WORKING POOR IN AMERICA

THE NUMBERS BEHIND THE MAP

THIS METHODOLOGY EXPLAINS THE PROCESS USED TO ESTABLISH THE NUMBER OF "WORKERS LIKELY TO BE AFFECTED BY A MINIMUM WAGE INCREASE TO $10.10" BY CONGRESSIONAL DISTRICT

Economist David Cooper conducted the research that is the basis for Oxfam's online interactive map (www.oxfamamerica.org/workingpoormap) and report (*Working Poor in America*).

The research draws on three years of microdata from the 2010 to 2012 American Community Survey (ACS). The ACS microdata do not contain a Congressional district identifier; the smallest geographic unit of analysis in the ACS is the Public Use Microdata Area (PUMA). Thus, in order to produce estimates by Congressional district, we assign observations to Congressional districts using a crosswalk from the Missouri Census Data Center.

This crosswalk provides the population shares from each PUMA that reside within each Congressional district. For PUMAs that are entirely contained within one Congressional district, the observations are simply assigned to that district. For PUMAs that contain or cross into more than one Congressional district, observations are assigned using a semi-random assignment, based upon the population share of the PUMA in each applicable Congressional district. This population share is set as the baseline probability of any given observation within the PUMA being in a particular Congressional district. Then, using published ACS tables on the population in each Congressional district by age, race, and education level, that baseline probability is weighted by the relative frequencies of persons with matching age, race, and education levels across the applicable Congressional districts.

We calculate the number of workers likely to be affected by an increase in the minimum wage to $10.10 per hour as those workers with an hourly wage estimated to be between $7.00 per hour and $11.50 per hour. Hourly wage values are imputed based upon each worker's reported annual income from wages, usual hours worked per week, and weeks worked per year. In the ACS data, workers' reported weeks worked per year is stored as an ordinal variable (e.g., 1-13 weeks per year, 14-26 weeks per year, etc.) making it more difficult to calculate an hourly wage. Using data from the Current Population Survey, Annual Social and Economic Supplement, we use a regression model of standard demographic and labor market variables to predict the discrete number of weeks worked per year for workers within each

ordinal bracket. The estimators from this model are then applied to the ACS data to impute a discrete *weeks worked per year* for all workers, allowing us to calculate an hourly wage.

The majority of workers likely to receive a raise from an increase in the minimum wage to $10.10 are those earning between $7.25 and $10.10; however **some workers earning just above the proposed new minimum of $10.10 are also likely to receive a wage increase as employers adjust wages to preserve internal pay ladders.** We set a lower bound on the affected wage range of $7.00 in order to account for workers whose calculated hourly wage value falls slightly below $7.25 in the imputation process. Workers with calculated wages below $7.00 are excluded because whatever factors are keeping their wage below the statutory minimum—e.g., training wages, tipped wages, wage theft, lack of coverage under the Fair Labor Standards Act—are likely to preclude them from being affected by any minimum wage increase.

It is important to note that, due to the relatively small sample sizes for ACS data for Congressional districts, **the margin of error for the data used in the map is large enough that differences of a few tenths of a percentage point may not be statistically significant**. The rankings give a general sense of which districts have a higher percentage of workers who would benefit from a $10.10 minimum wage. For example, we would rank, in order, districts with 27.0 percent, 26.7 percent, and 26.4 percent of workers who would see a benefit from an increase; however, the differences may be negligible.

It is also important to note that the estimates produced in this analysis will differ somewhat from other published estimates of the number of workers likely to be affected a minimum wage increase to $10.10. In this analysis, we estimate roughly 25.1 million workers nationally will receive a raise under an increase in the federal minimum wage to $10.10. This is in line with the Congressional Budget Office's estimate of likely-affected 24.5 million workers (16.5 million with wages below $10.10 and another 8 million with wages between $10.10 and $11.50). However, it is somewhat lower than the Economic Policy Institute's previous estimate of 27.8 million likely-affected workers and the White House estimate of 28 million workers (more than 19 million below $10.10 and 8 million just above).

The difference arises from several factors. First, EPI's estimate takes into account projections for population growth and wage growth that will affect the number of likely-affected workers. For simplicity's sake, and to avoid making assumptions about population and wage growth at the Congressional-district level, no such adjustments were made in this analysis. Second, EPI's estimate was made using data from the Current Population Survey (CPS). Admittedly, the CPS is a more robust source for data on hourly wages; however, the sample size for the CPS is far too small to produce statistics at the Congressional district level—only the ACS' sample of more than three million housing units each year provides an adequate number of observations for producing estimates at the Congressional district level. Finally, the CPS data used for EPI's estimate is slightly more recent than the data used in this analysis, because CPS microdata is released monthly in the month following the data's collection, whereas ACS data is only available annually, roughly nine months after the final month of data collection. This difference in the data's reference period will also affect the estimates.