 come from Appendix Table 2 in David Cooper and Doug Hall, “Raising the Federal Minimum Wage to \$10.10 Would Give Working Families, and The Overall Economy, a Much-Needed Boost.” Economic Policy Institute, March 13, 2013. <a href="http://www.epi.org/publications/bp357-federal-minimum-wage-increase/">http://www.epi.org/publications/bp357-federal-minimum-wage-increase/</a>. Estimated Coefficient is the relationship between a change in a state’s food security and its share of household head that have hourly earnings between the current and new minimum wage. Predicted Change in Food Security is the product of the estimated coefficient (Panel A, Table 6) and the total affected as a fraction of workers. Predicted Food Security is constructed by taking the Economic Research Service/USDA’s estimated three year average (2010-12) of household and individual food security and adding the predicted changes in food security (Column 5). Table 2, <i>Household Food Security in the United States in 2012, ERR-15</i>, Economic Research Service/USDA. The number of food secure households is the product of the predicted food security and estimated total number of households (individuals). The Change in Food Security is the difference between the number of households/individuals that are secure for each proposed increase.</p>								

**Table 11: Estimated Effects of Proposed Minimum Wage Increase, Fully Phased-In, by State**

State	% Total Affected	Pred. Percentage Point Change in Food Security	2010-12 Food Security	Pred. Food Security
<b>Arkansas</b>	30.4%	4.0%	85.1%	89.1%
<b>Mississippi</b>	28.2%	3.7%	83.3%	87.0%
Montana	28.1%	3.7%	85.9%	89.6%
<b>Louisiana</b>	27.5%	3.6%	84.3%	87.9%
<b>South Carolina</b>	27.2%	3.6%	84.6%	88.2%
<b>Kentucky</b>	27.1%	3.6%	84.4%	88.0%
<b>West Virginia</b>	27.1%	3.6%	88.8%	92.4%
<b>North Carolina</b>	27.0%	3.6%	83.4%	87.0%
<b>Texas</b>	27.0%	3.6%	81.6%	85.2%
<b>Tennessee</b>	26.6%	3.5%	83.8%	87.3%
Idaho	26.5%	3.5%	87.4%	90.9%
Michigan	26.5%	3.5%	86.6%	90.1%
Ohio	26.1%	3.4%	83.9%	87.3%
South Dakota	26.1%	3.4%	87.1%	90.5%
<b>Alabama</b>	26.0%	3.4%	87.9%	91.3%
<b>Oklahoma</b>	<b>25.8%</b>	<b>3.4%</b>	<b>84.7%</b>	<b>88.1%</b>
Indiana	25.1%	3.3%	87.0%	90.3%
Kansas	24.7%	3.3%	85.6%	88.9%
New Mexico	24.5%	3.2%	87.9%	91.1%
Utah	24.3%	3.2%	85.2%	88.4%
Missouri	24.2%	3.2%	79.1%	82.3%
Iowa	24.1%	3.2%	86.5%	89.7%
Wisconsin	23.9%	3.2%	85.8%	89.0%
<b>Florida</b>	<b>23.8%</b>	<b>3.1%</b>	<b>85.2%</b>	<b>88.3%</b>
<b>Georgia</b>	<b>23.8%</b>	<b>3.1%</b>	<b>83.1%</b>	<b>86.2%</b>
Maine	23.5%	3.1%	88.6%	91.7%
Arizona	23.4%	3.1%	80.3%	83.4%
California	23.4%	3.1%	84.4%	87.5%
Nebraska	23.2%	3.1%	83.0%	86.1%
Nevada	23.0%	3.0%	91.3%	94.3%
<b>Delaware</b>	<b>22.7%</b>	<b>3.0%</b>	<b>88.0%</b>	<b>91.0%</b>
Rhode Island	22.3%	2.9%	84.6%	87.5%
Pennsylvania	22.2%	2.9%	87.7%	90.6%
New York	22.1%	2.9%	84.8%	87.7%
Illinois	22.1%	2.9%	85.7%	88.6%
<b>Virginia</b>	<b>20.8%</b>	<b>2.7%</b>	<b>87.3%</b>	<b>90.0%</b>
Hawaii	20.7%	2.7%	86.0%	88.7%

