Balancing paychecks and public assistance

How higher wages would strengthen what government can do

BY **DAVID COOPER**

Table of contents

Introduction and key findings

Millions of Americans rely upon public assistance programs to help meet their basic needs. These programs provide a vital lifeline for individuals and families struggling to get by. Indeed, given rising costs of necessities such as child care, housing, and health care, many families' ability to achieve a modest but adequate standard of living requires resources earned on the job *and* assistance from government programs.[1]

However, for many workers in certain sectors, wages are so low that even those who work full time must rely heavily on government assistance to make ends meet. This suggests that low pay by many employers—facilitated by weakened or inadequate labor standards, such as a low minimum wage and outdated overtime regulations—is placing unwarranted demands on public resources. As corporations achieve extraordinarily high profit levels and executive pay reaches new heights, it is appropriate to question whether employers are effectively passing off a portion of their societal responsibilities on to taxpayers.

This report examines the utilization of public assistance among low-wage workers and their families. After a brief review of previous research, it presents data on program participation and transfer income receipt by working individuals' annual hours of work, hourly wage level, major industry of employment, and state. Then it examines how higher wages among workers at various wage levels affect utilization rates and benefit dollars received. Finally, it discusses policies that would raise wages and the effect these policies would have on public assistance utilization and overall program spending. It concludes that higher hourly wages for low- and middle-wage workers, achievable through a variety of labor-market policies, would unambiguously generate savings in government safety-net and income-support programs—savings that could be used to strengthen and expand anti-poverty programs or make critical public investments to boost productivity and grow the economy.

Key findings include:

- Most recipients of public assistance work or have a family member who works.

  - Among families or individuals receiving public assistance, the majority (66.6 percent) work or are in working families (families in which at least one adult in the household works). This number grows to 71.6 percent when focusing on non-elderly recipient families and individuals (those under age 65).

  - About 69.2 percent of all public assistance benefits received by non-elderly families or individuals go to those who work.

  - Nearly half (46.9 percent) of all working recipients of public assistance work full time (at least 1,990 hours per year).

- Working recipients of public assistance are concentrated at the bottom of the wage scale and in low-paying industries.

  - Roughly 60 percent of all workers in the bottom decile of wage earners (those paid less than $7.42 per hour) receive some form of government-provided assistance, either directly or through a family member. Similarly, over half (52.6 percent) of workers in the second decile of wage earners (those paid between $7.42 and $9.91 per hour) receive public assistance.

- Workers in the arts, entertainment, recreation, accommodation, food services, and retail trade industries are disproportionately represented among public assistance recipients. Workers in these industries receive even more disproportionate shares of program benefits, underscoring the particularly low wages in these industries.

- Raising wages for low-wage workers (defined as those in the bottom three wage deciles, who earn up to $12.16 per hour) would unambiguously reduce net spending on public assistance, particularly among workers likely to be affected by a federal minimum-wage increase.

  - Among workers in the bottom three wage deciles, every $1 increase in hourly wages reduces the likelihood of receiving means-tested public assistance by 3.1 percentage points. This means that the number of workers receiving public assistance could be reduced by 1 million people with a wage increase of just $1.17 an hour, on average, among the lowest-paid 30 percent of workers. These workers would see higher incomes, even as they no longer received public assistance.

  - For every $1 that wages rise among workers in the bottom three wage deciles, spending on government assistance programs falls by roughly $5.2 billion. This estimate is conservative, as it does not include the value of Medicaid benefits.

  - Raising the federal minimum wage to $12 per hour by 2020 would reduce means-tested public assistance spending by $17 billion annually. These savings could fund a variety of improvements to government anti-poverty tools, such as expanding the Earned Income Tax Credit (EITC) to childless adults, or provide funding for new education initiatives, such as improving access to preschool for children from low- and moderate-income families.

Background

The failure of regular, full-time employment to provide adequate levels of income is one of the many damaging consequences of the long-term stagnation of American workers' pay. Over the past generation, despite significant increases in labor productivity, inflation-adjusted hourly pay for the vast majority of American workers has either stagnated or declined. This is the result of deliberate policy choices that have reduced workers' ability to negotiate higher pay, and that have allowed capital owners and corporate managers to extract an increasing share of the income generated by American workers (Bivens et al. 2014). As a result, living standards for the typical American household have been largely unchanged since the late 1970s, with households working increased hours yet taking home little more in inflation-adjusted pay.

Persistent wage stagnation has also hamstrung efforts to reduce poverty, even as key elements of the tax-and-transfer system have expanded in recent decades. Since the early 1990s, policymakers have reformed and expanded some poverty alleviation programs, yet they have increasingly tied these programs to work. Unfortunately, at the same time, policy decisions made on behalf of those with the most income, power, and wealth have limited workers' ability to attain higher pay (Bivens et al. 2014). As a result of these policy choices—which are discussed in Mishel and Eisenbrey (2015)—expansions to post-tax aid programs have largely only offset the decline in pre-tax earnings (Gould, Davis, and Kimball 2015).

By preventing stronger wage growth, these policies have increased reliance on public assistance programs. Consider the policy decision to neglect the federal minimum wage: Infrequent and inadequate adjustments have left the minimum wage significantly below its inflation-adjusted peak in 1968. At that time, a full-time minimum-wage salary could keep a family of three out of poverty. Today, a full-time worker paid the federal minimum wage is not paid enough to keep a family of two out of poverty. Consequently, these families often depend on public assistance programs to make ends meet.

Review of previous literature

There is relatively little research into how increases in hourly wages among low-wage workers, typically through increases in minimum wages, affect government spending and participation in public assistance programs. While the minimum wage is one of the most studied topics in economics, this research has focused primarily on how minimum-wage policies affect employment; see Kuehn (2014), Schmitt (2013), or Belman and Wolfson (2014) for a summary. In recent years, some researchers have looked more closely at how increases in the minimum wage have affected family incomes and poverty rates. Dube (2013) provides an extensive survey of this literature and conducts his own analysis of Current Population Survey data. Consistent with most past research, he finds that increases in minimum wages significantly reduce poverty rates and increase family incomes, particularly for low-income families. He does not describe specific effects on income from non-wage sources, such as public assistance programs.

More recently, the Congressional Budget Office (CBO) examined the potential effects of a federal minimum-wage increase to $10.10 (CBO 2014). While there is some debate over the CBO's estimates of employment effects—see Bernstein (2014) or Shierholz and Cooper (2014)—CBO estimated that raising the federal minimum wage to $10.10 would increase family incomes of workers below the federal poverty line by $5 billion and lift incomes of workers between one and three times the poverty line by $12 billion. CBO predicts that such an increase would lift 900,000 people above the federal poverty line.

CBO notes that these increased earnings would result in higher tax revenue and reduced spending on certain means-tested federal assistance programs, although they do not detail the predicted effects upon individual programs. They also predict that the government would face some additional direct costs from increased wages to a small number of government employees, and possibly a small increase in purchasing costs of certain goods and services if producers raised prices in response to the wage hike. CBO predicts that federal expenses would initially go down, but could later increase if the higher minimum wage has a significant negative effect on employment. On net, they conclude that "it is unclear whether the effect for the coming decade as a whole would be a small increase or a small decrease in budget deficits."[2] It is important to note that the CBO's ambiguity on this point is driven by their atypically high estimates of the probability of significant employment loss stemming from such an increase. If employment loss is insignificant (as most research on a minimum-wage increase of this magnitude indicates), the budget savings would surely dominate.

Other researchers have attempted to quantify the anticipated savings to government transfer programs from changes in federal wage standards. Giannarelli, Morton, and Wheaton (2007) used a microsimulation model of all U.S. tax, transfer, and health programs to estimate the effects of a package of labor and anti-poverty policies, including raising the federal minimum wage from $5.15—its level in 2007—to $7.25. They estimated that such an increase would decrease transfer costs or raise federal revenues by the equivalent of $2.5 billion in 2014 dollars. They also simulated raising the

minimum wage to half the average wage of production, nonsupervisory employees—at that time, equal to $8.40—and estimated it would reduce transfer costs or raise revenues by $14.8 billion in 2014 dollars.

Zabin, Dube, and Jacobs (2004) examined utilization of California's 10 major means-tested public assistance programs among working families. They found that more than half of the state's spending on public assistance goes to "working families," defined as families where at least one family member worked at least 45 weeks out of the year. Using a microsimulation approach, they estimated that if the state raised its minimum wage from $6.75—where it stood at that time—to $8 per hour (an 18.5 percent increase), state public assistance payments would fall by $2.7 billion ($3.3 billion in 2014 dollars).

More recently, a number of researchers have examined how low wages and the minimum wage interact with utilization of specific transfer programs or utilization in particular states or industries. West and Reich (2014a) look specifically at the effect of past minimum-wage increases on Supplemental Nutrition Assistance Program (SNAP) enrollments and expenditures. They use a regression framework that exploits state variation in minimum-wage levels over a 12-year period from 1990 to 2012 to measure how changing minimum-wage levels affected SNAP participation. They find that "a 10 percent increase in the minimum wage reduces SNAP enrollment by between 2.4 and 3.2 percent and reduces program expenditures by 1.9 percent." Based on these findings, they conclude that an increase in the federal minimum wage to $10.10 would reduce SNAP enrollments by up to 3.8 million persons, and decrease program expenditures by nearly $4.6 billion. Because both the proposed minimum-wage level and the SNAP eligibility level are indexed for inflation, these savings would total $46 billion over the 10-year budget window.[3]

West and Reich (2014b) also consider how increasing the federal minimum wage would affect participation in Medicaid. In particular, they note that the availability of federal funding for states that expanded Medicaid through the Affordable Care Act (ACA) provides a unique opportunity for these states to generate budgetary savings by increasing the minimum wage. Under the traditional framework for Medicaid, states split Medicaid costs evenly with the federal government, but only individuals with very low levels of income could qualify. The ACA encourages states to expand eligibility for Medicaid to individuals with higher levels of income by initially providing 100 percent federal funding for these newly eligible participants, and 90 percent funding in later years. The authors explain that by raising minimum wages, the incomes of many Medicaid beneficiaries who previously qualified under traditional Medicaid will go up, pushing them into the range of expanded eligibility under the ACA. When this happens, states' responsibility for costs for these participants will shift almost exclusively to the federal government. West and Reich estimate that raising the federal minimum wage to $10.10 would effectively shift $2.5 billion per year from state to federal balance sheets.

Allegretto et al. (2013) looked specifically at receipt of public assistance among workers in the fast food industry. They found high rates of take-up among front-line fast food workers, with more than half of the families of such workers utilizing public assistance, compared with 25 percent of the workforce as a whole. While the authors do not attempt to simulate any effect on assistance payments from raising wages in the industry, they estimate that taxpayers spend $7 billion annually in public assistance programs for families of these low-paid workers.

Finally, Sawhill and Karpilow (2014) discuss how increasing the federal minimum wage to $10.10 could more than offset the cost of expanding the EITC to childless adult workers. The authors calculate that in the interaction between an expanded EITC and higher wages resulting from an increase to the federal minimum wage, the net effect would be

increased tax revenues or reduced public assistance outlays of $1 billion. While they describe, in detail, the fiscal and social benefits that a tandem enactment of these policies would have, they do not elaborate on changes in participation rates or program benefit outlays for individual public assistance programs.

Incidence and value of government assistance benefits by annual hours of work, hourly wage decile, industry, and state

This report examines participation in eight federal and state means-tested programs for low-income families: EITC; the refundable portion of the Child Tax Credit (CTC); SNAP; the Low Income Home Energy Assistance Program (LIHEAP); the Supplemental Nutrition Program for Women, Infants, and Children (WIC); the Section 8 Housing Choice Voucher program; Medicaid; and the Temporary Assistance for Needy Families program (TANF) or equivalent state and local cash assistance programs.[4]

For all of these programs, eligibility is restricted to individuals with low total family incomes, often some percentage of the federal poverty line. Certain programs have additional requirements, such as the presence of young children in the family, income below some percentage of the median rental cost in the person's region, or total family assets below a certain threshold. Most programs also are designed to "phase out" as family incomes rise—i.e., as a family's income increases, benefits levels decrease at some proportional rate—such that higher labor earnings still result in a net increase in total (labor and non-labor) income. Medicaid eligibility, however, terminates above a specific income threshold.[5]

The EITC and CTC are slightly different. Qualifying beneficiaries of these wage-subsidizing tax credits will receive larger benefits as their wage income rises, up to a certain point. At that point, benefits plateau at a maximum amount for a set income range, and then begin to phase out beyond the maximum benefit range. Because of this structure, a low-income worker below the maximum benefit range could see her benefits increase as her wages went up, unless she experienced an income gain large enough to put her on the downslope of the phase-out range.[6]

Before analyzing the use of public assistance by working individuals, it is important to recognize that the majority of means-tested government income support goes to working families—i.e., families with at least one working family member within the household. As explained in Gould, Davis, and Kimball (2015), for better or worse, public assistance programs have become increasingly tied to work. **Table 1** shows participation in means-tested public assistance programs among elderly and non-elderly families and individuals, as well as participation by families' work status. The data show that 88.2 percent of families or individuals in non-family households who receive means-tested benefits are non-elderly families, and 93.4 percent of benefits (excluding Medicaid) go to non-elderly persons or families.[7] Among all families and individuals receiving benefits, two-thirds (66.6 percent) are either working or in working families. Focusing on non-elderly families and persons, 35.5 percent participate in at least one public assistance program. Importantly, the data show that nearly three-quarters (71.6 percent) of these participants are either working or in working families. Similarly, 69.2 percent of all public assistance benefits going to non-elderly families go to working families. (Note that the total benefits amount reported in subsequent tables is larger than reported in Table 1 because the subsequent analysis of working recipients includes elderly workers and those in elderly families.)

TABLE 1

Families and individuals receiving public assistance, by age of family head and family work status

	Total population		Families/individuals receiving public assistance*			Total benefits received	
	Number	Share of category	Number	Share of category	Rate of receipt	Dollar amount (in billions)	Share of benefits
Overall							
Elderly families or individuals not in family households	29,563,000	21.2%	5,229,000	11.8%	17.7%	$11.213	6.6%
Non-elderly families or individuals not in family households	109,680,000	78.8%	38,902,000	88.2%	35.5%	$158.801	93.4%
Total	139,243,000		44,131,000		31.7%	$170.013	
Among all families or individuals in non-family households							
Non-working families/individuals	42,216,000	30.3%	14,754,000	33.4%	34.9%	$49.025	28.8%
Working families/individuals	97,027,000	69.7%	29,376,000	66.6%	30.3%	$120.989	71.2%
Total	139,243,000		44,130,000		31.7%	$170.013	
Among non-elderly families or individuals in non-family households							
Non-working families/individuals	21,319,000	19.4%	11,050,000	28.4%	51.8%	$41.206	24.2%
Working families/individuals	88,361,000	80.6%	27,852,000	71.6%	31.5%	$117.595	69.2%
Total	109,680,000		38,902,000		35.5%	$158.801	

Note: This report focuses on utilization of means-tested public assistance; thus, it does not include Social Security or Medicare, as they are programs available specifically and universally for retired or elderly people. Figures reflect participation by individuals or a co-resident family member in EITC, CTC, SNAP, LIHEAP, WIC, housing assistance, TANF/cash assistance, and/or Medicaid. Data are adjusted to match administrative totals for each program. Elderly families are those in which the family head is age 65 or older. Working families are those in which at least one person is working.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

Utilization by annual hours of work

Inadequate levels of labor income can stem from both low hourly wages and a lack of adequate hours of work. **Table 2** shows the receipt and value of benefits among workers and their families by annual hours of work. Workers are grouped by those working less than 1,000 hours per year, 1,000–1,499 hours per year, 1,500–1,989 hours per year, and 1,990 hours or more, with this final category constituting regular full-time employment. As the table shows, roughly two-thirds of all wage earners work annual hours that would constitute full-time, year-round employment. Among these workers, 21.9 percent receive some form of public assistance, either directly or through a family member. This is lower

than the overall rate among all workers of 29.3 percent. In contrast, 46.6 percent of individuals working less than 1,000 hours per year receive some form of public assistance. Similarly, 42.9 percent of individuals working 1,000–1,499 hours per year (effectively "half time") receive some public assistance, as do 35.5 percent of individuals working 1,500–1,989 hours per year.

The distribution of beneficiaries also is informative. Individuals working less than 1,000 hours per year make up about 15 percent of all wage earners, although nearly one-fourth (23.7 percent) of workers who receive some form of public assistance, either directly or through a family member, fall into this group. Similarly, individuals working between 1,000 and 1,989 hours per year account for 22.0 percent of all workers, yet constitute 29.4 percent of all working public assistance beneficiaries. While it is not surprising that individuals with lower annual work hours are disproportionately represented among public assistance recipients, the share of working recipients who work full time is quite large, at 46.9 percent.

It is also illuminating to look at the distribution of beneficiaries across the various programs. Half of all working WIC and CTC beneficiaries work full time, as do 41.0 percent of working food stamp recipients and 38.0 percent of working Medicaid beneficiaries. The table also shows the distribution of program dollars by annual hours of work. Most of the benefit dollars are spread in roughly equal proportion to the share of beneficiaries in each work hour category, although EITC and CTC benefits predictably skew more heavily toward those working more hours.

It is worth noting that because of the structure of the data, with each individual record carrying the family's total benefit information, it is possible that some of the work hour statistics reflect the work hours of family members who do not directly receive support from the applicable program. (See Appendix A for further detail.) The extent to which this biases the results is unclear. Nevertheless, the large shares of individuals working full time whose families participate in these programs underscores the question of whether these programs are serving more as temporary support during times of financial stress—the original intent of many of these programs—or whether they have become permanent wage subsidies for workers paid unlivable wages.

Utilization by hourly wage level

Figure A shows the share of all wage earners within each hourly wage decile whose families receive public assistance.[8] As the figure shows, an estimated 29.3 percent of all wage earners receive benefits from at least one of the means-tested public assistance programs included in this study, either directly or through a family member in the household. Roughly 60 percent of all workers with hourly wages in the bottom decile (less than $7.42 per hour) receive benefits or have a family member receiving benefits—more than double the overall rate of receipt. Among workers in the second decile (whose hourly wages are between $7.42 and $9.91 per hour), just over half (52.6 percent) receive benefits either directly or through a family member. As expected, the rates of receipt decline steadily as hourly wages increase. (**Appendix Table B2** shows all data on program utilization and benefit amounts by wage decile.)

It is somewhat surprising that any workers with high hourly wages would show any receipt of public assistance. This is likely the result of the structure of the CPS-ASEC data, in which some households may contain both low-income/low-wage and higher-income/higher-wage tax units in the same family, such as a young adult living with his parents. In such cases, the data would show a higher-wage individual benefiting from the public assistance dollars of her low-wage family member when, in reality, the incomes of those individuals may be separate. In addition, some individuals who

TABLE 2

Usage of public assistance among workers and their families, by program and annual hours worked

| | | All | Annual hours worked | | | |
			Less than 1,000 hours	1,000–1,499 hours	1,500–1,989 hours	1,990+ hours
	Total wage-earning population	142,324,621	20,804,361	13,177,869	18,201,533	90,140,857
	Share	100.0%	14.6%	9.3%	12.8%	63.3%
Any means-tested assistance	Count	41,221,812	9,771,177	5,687,048	6,439,029	19,324,558
	Rate of receipt	29.3%	46.6%	42.9%	35.5%	21.9%
	Share of all working recipients	100.0%	23.7%	13.8%	15.6%	46.9%
	Total benefit dollars (in thousands)	$123,147,801	$28,896,140	$19,256,494	$22,285,767	$52,709,400
	Share of all assistance	100.0%	23.5%	15.6%	18.1%	42.8%
	Average value of benefits received	$3,281	$3,195	$3,657	$3,773	$3,045
Earned-Income Tax Credit (EITC)	Count	41,410,520	10,257,368	5,937,119	6,536,383	18,679,649
	Rate of receipt	29.4%	46.1%	42.8%	35.3%	21.7%
	Share of working EITC recipients	100.0%	24.8%	14.3%	15.8%	45.1%
	Total value of EITC benefits (in thousands)	$63,414,659	$10,690,813	$9,237,780	$12,040,618	$31,445,448
	Share of EITC benefits	100.0%	16.9%	14.6%	19.0%	49.6%
	Average value of benefits received	$1,531	$1,042	$1,556	$1,842	$1,683
Refundable Child Tax Credit (CTC)	Count	25,973,208	4,720,015	3,516,967	4,445,312	13,290,914
	Rate of receipt	18.7%	22.8%	26.4%	24.4%	15.4%
	Share of working CTC recipients	100.0%	18.2%	13.5%	17.1%	51.2%
	Total value of CTC benefits (in thousands)	$26,319,137	$3,424,339	$3,320,777	$4,760,353	$14,813,667
	Share of EITC benefits	100.0%	13.0%	12.6%	18.1%	56.3%
	Average value of benefits received	$1,013	$725	$944	$1,071	$1,115
Energy assistance (LIHEAP)	Count	2,346,126	808,687	385,621	420,000	731,819
	Rate of receipt	1.6%	3.9%	2.9%	2.3%	0.8%
	Share of working LIHEAP recipients	100.0%	27.4%	17.4%	20.6%	34.5%
	Total value of LIHEAP benefits (in thousands)	$741,902	$256,583	$125,207	$127,540	$232,573
	Share of LIHEAP benefits	100.0%	34.6%	16.9%	17.2%	31.3%
	Average value of benefits received	$316	$317	$325	$304	$318
Food stamps (SNAP)	Count	14,553,176	4,350,146	2,429,694	2,505,121	5,268,215
	Rate of receipt	10.4%	20.7%	18.4%	13.9%	6.0%

TABLE 2 (CONTINUED)

|			Annual hours worked			
		All	**Less than 1,000 hours**	**1,000–1,499 hours**	**1,500–1,989 hours**	**1,990+ hours**
	Share of working SNAP recipients	100.0%	22.5%	16.5%	19.9%	41.0%
	Total value of SNAP benefits (in thousands)	$42,022,284	$13,598,564	$7,392,912	$7,274,466	$13,756,342
	Share of SNAP benefits	100.0%	32.4%	17.6%	17.3%	32.7%
	Average value of benefits received	$3,221	$3,361	$3,304	$3,241	$3,044
Housing assistance	Count	1,914,503	755,761	347,385	326,713	484,644
	Rate of receipt	1.3%	3.6%	2.6%	1.8%	0.5%
	Share of working housing assistance recipients	100.0%	28.5%	19.8%	22.1%	29.6%
	Total value of housing benefits (in thousands)	$6,841,676	$2,941,165	$1,290,063	$1,086,720	$1,523,728
	Share of housing benefits	100.0%	43.0%	18.9%	15.9%	22.3%
	Average value of benefits received	$3,574	$3,892	$3,714	$3,326	$3,144
Medicaid	Count	13,414,627	4,068,022	2,160,551	2,085,655	5,100,399
	Rate of receipt	9.7%	19.7%	16.6%	11.8%	5.9%
	Share of working Medicaid beneficiaries	100.0%	30.3%	16.1%	15.5%	38.0%
TANF/cash assistance	Count	1,643,626	612,241	276,764	244,622	509,999
	Rate of receipt	1.2%	2.9%	2.1%	1.3%	0.6%
	Share of working TANF recipients	100.0%	31.5%	15.5%	19.5%	33.6%
	Total value of TANF benefits (in thousands)	$4,561,002	$1,677,833	$763,046	$759,675	$1,360,448
	Share of TANF benefits	100.0%	36.8%	16.7%	16.7%	29.8%
	Average value of benefits received	$2,695	$2,706	$2,681	$2,981	$2,551
Supplemental Nutrition for Women, Infants, and Children (WIC)	Count	2,099,495	660,924	342,484	383,483	712,605
	Rate of receipt	1.5%	3.2%	2.6%	2.1%	0.8%
	Share of working WIC recipients	100.0%	16.8%	13.4%	19.3%	50.5%
	Total value of WIC benefits (in thousands)	$3,497,899	$718,987	$456,197	$578,956	$1,743,760
	Share of WIC benefits	100.0%	20.6%	13.0%	16.6%	49.9%
	Average value of benefits received	$736	$754	$766	$745	$719

Note: All shares reflect shares of working recipients. Receipt rates include benefits received directly by workers or indirectly through a family member. Because the data are adjusted to match administrative totals for each program, they must be weighted separately. Consequently, the implicit population totals from each receipt rate will not be consistent across programs, and program totals will not sum to the reported total for all programs. See Appendix A for further detail. Dollar figures are in 2014 dollars. The average value of benefits received is conditional upon receipt. The total benefit dollar amount in this table, and all subsequent ones, includes workers from both non-elderly and elderly families.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