<b>State</b>	<b>% Total Affected</b>	<b>Pred. Percentage Point Change in Food Security</b>	<b>2010-12 Food Security</b>	<b>Pred. Food Security</b>
Minnesota	19.9%	2.6%	89.4%	92.0%
Wyoming	19.5%	2.6%	86.2%	88.8%
Oregon	19.4%	2.6%	86.4%	89.0%
North Dakota	19.2%	2.5%	86.8%	89.3%
Vermont	19.2%	2.5%	90.8%	93.3%
New Jersey	19.0%	2.5%	90.1%	92.6%
Colorado	18.8%	2.5%	85.9%	88.4%
New Hampshire	18.8%	2.5%	86.6%	89.1%
<b>Maryland</b>	<b>17.7%</b>	<b>2.3%</b>	<b>87.0%</b>	<b>89.3%</b>
Connecticut	17.7%	2.3%	86.6%	88.9%
Massachusetts	17.4%	2.3%	85.1%	87.4%
Washington	15.8%	2.1%	85.4%	87.5%
Alaska	15.8%	2.1%	82.1%	84.2%
DC	11.5%	1.5%	88.4%	89.9%
<b>Average</b>	<b>23.0%</b>	<b>3.0%</b>	<b>85.8%</b>	<b>88.8%</b>

Notes: % Total Affected is the ratio of Total Affected Workers and Total Estimated Workers. The estimates are based on the fully phased in increase from \$7.25 to \$10.10. The Affected number of workers comes from Columns 2 and 6 come of Appendix Table 2 in David Cooper and Doug Hall, "Raising the Federal Minimum Wage to \$10.10 Would Give Working Families, and The Overall Economy, a Much-Needed Boost." Economic Policy Institute, March 13, 2013. <http://www.epi.org/publications/bp357-federal-minimum-wage-increase/>. Predicted Percentage Point Change in Food Security is the product of the estimated coefficient (Panel A, Table 6) and each state's total affected as a fraction of workers. Predicted Food Security is constructed by taking the Economic Research Service/USDA's estimated three year average (2010-12) of household and individual food security and adding the predicted changes in food security (Column 5). Table 2, *Household Food Security in the United States in 2012, ERR-15*, Economic Research Service/USDA.

## ENDNOTES

<sup>1</sup> See, for example, Brown, Gilroy and Kohen (1982), Katz and Krueger (1992); Neumark and Wascher (1992); Card and Krueger (1995); Lang and Kahn (1998); Partridge and Partridge (1998); De Fraja (1998); Burkhauser et al (2000); and Zavodny (2000).

<sup>2</sup> A simple calculation can show that these estimates yield an increase in the income of low-wage workers. Suppose that each 10 percent increase in the minimum wage produced job losses of 1 percent for minimum wage workers. Using this estimate, a simple back-of-the-envelope calculation shows that with a 90 cent increase in the minimum wage, 98 percent of the 11 million workers between \$4.25 and \$5.15 get a raise and only 2 percent have to look for new jobs. Given the high turnover rates in these jobs, spells of unemployment should be quite short. Furthermore, the net gain for the economy will be even greater if effort is tied to wages, because productivity will improve.

<sup>3</sup> See, for example, Burkhauser and Sabia (2007), Neumark and Wascher (2002), Leigh (2007), Neumark et al (2005), Page et al (2005), and Burkhauser and Sabia (2010).

<sup>4</sup> The Cornell Division of Nutritional Sciences developed one of the first surveys. Its questions were designed from actual experiences of hunger documented by working-age women in upstate New York. This survey became a precursor to the Current Population Survey (CPS) Food Security Supplement.

<sup>5</sup> See, for example, Kendall et al (1995, 1996), Frongillo et al (1997b), and Hamilton et al (1997).