The majority of workers in the bottom 20 percent rely on public assistance

Share of workers who receive public assistance directly or through a family member, by hourly wage decile
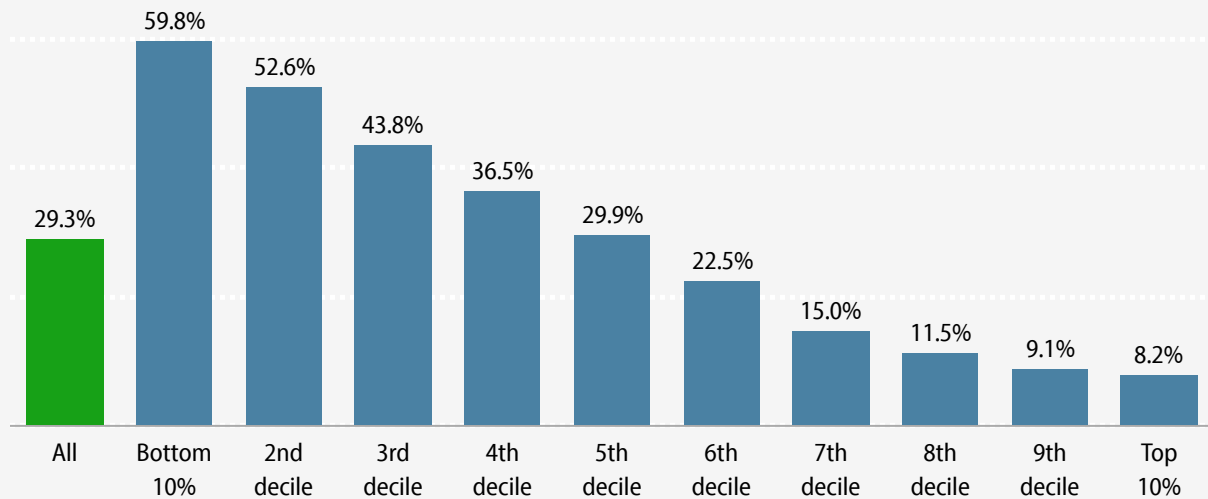
Note: Includes the EITC, CTC, SNAP, LIHEAP, WIC, housing assistance, TANF/cash assistance, and Medicaid.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

work only a small portion of the year may report relatively large wage income for those limited annual hours of work, resulting in an imputed hourly wage that is artificially high.
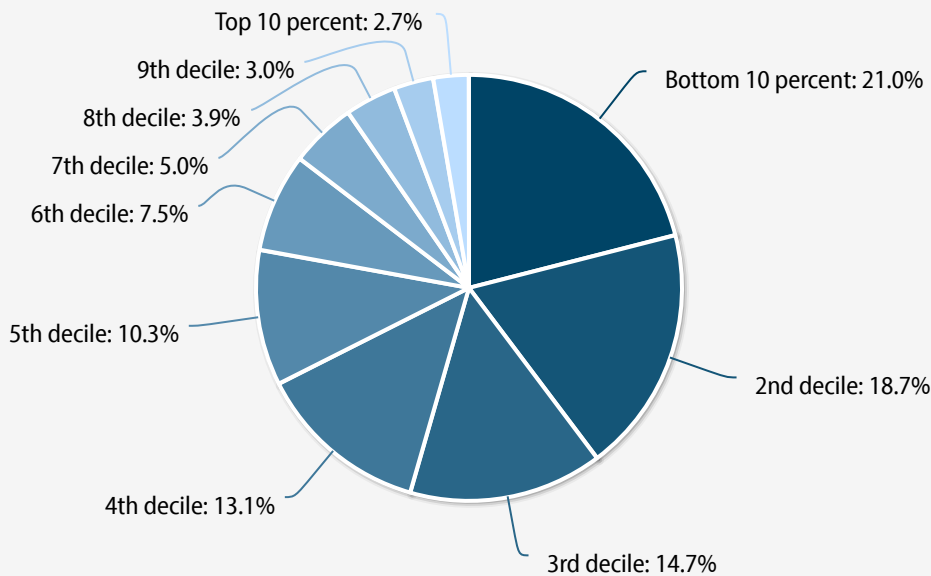
Nevertheless, even with these potential sources of error, the data still show that high-wage earners comprise a small share of working benefit recipients. As shown in **Figure B**, of all wage earners in families receiving public assistance, 77.8 percent have wages in the bottom half of the wage distribution. More than half (54.4 percent) have wages in the bottom 30 percent, and roughly 40 percent are in the bottom fifth of hourly wage earners.

Figure C shows the total value of public assistance benefits received by workers, either directly or through a family member, by the worker's hourly wage decile. Once again, the bulk of benefit dollars are going to workers with the lowest wages. Workers with wages in the bottom decile receive over $28 billion in benefits, while workers in the second decile—between the 10th and 20th percentiles—receive nearly $29 billion in benefits.[9] The percentages below each dollar figure are each decile's share of all benefit dollars received by workers and their families. Combining the bottom and second deciles, workers in the bottom fifth of the wage distribution—earning hourly wages of $9.91 or

Over three-fourths of all working public assistance recipients are in the bottom half of the hourly wage distribution

Distribution of workers receiving public assistance directly or through a family member, by hourly wage decile

Top 10 percent: 2.7%
9th decile: 3.0%
8th decile: 3.9%
7th decile: 5.0%
6th decile: 7.5%
5th decile: 10.3%
4th decile: 13.1%
3rd decile: 14.7%
Bottom 10 percent: 21.0%
2nd decile: 18.7%

Note: Includes the EITC, CTC, SNAP, LIHEAP, WIC, housing assistance, TANF/cash assistance, and Medicaid.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

less—receive just less than half (46.4 percent) of all public assistance dollars accruing to workers and their families. Fully 86.8 percent of all public assistance benefits going to working families go to workers with hourly wages in the bottom half of the wage distribution.

Utilization by industry

While there are workers who benefit from public assistance across all major industry groups, some industries have much greater numbers of workers receiving benefits and much higher rates of receipt. In **Figure D**, the green bar shows again that just over 29 percent of all workers have families receiving means-tested benefits. As the figure shows, workers in agriculture, forestry, fishing, and hunting have an exceptionally high rate of receipt: Half receive public assistance, either directly or through a family member. Workers in the arts, entertainment, recreation, accommodation, and food services industries have take-up rates of roughly 45 percent.[10] Retail trade, construction, the armed forces, and other services except public administration all show rates of receipt above the overall average of 29.3 percent. Workers in public administration have the lowest rate of utilization, with only 16.1 percent of workers receiving benefits.

FIGURE C

The bottom 20 percent account for nearly half of all public assistance benefits received by workers and their families

Total value of public assistance benefits received by workers directly or through a family member, by hourly wage decile (billions of 2014 dollars)
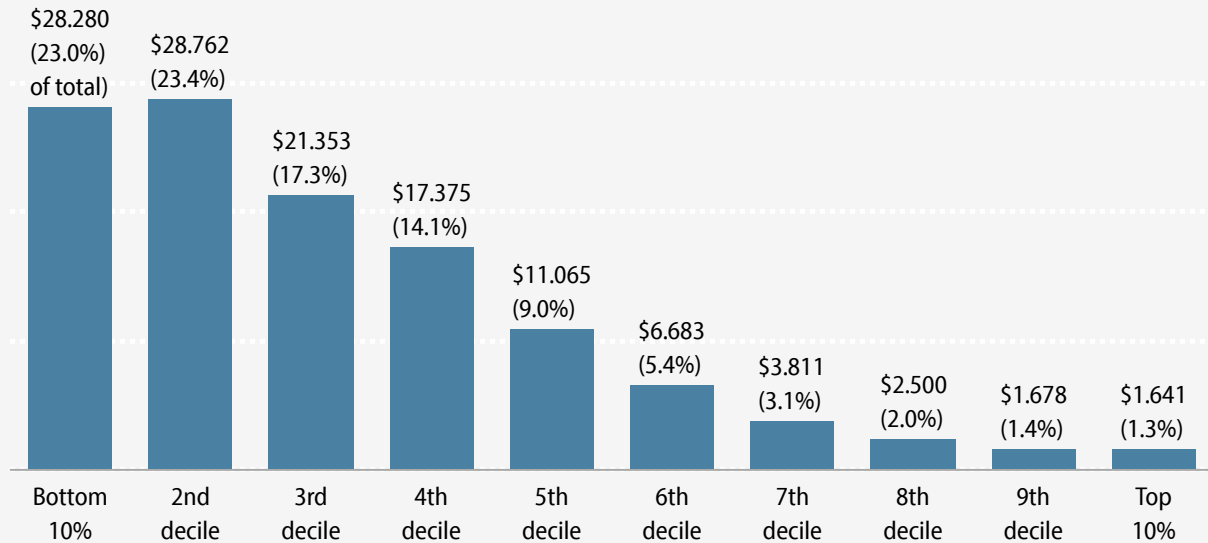
Note: Each decile's share of the total benefits going to workers and their families is listed in parentheses. Includes the EITC, CTC, SNAP, LIHEAP, WIC, housing assistance, and TANF/cash assistance. These data do not include the value of Medicaid. Values reflect reported benefits from all programs in this study received by workers or their families, but do not include administrative costs.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014
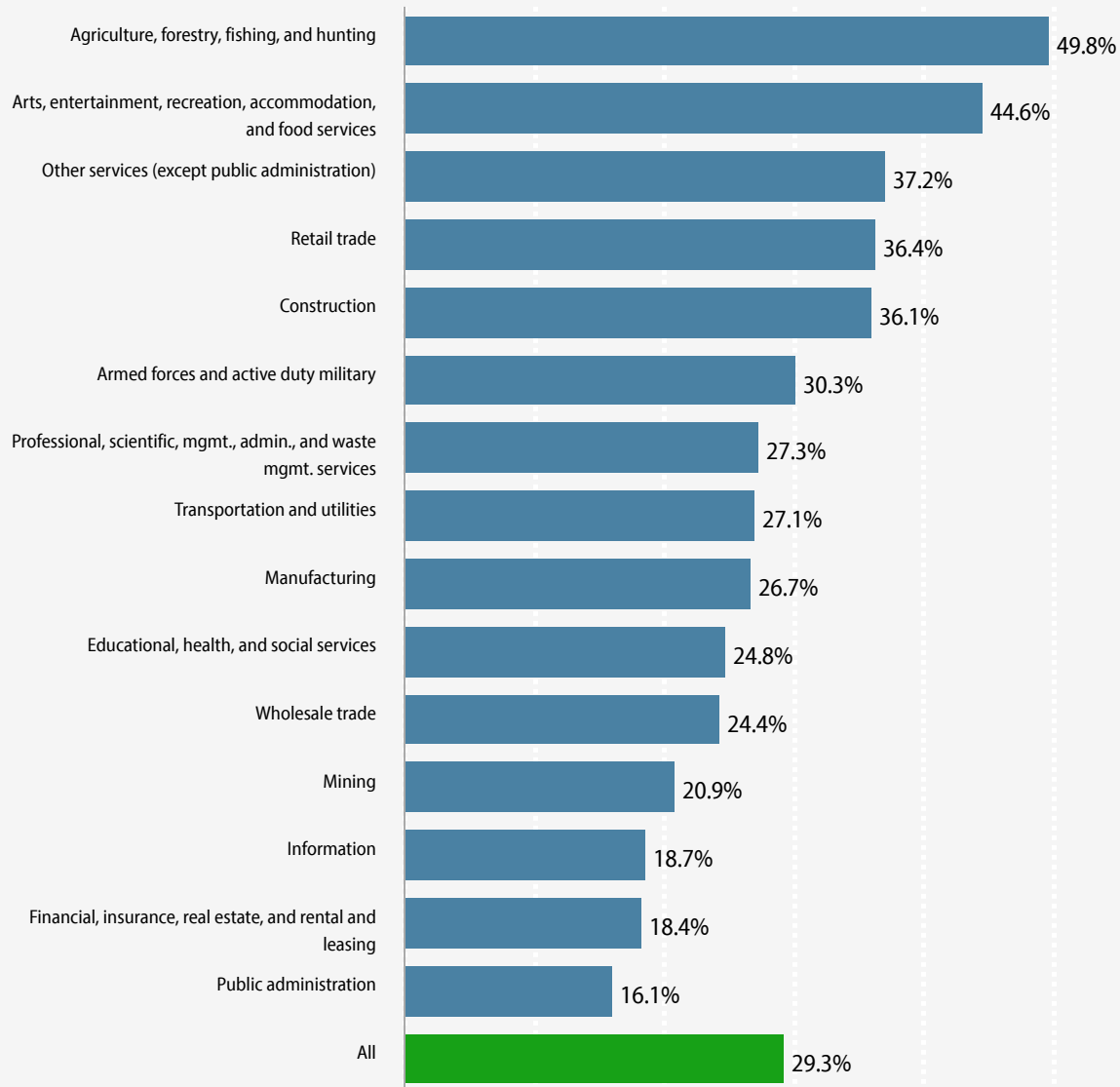
ECONOMIC POLICY INSTITUTE

Whereas Figure D showed rates of receipt within industries, **Figure E** shows the distribution of all wage earners receiving benefits across industries. The industry with the largest share of workers receiving benefits (either directly or through a family member) is educational, health, and social services, at 19.9 percent. However, this is also the largest industry category by far, containing roughly one-quarter (23.6 percent) of all wage earners in the sample—thus, their share of benefit recipients is actually disproportionately low. In contrast, retail trade combined with the arts, entertainment, recreation, accommodation, and food service industries contain almost one-third (30.5 percent) of all working public assistance recipients, despite accounting for just over one-fifth (21.9 percent) of the total workforce. (**Appendix Table B3** contains detailed breakdowns of program participation and employment shares by industry.)

Figure F shows the total value and share of public assistance dollars received by families of working individuals by the major industry employing each worker. Once again, the largest portion of benefit dollars goes to families of workers in education, health, and social services. Workers or families of workers in these industries receive nearly $25 billion

In several industries, over one-third of workers' families rely on public assistance

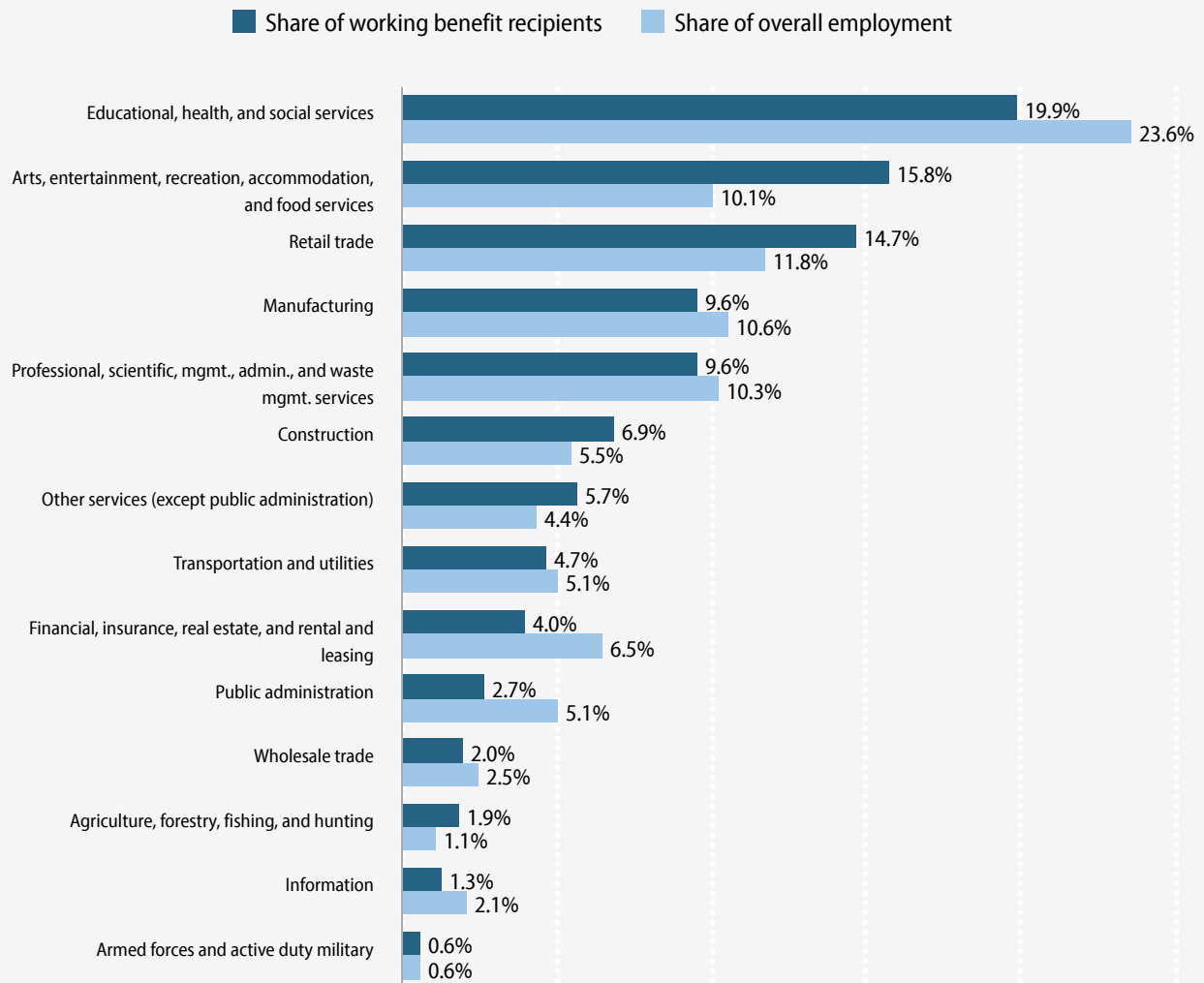*Share of workers within each industry who receive public assistance directly or through a family member*

Industry	Share
Agriculture, forestry, fishing, and hunting	49.8%
Arts, entertainment, recreation, accommodation, and food services	44.6%
Other services (except public administration)	37.2%
Retail trade	36.4%
Construction	36.1%
Armed forces and active duty military	30.3%
Professional, scientific, mgmt., admin., and waste mgmt. services	27.3%
Transportation and utilities	27.1%
Manufacturing	26.7%
Educational, health, and social services	24.8%
Wholesale trade	24.4%
Mining	20.9%
Information	18.7%
Financial, insurance, real estate, and rental and leasing	18.4%
Public administration	16.1%
All	29.3%

Note: Includes the EITC, CTC, SNAP, LIHEAP, WIC, housing assistance, TANF/cash assistance, and Medicaid.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

Workers in low-paying industries are overrepresented among public assistance recipients

Distribution of workers receiving public assistance directly or through a family member, by major industry

■ Share of working benefit recipients ■ Share of overall employment

Industry	Share of working benefit recipients	Share of overall employment
Educational, health, and social services	19.9%	23.6%
Arts, entertainment, recreation, accommodation, and food services	15.8%	10.1%
Retail trade	14.7%	11.8%
Manufacturing	9.6%	10.6%
Professional, scientific, mgmt., admin., and waste mgmt. services	9.6%	10.3%
Construction	6.9%	5.5%
Other services (except public administration)	5.7%	4.4%
Transportation and utilities	4.7%	5.1%
Financial, insurance, real estate, and rental and leasing	4.0%	6.5%
Public administration	2.7%	5.1%
Wholesale trade	2.0%	2.5%
Agriculture, forestry, fishing, and hunting	1.9%	1.1%
Information	1.3%	2.1%
Armed forces and active duty military	0.6%	0.6%

Note: Includes the EITC, CTC, SNAP, LIHEAP, WIC, housing assistance, TANF/cash assistance, and Medicaid.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

in public assistance, or 20.3 percent of all benefit dollars received by workers in the sample. However, this is a smaller percentage than their 23.6 percent share of the workforce. The two major industry groups with disproportionately large shares of workers receiving benefits—retail trade, and the arts, entertainment, recreation, accommodation, and food ser-

vice industries—also receive a disproportionately large 32.1 percent share of all benefit dollars going to workers (equal to roughly $39.5 billion). Note also that this share of benefit dollars exceeds these industries' share of recipients (30.5 percent), an indication that wages and incomes for workers in these industries are particularly low.

Utilization by state

Unsurprisingly, the states with the largest shares of the country's program beneficiaries are the most populous states: California, Texas, New York, Florida, and Illinois. However, as depicted in **Figure G,** the states with the highest rates of public assistance usage are primarily those in the South and Southwest: New Mexico, Mississippi, Arkansas, Arizona, and Louisiana. Southern states, in particular, tend to have lower wages and higher poverty rates (Cooper 2015b; BLS 2014). Accordingly, they receive disproportionate shares of public assistance dollars. For example, as shown in **Appendix Table B4,** Georgia accounts for 3.0 percent of U.S. workers, yet the state's workers receive 3.6 percent of all public assistance dollars going to workers. Similarly, Louisiana has 1.3 percent of the U.S. workforce and receives 1.9 percent of public assistance dollars going to workers. Mississippi contains 0.8 percent of the total working population, yet receives 1.4 percent of benefit dollars going to workers. These differences are not enormous, due in part to the fact that hourly wages have converged across the states over the past four decades.[11] Nevertheless, they do underscore the relationship between low hourly pay and greater reliance on public assistance. Moreover, because these figures only describe benefit dollars going to workers, they almost certainly understate the disproportionate share of all public assistance going to working and nonworking families in these states, as many of them also have lower overall rates of employment than those states with lower rates of public assistance receipt among workers.[12]

How higher wages would affect public assistance programs

This section examines how changes in hourly wages affect the participation rates and value of benefits received from means-tested public assistance programs. The analysis uses linear regression to isolate how receipt of public assistance by workers at one hourly wage compares with receipt by similar workers at different hourly wages. Because most programs have income restrictions, as hourly wages rise, program participation and costs generally decline. However, because some refundable tax credits—such as the Earned Income Tax Credit—are designed so that benefits increase, up to a point, as labor income rises, it is not theoretically obvious that increasing wages among all low-income workers would necessarily lead to a net reduction in overall public assistance spending.

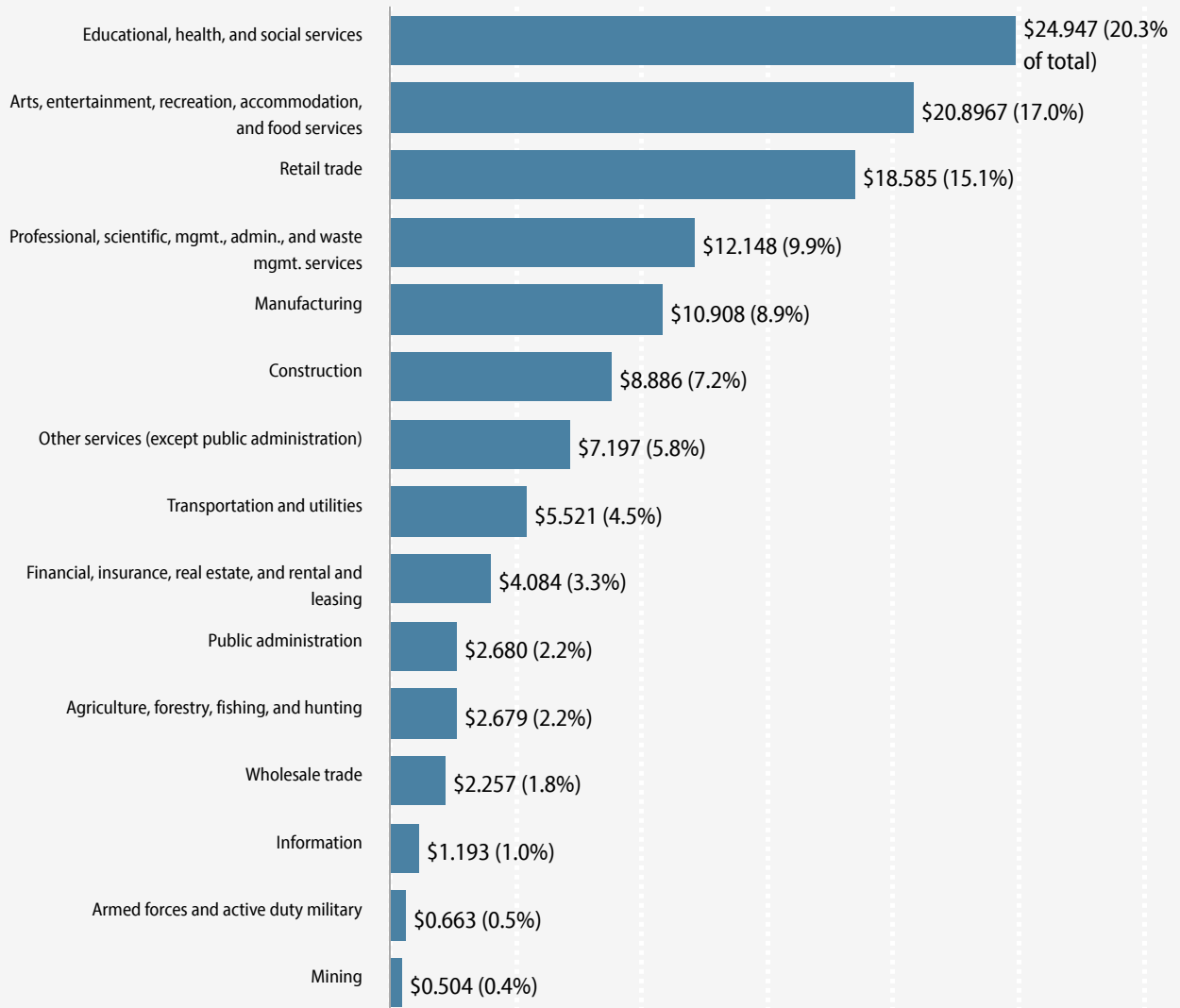### *Effects on the likelihood of receiving benefits*

Table 3 summarizes the results of this analysis.[13] Each column indicates the wage range these results describe; each row indicates the relevant public assistance program. The upper block of results shows how a $1 increase in hourly wages among workers in each wage range affects the likelihood that they (or their families) participate in the specified program.