<sup>6</sup> For illustration, suppose the survey questions are ordered from least severe to most severe. Hamilton et al conclude that if a household gives  $n$  affirmative responses (i.e. reports  $n$  types of behaviors related to food insecurity), then the affirmative responses can be presumed to have come from the  $n$  *least severe* questions (i.e. the first  $n$  questions) on the list. Thus, households that give *numerically* more affirmative responses can be presumed to have experienced *qualitatively* more severe behaviors relevant to food insecurity and hunger.

<sup>7</sup> Studies that continued to focus on employment effects continued to find small negative effects. See, for example, Addison et al. (2009).

<sup>8</sup> An earlier study by Bernstein and Brocht (2000) found similar results. They show that 71 percent of the beneficiaries would be adults and 60 percent would be women. Even though blacks and Hispanics collectively make up 23 percent of the workforce, they would comprise 35 percent of the beneficiaries.

<sup>9</sup> See Deaton and Muellbauer (1980) for a detailed discussion of household production theory.

<sup>10</sup> Stigler and Becker (1977) have utilized this model to explain choices between goods in differing observable characteristics (e.g., quality), addiction, the existence of habits and customs, the effects of advertising on behavior, and fashions and fads.

<sup>11</sup> Production functions for other features of meals, such as taste, can be easily developed.

<sup>12</sup> Note that the time constraint has been incorporated into the budget constraint.

<sup>13</sup> This model can be generalized to have multiple thresholds. For example, in 2005, the USDA abandoned the use of “Hunger” and shifted to “Low Insecurity” and “Very Low Insecurity”. These could be represented by different thresholds.

<sup>14</sup> A variety of studies has shown that individuals and families at the lowest part of the earnings and income scales experienced the largest benefits of the extremely tight labor markets of the 1990s. See, for example, Freeman and Rodgers (2000), Hines, Hoynes and Krueger (2002).

<sup>15</sup> Estimates that correspond to a dummy variable (e.g., race, educational attainment, marital status, urban or public sector) measure the difference relative to the excluded group.

<sup>16</sup> An earlier version of this manuscript estimated non-linear estimates of the hourly wage and food security relationship. Instead of specifying the hourly wage as a linear function, a vector of dummy variables, each of which represents a certain range for the wages earned by household heads, is used to describe the wage-food security relationship. The omitted category is the range of wages in excess of \$15.37 per hour. Non-linear relationships do exist: the food security-wage relationship typically has a U-shape. In the 1995 to 1999 data, as we move from less than \$4.25 to \$5.14 per hour, the food security gap between earners in the given wage interval and the highest wage earners expands, peaking at the \$5.15 to \$5.74 and \$5.75 to \$6.24 categories. From \$6.25 to \$15.37, the food security gap narrows. The pattern is well observed among all groups, except single parents. We speculate that households headed by workers with wages below \$4.25 have access to other forms of income. For example, they may receive support from social safety nets. In the 2005 to 2011 data, I still obtain a similar pattern; however, relationship is flatter as shown in Table 3.

<sup>17</sup> The unadjusted difference between urban and suburban householder food security has a similar pattern. During the 1995 to 1999 period, suburban and urban householders had similar levels of food security in 1995 (85.0% and 86.3%). From 1996 to 1998, a 3 to 4 percentage point advantage emerged for suburban householders, but it vanished in 1999. Both have food security rates of 91%. From 2005 to 2011, the suburban householder food security rate was 86.2% compared to 85.8 percent for urban householders. By 2011, the suburban rate had fallen to 83.5%, compared to a decline to 81.8% for urban householders.

<sup>18</sup> The USDA highly recommends that the best approach to creating state-level measures of food security is to pool adjacent years.

<sup>19</sup> The 0.254 or 25.4 percent represents California’s average across the two periods. From 2005 to 2011, 33.3 percent of California householders with income less than \$12,500 were affected by the increase in the minimum wage. If this estimate is used, then food security would increase by 4.4 percentage points.

<sup>20</sup> The detailed estimates for all models are available upon the author.

<sup>21</sup> The estimates come from Table 2, *Household Food Security in the United States in 2012, ERR-15*, Economic Research Service/USDA.