The results in the first column, which describe workers in the bottom two deciles (with hourly wages up to $9.91), indicate that a $1 increase in hourly wages for a worker in this range reduces the likelihood that she receives any public assistance by 3.8 percentage points. This means that if this entire group of workers received, on average, a $1 per hour

Workers in three low-paying industries receive over half of worker public assistance dollars

Total value of public assistance benefits going to workers or their families, by major industry (billions of 2014 dollars)

Industry	Value
Educational, health, and social services	$24.947 (20.3% of total)
Arts, entertainment, recreation, accommodation, and food services	$20.8967 (17.0%)
Retail trade	$18.585 (15.1%)
Professional, scientific, mgmt., admin., and waste mgmt. services	$12.148 (9.9%)
Manufacturing	$10.908 (8.9%)
Construction	$8.886 (7.2%)
Other services (except public administration)	$7.197 (5.8%)
Transportation and utilities	$5.521 (4.5%)
Financial, insurance, real estate, and rental and leasing	$4.084 (3.3%)
Public administration	$2.680 (2.2%)
Agriculture, forestry, fishing, and hunting	$2.679 (2.2%)
Wholesale trade	$2.257 (1.8%)
Information	$1.193 (1.0%)
Armed forces and active duty military	$0.663 (0.5%)
Mining	$0.504 (0.4%)

Note: Each industry's share of the total benefits going to workers and their families is listed in parentheses. Includes the EITC, CTC, SNAP, LIHEAP, WIC, housing assistance, and TANF/cash assistance. These data do not include the value of Medicaid. Values reflect reported benefits from all programs in this study received by workers or their families, but do not include administrative costs.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

Southern and Southwestern states have the highest rates of public assistance usage among workers

Share of workers receiving public assistance directly or through a family member, by state
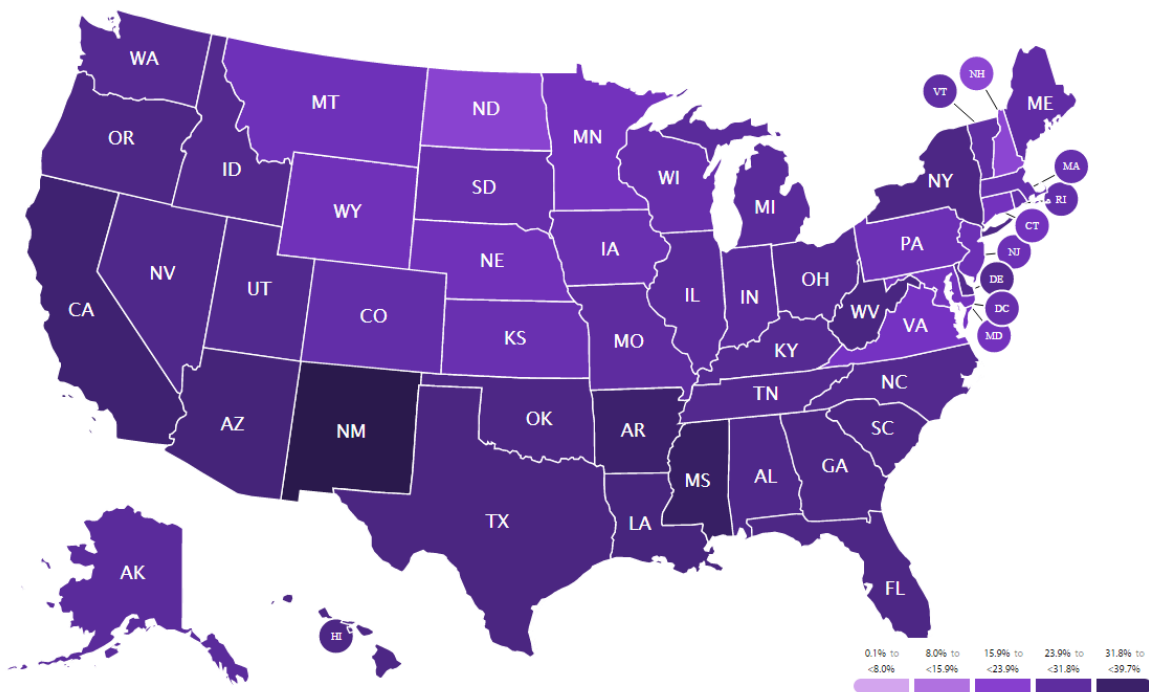
Note: Includes the EITC, CTC, SNAP, LIHEAP, WIC, housing assistance, TANF/cash assistance, and Medicaid. All shares reflect shares of working recipients. Because the data are adjusted to match administrative totals for each program, they must be weighted separately. Consequently, the implicit population totals from each rate of receipt will not be consistent across programs.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

raise, we would expect the share of this group needing to rely on public assistance to decline by 3.8 percentage points. With 15.5 million workers in this wage range, that translates to roughly 600,000 fewer people receiving benefits.

For each individual program, including the EITC, increasing hourly wages is expected to reduce the rate of program participation. Among those in the bottom two deciles, the magnitude of these effects ranges from a reduction of around 0.1 percentage points in the share receiving benefits from WIC or TANF to a reduction of 4.1 percentage points in the share receiving the EITC.[14] For SNAP, a $1 increase in hourly wages reduces the participation rate by 2.0 percentage points; for Medicaid, 1.3 percentage points; for LIHEAP, 0.4 percentage points; and for housing assistance, 0.3 percentage points. It is not surprising that the effects for TANF, WIC, housing assistance, and Medicaid are substantially smaller than the effect for the EITC—and to a lesser extent SNAP—simply because the share of workers participat-

TABLE 3

Effect of a $1 increase in hourly wages on receipt and value of public assistance benefits, by wage decile group

	Bottom two wage deciles (up to $9.91)	Bottom three wage deciles (up to $12.16)	Bottom four wage deciles (up to $14.72)	Third and fourth wage deciles ($12.16 to $14.72)	Fourth and fifth wage deciles ($14.72 to $17.62)
Percentage-point change in share of workers receiving benefits					
Any means-tested aid	-3.85***	-3.07***	-2.51***	-1.78***	-1.62***
Food stamps (SNAP)	-2.00***	-1.86***	-1.63***	-1.41***	-1.03***
Energy assistance (LIHEAP)	-0.39***	-0.41***	-0.32***	-0.24***	-0.26***
Earned Income Tax Credit (EITC)	-4.14***	-3.16***	-2.43***	-1.58***	-1.51***
Refundable Child Tax Credit (CTC)	-0.87***	-0.81***	-1.39***	-1.92***	-2.02***
Supplemental Nutrition for Women, Infants, and Children (WIC)	-0.14	-0.21***	-0.14***	-0.05***	-0.09***
Housing assistance	-0.32**	-0.28***	-0.27***	-0.25***	-0.12***
Medicaid	-1.32***	-1.03***	-0.94***	-0.88***	-0.62***
TANF/cash assistance	-0.07	-0.15***	-0.12***	-0.08***	-0.11***
Change in annual benefit dollars (per person)					
All means-tested government assistance	-$199.49***	-$189.50***	-$178.72***	-$174.67***	-$155.09***
Food stamps (SNAP)	-$93.45***	-$82.82***	-$66.08***	-$58.15***	-$40.46***
Energy assistance (LIHEAP)	-$2.45***	-$2.21***	-$1.29***	-$0.57***	-$1.01***
Earned Income Tax Credit (EITC)	-$75.68***	-$79.56***	-$88.26***	-$96.93***	-$99.20***
Refundable Child Tax Credit (CTC)	-$1.92	-$12.82***	-$21.16***	-$27.92***	-$28.98***
Supplemental Nutrition for Women, Infants, and Children (WIC)	-$3.96*	-$3.69***	-$1.49***	$0.62	-$2.15***
Housing assistance	-$13.66**	-$8.87***	-$10.59***	-$11.50***	-$4.38***
TANF/cash assistance	-$7.60	-$10.28***	-$3.72***	$2.40	-$5.75***
Number of workers in this range	15,530,000	27,540,000	40,710,000	25,190,000	26,060,000
Average hourly wage of workers in this range	$8.38	$9.52	$10.79	$12.28	$14.80

Note: The sample contains all wage earners who worked in the previous year with imputed hourly wage values in the noted range. In the lowest wage decile, there is a lower bound for valid wage values of $6.50 (90 percent of $7.25) to allow for some measurement error in imputed wage values near the federal minimum wage. All models include controls for age, age squared, age cubed, sex, race, worked part time at any point during the previous year, marital status, family size, presence of a disabled person in the household, number of children under 18, citizenship, metropolitan status, state, major industry, and major occupation category. Coefficient values are significant at *P<0.1, **P<0.05, ***P<0.01.

Source: EPI analysis of Current Population Survey Annual Social and Economic Supplement microdata, pooled years 2012–2014

ECONOMIC POLICY INSTITUTE

ing in each of these programs is considerably smaller. As expected, the largest impact for workers in this range is on the EITC, since the EITC has the highest rate of program participation for this group (about 60 percent) and overall (roughly 29 percent).

The second column describes a broader range of workers—those earning wages in the bottom three deciles, or up to $12.16 per hour. As the sample of workers expands to include those earning higher wages, the overall rate of program participation declines because, on average, higher wages lead to higher family incomes and reduced program eligibility. This, in turn, leads to an average effect that is smaller for this larger group than for the first two wage deciles. Yet because the pool of workers has expanded, a $1 average increase in wages for this larger group would still lead to a larger reduction in the number of people receiving public assistance. For every $1 increase in hourly wages for the roughly 27.5 million workers earning up to $12.16 an hour, the share relying on public assistance is predicted to decline by 3.1 percentage points, or approximately 850,000 people. An equivalent way to interpret these results is that the number of low-wage workers relying on public assistance could be reduced by 1 million people with a wage increase of $1.17 an hour, on average, among the lowest-paid 30 percent of workers.

Similar calculations can be made for the third column, which expands the sample of wage earners to include those in the fourth decile, who earn up to $14.72 per hour. Using the results for this group, a $1 average increase in hourly wages would reduce the share receiving means-tested benefits by about 2.5 percentage points. When multiplied by the 40.7 million workers in this range, this means just over 1 million fewer workers would receive benefits.

The fourth and fifth columns in the table are slightly different. Rather than describing effects at hourly wages up from the bottom of the distribution, they describe effects limited to the third and fourth, and fourth and fifth, deciles of the wage distribution, respectively. In limiting the pool of workers to these groups, the results generally show how at higher hourly wage rates, the anticipated reduction in program utilization from raising wages becomes smaller, simply because a smaller share of workers in these wage ranges receive benefits. The one noticeable exception, however, is participation in the refundable Child Tax Credit. It is likely that the higher observed effects for this group result from the unique way the CTC is structured. Although the Child Tax Credit is available for families earning high annual incomes, it appears that in these hourly wage ranges, workers' tax liabilities, on average, are becoming large enough to more significantly reduce their likelihood of receiving the refundable portion of the credit. In other words, though these workers may still be taking the Child Tax Credit against the taxes they owe, at these wages they may start to owe more in taxes than the maximum value of the credit.[15]

The results in column four (workers with hourly wages between $12.16 and $14.72) and column five (wages between $14.72 and $17.62) are similar. As expected, the decline in the likelihood of receiving any benefits is smaller for the higher wage group because a smaller share of this group receives benefits. Among individual programs, the expected reduction in benefit receipt is noticeably smaller for SNAP, meaning that higher wages for workers in this range of the wage distribution are not going to have the same magnitude of effect as they would for raising wages among lower-paid workers. Similar, albeit smaller, reductions in magnitude are evident for Medicaid and housing assistance. Among the other programs—the EITC, CTC, WIC, and TANF—the effects are not meaningfully different between workers in the third and fourth deciles (column 4) and those in the fourth and fifth deciles (column 5).

Effects on program spending

The lower block of results in Table 3 shows the predicted effect from a $1 increase in hourly wages on the annual value of benefits received by workers in each wage range. Again looking at the first column, the results indicate that for each additional dollar in hourly wages paid to workers earning up to $9.91 per hour, total benefit dollars received from all public assistance programs decline by $199 per worker annually, on average. This means that if the 15.5 million work-

ers with wages in this range received, on average, a $1 increase in hourly pay, total means-tested government benefit expenditures would decline by about $3.1 billion annually.

For the bottom two deciles, the predicted change in benefit dollars is negative for all programs, although the effects are not statistically distinguishable from zero for the refundable Child Tax Credit (CTC) and TANF.[16] The estimated effects are largest for SNAP, with each dollar increase in hourly wages resulting in a $93 decline in annual benefits per worker. Extrapolating this effect to the full population of workers in this wage range, a $1 average raise for these workers would reduce annual SNAP expenditures by $1.45 billion.[17] The predicted per person effects for the other programs are an average annual decline of about $76 for the EITC, $14 for housing assistance, $8 for TANF, $4 for WIC, $2 for LIHEAP, and $2 for the CTC.

Note that the sample for these calculations includes workers who do not receive any benefits from these programs. Including these non-participating individuals—recorded as receiving zero benefits for the relevant program—makes the results considerably smaller than they would be if the analysis were restricted to only those receiving benefits from each program. This is why the values for CTC, LIHEAP, TANF, and WIC are so small; the share of all wage earners in the bottom two deciles receiving benefits from these programs is quite low, meaning that the average effect among all workers in this range (the majority of whom receive no benefits from these programs) is necessarily going to be small. Excluding the zero values from the sample would more accurately describe how wage increases affect individual benefit amounts among beneficiaries, but that is a different question from what is being explored here. This report's focus is on the average effect raising wages would have on aggregate program spending, which requires accounting for those for whom there is no effect.

As with the results for program participation, when the group of workers in the sample expands to include those in the bottom three deciles (with hourly wages up to $12.16), the average effect on benefit amounts shrinks for most programs, with the exception of TANF, the EITC, and the CTC. As far as the tax credits are concerned, this result is consistent with the structure of these credits, wherein higher earned income results in a larger benefit amount, up to a maximum benefit, which is then gradually reduced after workers and their families reach higher income levels. The fact that expanding the pool of wage ranges in the sample increases the magnitude of the effect on EITC and CTC benefits indicates that even though some workers in this group may be getting larger EITC and CTC credits from higher wages, most have maxed out their benefits, and some are likely on the downslope of the benefit curve. The results indicate that for every $1 average increase in hourly wages for the 27.5 million workers earning up to $12.16 per hour, we should expect a decline in EITC expenditures of roughly $80 per person annually, or $2.2 billion overall. Such a pay raise for workers in the bottom three deciles would reduce total annual expenditures on all means-tested programs included in this study by $189 per worker, or roughly $5.2 billion overall.

The differences in the effect of higher wages on benefit amounts shown in the fourth and fifth columns—where wages are limited to the third, fourth, and fifth deciles—are similar to the differences in effects on program participation. Workers in these higher wage ranges are generally less likely to participate in most of these programs, thus there are more observations with a zero value. Consequently, the average effect for all workers in these wage ranges is smaller. The EITC and CTC are again the exceptions; workers in these higher wage ranges who are still receiving benefits from these programs are more likely to be on the downslope of the benefit curve—i.e., they are either receiving the maximum benefit amount, or have begun to see their benefits reduced due to their higher incomes. That effects for these programs

among workers in the fourth and fifth wage deciles are only slightly larger than effects for workers in the third and fourth deciles reflects that benefits in these programs are reduced at a constant rate.

Excluding the value of Medicaid understates true aggregate program savings

All of these estimates of total means-tested public assistance outlays are conservative, as they do not include the fungible value of Medicaid. Because of the expansion to Medicaid enacted in the Affordable Care Act (ACA), it is more difficult to estimate how raising wages for the workers in this study would change overall Medicaid spending. As West and Reich (2014b) explain, for states that expanded Medicaid, higher wages among low-wage workers could lead to many traditional Medicaid beneficiaries moving into the expanded eligibility range where benefit costs are covered almost exclusively by the federal government. Similarly, workers in these states that moved entirely out of even the expanded Medicaid eligibility range would still likely qualify for subsidized health insurance premiums on the ACA's insurance exchange. In both cases, the result would be a shifting of costs from state budgets to the federal one.

However, in states that did not expand eligibility, and for workers moving off expanded eligibility and on to the health exchange in states that did, total public healthcare outlays from Medicaid or subsidized insurance premiums would certainly decline, and potentially by a lot. Young et al. (2015) at the Kaiser Family Foundation estimates that average Medicaid spending per enrollee in fiscal 2011 (the most recent available data year) was $5,790. Per-enrollee spending varies greatly across states and for different groups, but as a purely back-of-the-envelope calculation, consider the predicted effects from Table 3 on Medicaid enrollment for workers earning up through the third wage decile. The results indicate that if these 27.5 million workers received an average $1 increase in hourly wages, just over 1 percent—roughly 275,000 workers—would no longer use Medicaid. At a per-enrollee cost of $5,790, that translates to just less than $1.6 billion in savings. Again, these results do not account for state variation in costs, expansions to Medicaid, or healthcare exchange premium subsidies, but they do suggest considerable Medicaid savings are possible for state budgets, if not for the federal budget.

Still, even with these larger effects for the EITC and CTC, the aggregate effect on all means-tested programs is smaller among workers in these higher wage ranges than it is for lower-paid workers. A $1 average increase in hourly pay for workers in the fourth and fifth deciles (column five) is expected to reduce annual means-tested program expenditures by $155 per person, roughly three-fourths the magnitude of effect for workers in the bottom two deciles (column one).

Policy implications

Despite the relatively small average effects for individual programs, it is clear that broadly increasing wages among low-wage workers would lead to sizable declines in aggregate public assistance spending. For example, if a randomly selected 10 million workers with wages in the bottom four deciles—just less than a quarter of the 40.7 million workers earning up to $14.72 per hour—received a $1 increase in their hourly pay, 250,000 fewer workers would receive benefits, and annual public assistance outlays would fall by about $1.8 billion. If more workers received a pay raise or the wage increase were larger, the expected savings would be bigger. The exact mechanism used to spur higher wages—be it active

policy interventions or market forces—could influence the particular subgroup of workers that would be affected, which could change the magnitude of the effects. Predictably, higher wages among the lowest-paid workers would produce the largest program savings. Yet even among more moderate-wage workers, lifting wages reduces the likelihood that a worker relies on public assistance, and is likely to free program dollars that could then be repurposed in any number of ways—including directing them to the neediest workers and families.

One obvious way to raise wages for low-wage workers is to increase the minimum wage at the federal and state levels. As explained in Cooper, Schmitt, and Mishel (2015), the federal minimum wage is far below historical levels according to every relevant benchmark. Raising the federal wage floor would provide a long-overdue boost to the pay of millions of working Americans and reduce the implicit subsidy that taxpayers are giving to employers who pay inadequately low wages. Conveniently, the 30th percentile wage cutoff discussed in this report aligns reasonably well with the minimum-wage level proposed in the Fair Minimum Wage Act of 2015, which would raise the federal minimum wage to $12 by 2020.[18] As discussed previously, among workers earning less than $12.16 per hour, every $1 increase in hourly wages is predicted to reduce the share of workers relying on public assistance by 3.1 percentage points, and provide average annual savings to government programs of $190 per worker. Cooper (2015a) estimates that increasing the federal minimum wage to $12 by 2020 would directly raise the wages of 28 million workers, giving affected workers an average pay increase of $3.16 per hour. Multiplying this average raise by the total number of affected workers and the measured effects in the second column of Table 3 indicates that such a raise would reduce the number of Americans relying on public assistance by 2.7 million workers. The estimates on benefit amounts indicate that raising the minimum wage to $12 by 2020 would generate $17 billion in annual savings to means-tested government assistance programs. Again, this savings estimate is conservative because it does not include savings from Medicaid, nor does it account for workers earning wages above the $12 minimum wage who might also get a raise as employers adjusted overall pay scales.

Whatever the mechanism used to achieve higher wages, the potential for substantial savings to government assistance programs should motivate policymakers in both parties to prioritize raising wages for low-wage workers. In fiscal 2014, the seven programs studied in this report distributed roughly $190 billion in benefits to workers and families needing help to get by.[19] Thus, annual savings of $17 billion, as predicted from a $12 minimum wage, would equal about 9 percent of total benefit outlays. Clearly, raising the minimum wage would not eliminate the need for these programs, nor would it dramatically change their combined overall cost. Yet $17 billion in annual savings is more than enough to significantly improve or expand upon existing assistance programs or fund new tools amplifying government's capacity to improve people's lives. For example, both the president and congressional leaders have proposed expanding the EITC to provide greater benefits to childless adult workers, who currently are largely excluded from the program.[20] The president's proposal is estimated to cost roughly $6 billion a year. If enacted in tandem with a minimum-wage increase, the cost would be somewhat higher because some workers would receive larger benefits from their higher wages, yet it would still be well below the savings in other programs resulting from the higher wage floor.[21]

There are numerous other ways such savings could strengthen the safety net, fund new priorities, or make job-creating investments. Savings of $17 billion are enough to double housing assistance benefits—either increasing benefits to current recipients or expanding eligibility. It is enough to triple TANF benefits or quadruple WIC or LIHEAP benefits. It is enough to fund new education proposals from the president's budget, such as the "Preschool for All" initiative that would provide 4-year-olds in low- and moderate-income families with access to preschool, or the federal component of the president's proposal for tuition-free community college (OMB 2015a; OMB 2015b). By raising the minimum wage

to $12 by 2020, Congress could generate the funding required to support these worthwhile programs, and potentially still have savings left over.

Conclusion

Raising wages among low- and middle-wage workers would simultaneously lift incomes and reduce spending on public assistance programs. The government could then use these savings to bolster anti-poverty efforts or make new job-creating investments. Increasing the federal minimum wage is one simple way this could be achieved—though it is not the only way. As explained in EPI's Agenda to Raise America's Pay, we can raise wages by eliminating the lower subminimum wage for tipped workers, updating overtime protections, strengthening workers' ability to organize and negotiate with employers collectively, improving enforcement of labor laws, providing undocumented immigrant workers a path to citizenship, and ensuring monetary policy prioritizes full employment. These policies would help undo decades of wage stagnation that have prevented greater improvement in living standards for the vast majority of American households. They would also bring greater balance to the roles that the private and public sectors play in improving American workers' quality of life.

About the author

David Cooper is an economic analyst with the Economic Policy Institute. He conducts national and state-level research on a variety of issues, including the minimum wage, employment and unemployment, poverty, and wage and income trends. He also provides support to the Economic Analysis and Research Network (EARN) on data-related inquiries and quantitative analyses. David has been interviewed and cited by numerous local and national media for his research on the minimum wage, poverty, and U.S. economic trends. He holds a Master of Public Policy degree from Georgetown University.

Appendix A: Methodology and data sources

This study uses three years of microdata from the Current Population Survey Annual Social and Economic Supplement (CPS-ASEC), describing respondents' economic conditions in calendar years 2012–2014. The CPS is the monthly survey used by the Census Bureau to track a variety of labor market indicators, including the unemployment rate. The ASEC is a set of additional questions asked each March about respondents' economic status in the preceding year. It is used to calculate the government's official measures of family income, assess sources of income, and determine poverty rates.

In addition to the ASEC data, this paper also incorporates microdata from the Census Bureau's Supplemental Poverty Measure (SPM) public-use research files. The SPM is an alternative poverty measure developed by the Census Bureau that takes a more holistic appraisal of both family income sources and family expenses. The CPS-ASEC files contain information on most earned and some unearned income. The SPM data adds information on several means-tested public assistance programs, such as income from the Earned Income Tax Credit (EITC), the refundable portion of the Child Tax Credit (CTC), the Low-Income Home Energy Assistance Program (LIHEAP), and the Supplementary Nutrition Program for Women, Infants, and Children (WIC).

While the CPS-ASEC and SPM data provide excellent information on annual incomes—including income from wages—the survey's focus on *annual* income creates challenges for assessing how increases to *hourly* wages might affect public assistance levels. Low annual incomes could be the result of low hourly wages, inadequate annual hours of work, or some combination of the two. While a thorough examination of these influences is beyond the scope of this paper, this issue is discussed in Appendix C.

The hourly wage information used in this report is developed as follows: The CPS-ASEC survey asks respondents to describe their annual income and sources of income over the preceding year. Respondents also report the number of weeks they worked during that year, and the usual number of hours they worked in the weeks that they worked. With these three pieces of information, one can impute each individual's implied hourly wage for the time they were working.

Admittedly, these implied hourly wages from the ASEC data are less robust than other sources of hourly wage information, such as the wage data from the Current Population Survey Outgoing Rotation Group. As Giannarelli, Morton, and Wheaton (2007) note, imputing hourly wages compounds measurement error from the three variables used in the imputation process, and can produce hourly wage values that fall below the statutory minimum wage of $7.25. However, as explained in Appendix C, these implied subminimum values, while certainly the product of error in many cases, may be indicative of troubling labor practices in others—and may even be accurate in others still. In any case, the ASEC data is one of the only public datasets with information on income from means-tested public assistance programs, and while not ideal, the imputed hourly wages provide adequate measures with which to assess utilization of these programs by relative levels of imputed hourly wages.

Another potential source of error comes from the fact that in the CPS data, receipt of income from public assistance is recorded as the total income received by all members of the family—meaning that each individual observation carries the family's total income from public assistance. In order to assess the relationship between individual hourly wages and public benefit receipt, in this analysis, for families with multiple workers, income from public assistance programs is divided evenly among all workers. In a limited number of cases, this may create instances where the data report benefits received by individuals of the same family, when in actuality the individuals are separate tax units—such as adult siblings living together—where one of the respondents is not actually receiving benefits. Nevertheless, these are likely a small number of cases, and even in such cases, some portion of income may still be shared across tax units.

Finally, it is well known that the CPS-ASEC data significantly understate actual participation in, and income received from, public assistance programs. See Wheaton (n.d.) or Meyer, Mok, and Sullivan (2009) for details. Consequently, the CPS-ASEC data in this report have been adjusted to be consistent with administrative data that show actual program enrollment and expenditures for all programs except LIHEAP.[22] The adjustments are made using the same method of reweighting recipient observations, non-recipient observations, and reported benefit amounts as in Zabin, Dube, and Jacobs (2004) and Allegretto et al. (2013). Still, because of changes in Medicaid resulting from the Affordable Care Act, data from the period in this study may not have good predictive value in estimating effects on the value of Medicaid benefits. For this reason, the fungible value of Medicaid benefits is not included in any calculations throughout this study. Consequently, these results understate the true total public costs of public assistance received by workers and their families.

The sample for the descriptive statistics and regression analysis consists of the three years of CPS-ASEC data from March 2013, 2014, and 2015, reflecting respondents' economic conditions from 2012 to 2014. The sample is restricted to individuals age 16 and older who worked for some portion of the year, and for whom a valid hourly wage value can be determined.

The regression analysis uses two sets of regressions for each subsample of wage earners. One set of regressions has binary dependent variables indicating whether the respondent or a family member in the household reported participation in, or positive income from, any of the eight public assistance programs under study. In the second set, the dependent variables are the total dollar value—in level terms—of benefits received from each program, and the sum of all benefits from all programs. For both sets of regressions, the explanatory variable of interest is the coefficient on real hourly wages. Models were also estimated for total benefits, the EITC, and the CTC containing real hourly wages in quadratic form in order to capture likely changes in the direction of the effect. These results are discussed in the text, and a full listing of these results is available upon request. All models employ a standard set of demographic controls (age, age-squared, age-cubed, gender, race, citizenship, marital status, and metropolitan status), as well as controls for industry, major occupation group, state, family size, number of children in the family, the number of wage earners in the family, whether the individual worked part time at any point during the year, and the presence of any disabled persons in the household.

Appendix B: Additional tables and figures

The tables and figures in appendices B and C can be viewed online at http://www.epi.org/publication/wages-and-transfers.

Appendix C: Discussion of imputed subminimum hourly wage values in the CPS-ASEC

For the vast majority of observations within the ASEC sample, imputing an hourly wage from the respondent's reported annual wage income, weeks worked per year, and usual hours worked per week yields a plausible hourly wage value. However, for a small but not insignificant portion of the sample—9.9 percent—imputed wage values fall below the federally mandated minimum wage of $7.25 per hour. Some of these values fall below the wage floor almost certainly due to measurement error compounded by the imputation process. It is understandably difficult for some individuals to recount accurately their total wage income and total time in the workforce for a 12-month period three months removed—especially if they changed jobs, worked only a portion of the year, or worked inconsistent hours.

Appendix Figure CA shows the distribution of all imputed wage values below the federal minimum wage (hereafter referred to as "subminimum wage values") and the distribution of all imputed wage values, both as shares of their respective totals, by respondents' reported usual hours worked per week. The distribution shows that subminimum wage values disproportionately occur among individuals who worked less than 35 hours per week. **Appendix Figures CB1** and **CB2** show the distribution of subminimum wage values and total wage values by respondents' reported weeks worked in the previous year. As expected, subminimum wage values disproportionately appear among part-year workers.

The Census Bureau takes steps to validate responses, and reduce potentially invalid data, but unfortunately, the low-wage labor market is prone to characteristics that can aggravate measurement error: Turnover is high, work is more likely to be seasonal or part time, and many low-wage jobs suffer from inconsistent hours (CBO 2006). This means that workers whose actual hourly wage was above yet close to the minimum wage may be particularly prone to err in their reporting of any of the three data points needed to impute hourly wages.

Given these challenges, some researchers have been wary of using these implied hourly wages (see Giannarelli, Morton, and Wheaton 2007). Yet rather than simply dismissing these questionable values outright, a more thorough examination suggests that perhaps not all these subminimum wage values are the result of measurement error. In fact, some may be indicative of significant gaps in legal protections, and troubling real-world labor practices.

For example, certain groups of workers are exempt from the minimum-wage provisions of the Fair Labor Standards Act (FLSA), such as farmworkers on small farms, employees of some seasonal and recreational establishments, fishermen, newspaper delivery workers, and anyone employed by a business with less than $500,000 in annual revenue that does not engage in interstate commerce (U.S. Department of Labor 2014). For workers that fall into these categories, their low imputed hourly wage values may be entirely correct *and legal*.

For others, however, implied hourly wages below the minimum wage may indicate greater incidence of wage theft. As explained in Meixell and Eisenbrey (2014), wage theft—the practice of employers not paying workers the full wages that they are owed—is a significant problem, particularly in low-wage jobs, that costs American workers hundreds of millions, if not billions, of dollars each year.[23]

Appendix Tables C1 and **C2** show the occupations with the highest shares and highest incidence, respectively, of subminimum imputed wage values. Bolded occupations are those that appear in both tables. Many of the listed jobs represent the lowest-paying jobs in the economy, and indeed, several occupations that appear in this list may not be covered by the FLSA or other federal labor and employment laws, such as home health aides, personal and home care aides, and agricultural workers.[24]

Several other listed occupations are occupations where workers customarily receive tips as a portion of their wages: waiters and waitresses; counter attendants, cafeteria, food concession, and coffee shop workers; non-restaurant food servers; bartenders; bartender helpers; and hairdressers, hairstylists, and cosmetologists. Allegretto and Cooper (2014) explain how problems of wage theft and workers receiving wages below the prevailing minimum wage are particularly acute among tipped workers due to "tip credit" provisions in minimum-wage laws that allow employers of tipped workers to pay them a base wage as low as $2.13 per hour. While these employers are legally required to make up any shortfalls between the effective hourly rate earned by tipped workers from their tips and the prevailing minimum wage, enforcement of this requirement is highly problematic, and there is evidence of considerable abuse. Indeed, these data suggest that when workers in these occupations are asked to tally their total annual earnings, weeks of work, and usual hours, a high percentage report figures that imply hourly pay below the minimum wage.

Finally, immigrants comprise many of the workers in these occupations. In fact, of the 15 occupations most commonly held by immigrants, 10 appear in Appendix Table C2: cooks; housekeepers, maids, and butlers; nursing aides; janitors; truck, delivery, and tractor drivers; construction laborers; cashiers; gardeners and groundskeepers; retail sales clerks; and farm workers.[25] Some of these immigrant workers may be undocumented, while others may be working on tempo-

rary work visas that restrict their ability to change jobs—both scenarios that can leave these workers powerless against exploitive employers. Such practices are damaging not just for the immigrants themselves, but for all other workers (immigrant and non-immigrant) in the same occupations. Any time an employer can exploit certain groups of workers and pay wages lower than would otherwise be possible, it places downward pressure on the wages of other workers with the same jobs. For this reason, the high prevalence of subminimum wages in occupations common to immigrants need not be instances of wage theft solely among immigrant workers.

Appendix Tables C3 and **C4** examine the prevalence of subminimum-wage values by industry, showing the industries with the highest share and highest incidence, respectively, of wage values below the federal minimum. Once again, bolded industries are those that appear in both tables. As with the distribution by occupation, one can surmise plausible reasons for why workers in many of these industries may be underpaid for the total hours they worked in a given year, thus bringing their implied hourly wage below the federal minimum. Subminimum wages could be the result of unscrupulous employers or gaps in labor protections. For example, restaurants again appear prominently in both lists, which is expected given the high incidence of subminimum values for waiters and waitresses, cooks, and other food service occupations. Workers in recreational parks and camps (e.g., campgrounds) have the highest rate of imputed subminimum values, likely because many such facilities are seasonal and not covered by the FLSA. Similarly, some workers in animal production facilities, crop production facilities, and home health care services industries also lack FLSA protections. Workers in private households also show high incidence of subminimum imputed wage values, which could be the result of informal or "under the table" arrangements, which Shierholz (2013) notes leave workers particularly vulnerable to violations of labor standards. Finally, as with the top occupations with the highest incidence of subminimum-wage values, many of these industries are also disproportionately staffed by immigrants, some of whom may be vulnerable to exploitation due to their immigration status.

To be clear, these data cannot and should not be viewed as conclusive evidence of wage theft or labor abuses in any particular occupation or industry. However, the high prevalence of what should, in many cases, be impossibly low imputed wage values should raise questions about how workers are being paid and the hours they are expected to work in many of these jobs.

To the extent that these subminimum-wage values represent instances of wage theft or gaps in labor standards, better enforcement of labor law or expansions in coverage to workers either outright excluded from the FLSA (such as seasonal farm workers) or treated as a separate class of workers (such as tipped workers) would yield additional public savings.

Appendix Table C5 shows rates of receipt and the total value of benefits paid out to workers with imputed hourly wages below $7.25. Among these workers, 59.8 percent report receiving some form of public assistance, with total benefits from all programs totaling nearly $29 billion. Again, the program with the highest participation rate is the EITC—60.4 percent of workers in this wage range receive roughly $12.8 billion in benefits. Participation in SNAP is also common, with 26.2 percent of workers in this group receiving $12.1 billion in benefits. Participation rates for the other programs are 21.0 percent for Medicaid, 3.7 percent for WIC, 4.3 percent for LIHEAP, 4.4 percent for housing assistance, and 3.1 percent for TANF. The average total amount of benefits received among beneficiaries of any program is about $3,500, while the largest average benefit among the individual programs is for recipients of Section 8 housing vouchers, who receive an average benefit worth $3,900.

The regression results for this group are presented in **Appendix Table C6**. As with the results for workers with wage values in the valid range, increasing wages for this group is predicted to reduce the share receiving public assistance—in this case, by 2.0 percentage points from every $1 increase in average hourly wages. For the EITC, participation declines significantly, by 1.8 percentage points for every $1 increase in wages; for SNAP, the decline is 1.2 percentage points, and for Medicaid, the decline is 0.7 percentage points. The coefficients values for the other programs are either statistically insignificant or not economically meaningful.

In the regressions on the value of benefits, the results are mixed. The coefficient on the value of all benefits is positive, suggesting that benefits for workers in this group could increase in aggregate on average if their wages rose, although this result is not statistically significant. We can see, however, that this positive value is driven, as expected, by the EITC and CTC. The results for these programs show that for every additional dollar in hourly wages, aggregate EITC and CTC dollars for workers in this group would increase by an average of approximately $89 and $47 per worker, respectively. At the same time, the value of benefits from SNAP and housing assistance would decrease by an average of about $75 and $24 per worker, respectively. Values for the other programs are not statistically distinguishable from zero.

In light of the fact that these workers' imputed hourly wages are subject to considerable error, it is not clear whether we can draw any strong conclusions from these results. Nevertheless, the regression results do suggest that in cases where reported subminimum values are the result of wage theft or gaps in FLSA coverage, workers may be entitled to greater income both from their employer and from the tax-and-transfer system.

Endnotes

1. Costs of basic necessities and the levels of income required to achieve a modest but adequate standard of living are discussed in detail in Gould, Cooke, and Kimball (2015).

2. CBO (2014, 3).

3. In an update to this report, West (2015) estimates that increasing the federal minimum wage to $12 by 2020 would reduce SNAP expenditures by $5.3 billion annually, or $53 billion over 10 years.

4. This report does not include any data on participation or costs in the National School Lunch Program, the only other large national means-tested public assistance program that does not specifically target the elderly or disabled.

5. This threshold is significantly higher in states that expanded Medicaid through the Affordable Care Act. In fact, because Medicaid costs for participants who gained eligibility from the Affordable Care Act's expansion are covered almost entirely by the federal government, states that expanded Medicaid stand to achieve considerable state government savings in Medicaid if existing participants' incomes are raised. West and Reich (2014b) describe these effects in detail.

6. For more information on the structure or function of the EITC or CTC, see Marr et al. (2015) or Center on Budget and Policy Priorities (2015).

7. This report focuses on utilization of means-tested public assistance; thus, it does not include Social Security or Medicaid, as they are programs available specifically and universally for retired or elderly people.

8. Wage decile information is presented in Appendix Table B1.

9. Note that throughout this report, Medicaid is included for all calculations of participation in assistance programs; however, the fungible value of Medicare benefits are not included in any estimates of program costs or value of benefits.

10. This finding is consistent with Shierholz (2014), which finds particularly high poverty rates among restaurant workers, and Allegretto et al. (2014), which finds that more than half of full-time fast food workers were enrolled in some public assistance program.

11. See Cooper, Schmitt, and Mishel (2015).

12. For example, from 2012 to 2014, Georgia's employment-to-population ratio was 57.8 percent, Louisiana's was 55.8 percent, and Mississippi's was 51.5 percent. The national average for this period was 58.7 percent.

13. The results in Table 3 are all produced using a linear estimation model, meaning that the effects only describe average effects across the range of wages in each group. This provides suitable results for predicting overall changes in participation rates and benefit amounts. However, because the EITC and CTC have non-linear benefit structures, more precise effects at particular wage levels can be better estimated using nonlinear models. For this study, we did produce estimations with a quadratic form of the hourly wage variable. The results showed no meaningful difference in effects from the linear models at the average of each wage range; thus, we only report the linear results. However, we are happy to provide the quadratic regression results upon request.

14. The effects for WIC and TANF in this wage group are not statistically distinguishable from zero. This is likely because of the relatively small number of workers participating in these programs captured in this wage range, but it may also be that other factors—e.g., the recent birth of a child—are far more significant in determining participation in these programs.

15. The Child Tax Credit is structured so that workers may receive 15 percent of their earnings after the first $3,000 back as a credit to their tax liability, with a maximum credit of $1,000 per dependent child below age 17. They will only receive the refundable portion of the credit if their tax liability does not exceed the value of their credit. See Marr et al. (2015) for further detail.

16. Because the hourly wages in this study were constructed using reported annual wages and hours worked, it is impossible to isolate effects from changes in work hours from changes in wages. Workers at the lowest wages are also the most likely to work limited hours. TANF participation requirements vary across states, although income limits tend to be very low. Thus, it is likely that factors beyond hourly wage rates that limit workers' annual income, such as a lack of adequate hours, may be confounding the results for this program. This is also true for the CTC; however, the program's unique structure, in which workers' first $3,000 in earnings are excluded from eligibility, may also play a role.

17. This finding is similar to that of West and Reich (2014a), who estimated that for every 10 percent increase in the minimum wage, SNAP expenditures fall by 1.9 percent. They estimate that increasing the minimum wage to $10.10 would reduce program outlays by nearly $4.6 billion. By the estimates in this report, if workers in the range likely to benefit from a $10.10 minimum wage received an average hourly wage increase of $1.61—as calculated in Cooper (2014)—it would reduce SNAP expenditures by $4.1 billion.

18. Adjusting the proposed $12 in 2020 minimum wage for expected inflation back to 2014 dollars would likely place it closer to the 25th percentile rather than the 30th percentile value of $12.16 measured in this report's data. However, this does not include potential spillover effects above the $12 minimum. Moreover, these figures do not include the fungible value of Medicaid benefits and do not account for underreporting in LIHEAP participation, meaning that this estimate is still arguably conservative.

19. Author's analysis of administrative data for each program. For the EITC and CTC, fiscal 2014 data were not available at the time of publication, so fiscal 2013 data were used as a substitute.

20. See Council of Economic Advisers et al. (2014) or Reeves and Venator (2014) for details on the proposal.

21. Sawhill and Karpilow (2014) estimate that the EITC expansion coupled with a federal minimum-wage increase to $10.10 would cost $10 billion annually, with savings in other means-tested programs equaling $11 billion. With the increasingly negative effects on aggregate EITC spending observed in this report, one can assume that adopting the EITC expansion with a higher minimum wage would result in even greater net savings.

22. Comprehensive administrative data for LIHEAP are not available; thus, no adjustment was made to reported LIHEAP participation rates and benefits amounts.

23. See also Greenhouse (2014).

24. These data are from 2010 to 2012. Home health care workers and aides were brought under the FLSA in 2014; however, farm workers on small farms remain exempt from the FLSA's wage protections.

25. Author's analysis of American Community Survey microdata, pooled sample 2007–2011. Data compiled by Ruggles et al. (2010).

References

Allegretto, Sylvia, and David Cooper. 2014. *Twenty-Three Years and Still Waiting for Change: Why It's Time to Give Tipped Workers the Regular Minimum Wage*. Economic Policy Institute, Briefing Paper #379.

Allegretto, Sylvia, Marc Doussard, Dave Graham-Squire, Ken Jacobs, Dan Thompson, and Jeremy Thompson. 2013. *Fast Food, Poverty Wages: The Public Cost of Low-Wage Jobs in the Fast Food Industry*. U.C. Berkeley Center for Labor Research and Education.

Belman, Dale, and Paul J. Wolfson. 2014. *What Does the Minimum Wage Do?* W.E. Upjohn Institute for Employment Research.

Bernstein, Jared. 2014. "The Minimum Wage Increase and the CBO's Job Loss Estimate." *On The Economy* (Jared Bernstein's blog), February 23.

Bivens, Josh, Elise Gould, Lawrence Mishel, and Heidi Shierholz. 2014. *Raising America's Pay: Why It's Our Central Economic Policy Challenge*. Economic Policy Institute, Briefing Paper #378.

Bureau of Labor Statistics (BLS) Occupational Employment Statistics. 2014. "May 2014 State Occupational Employment and Wage Estimates."

Center on Budget and Policy Priorities (CBPP). 2015. *Chart Book: The Earned Income Tax Credit and Child Tax Credit*.

Congressional Budget Office (CBO). 2006. *Changes in Low-Wage Labor Markets Between 1979 and 2005*.

Congressional Budget Office (CBO). 2014. *The Effects of a Minimum-Wage Increase on Employment and Family Income*.

Cooper, David. 2014. *Raising the Federal Minimum Wage to $10.10 Would Save Safety Net Programs Billions and Help Ensure Businesses Are Doing Their Fair Share*. Economic Policy Institute, Issue Brief #387.

Cooper, David. 2015a. *Raising the Federal Minimum Wage to $12 by 2020 Would Lift Wages for 35 Million American Workers*. Economic Policy Institute, Briefing Paper #405.

Cooper, David. 2015b. "In Virtually Every State, the Poverty Rate is Still Higher than Before the Recession." *Working Economics* (Economic Policy Institute blog), September 18.

Cooper, David, John Schmitt, and Lawrence Mishel. 2015. *We Can Afford a $12.00 Federal Minimum Wage in 2020.* Economic Policy Institute, Briefing Paper #398.

Council of Economic Advisers, National Economic Council, U.S. Office of Management and Budget, and U.S. Treasury Department. 2014. *The President's Proposal to Expand the Earned Income Tax Credit.*

Current Population Survey Annual Social and Economic Supplement microdata. Various years. Survey conducted by the Bureau of the Census for the Bureau of Labor Statistics [machine-readable microdata file]. Washington, D.C.: U.S. Census Bureau.

Current Population Survey Outgoing Rotation Group microdata. 2013. Survey conducted by the Bureau of the Census for the Bureau of Labor Statistics [machine-readable microdata file]. Washington, D.C.: U.S. Census Bureau.

Dube, Arindrajit. 2013. *Minimum Wages and the Distribution of Family Income.* University of Massachusetts Amherst, unpublished working paper.

Giannarelli, Linda, Joyce Morton, and Laura Wheaton. 2007. *Estimating the Anti-Poverty Effects of Changes in Taxes and Benefits with the TRIM3 Microsimulation Model.* Urban Institute Technical Report.

Gould, Elise, Tanyell Cooke, and Will Kimball. 2015. *What Families Need to Get By: EPI's 2015 Family Budget Calculator.* Economic Policy Institute, Issue Brief #403.

Gould, Elise, Alyssa Davis, and Will Kimball. 2015. *Broad-Based Wage Growth Is a Key Tool in the Fight Against Poverty.* Economic Policy Institute, Briefing Paper #339.

Greenhouse, Steven. 2014. "More Workers Are Claiming 'Wage Theft.'" *The New York Times,* August 31.

Kuehn, Daniel. 2014. *The Importance of Study Design in the Minimum Wage Debate.* Economic Policy Institute, Issue Brief #384.

Marr, Chuck, Chye-Ching Huang, Arloc Sherman, and Brandon Debot. 2015. *EITC and Child Tax Credit Promote Work, Reduce Poverty, and Support Children's Development, Research Finds.* Center on Budget and Policy Priorities.

Meixell, Brady, and Ross Eisenbrey. 2014. *An Epidemic of Wage Theft Is Costing Workers Hundreds of Millions of Dollars a Year.* Economic Policy Institute, Issue Brief #385.

Meyer, Bruce D., Wallace K.C. Mok, and James X. Sullivan. 2009. *The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences.* NBER Working Paper No. 15191.

Mishel, Lawrence, and Ross Eisenbrey. 2015. *How to Raise Wages: Policies that Work and Policies that Don't.* Economic Policy Institute, Briefing Paper #391.

Office of Management and Budget (OMB). 2015a. *The President's Budget for Fiscal Year 2016.*

Office of Management and Budget (OMB). 2015b. Table S-9 in *Summary Tables from The President's Budget for Fiscal Year 2016.*

Reeves, Richard, and Joanna Venator. 2014. *Are Obama and Ryan Proposals for an EITC Expansion Pro- or Anti-Mobility?* Brookings Institute Social Mobility Memo.

Ruggles, Steven, Katie Genadek, Ronald Goeken, Josiah Grover, and Matthew Sobek. 2010. *Integrated Public Use Microdata Series: Version 5.0* [machine-readable database]. Minneapolis: University of Minnesota.

Sawhill, Isabel, and Quentin Karpilow. 2014. *Raising the Minimum Wage and Redesigning the EITC*. Brookings Center on Children and Families.

Schmitt, John. 2013. *Why Does the Minimum Wage Have No Discernible Effect on Employment?* Center for Economic and Policy Research.

Shierholz, Heidi. 2013. *Low Wages and Scant Benefits Leave Many In-Home Workers Unable to Make Ends Meet*. Economic Policy Institute, Briefing Paper #369.

Shierholz, Heidi. 2014. *Low Wages and Scant Benefits Mean Many Restaurant Workers Can't Make Ends Meet*. Economic Policy Institute, Briefing Paper #383.

Shierholz, Heidi, and David Cooper. 2014. "CBO Report Shows Low-Wage Workers Would Be Better Off With a Minimum Wage of $10.10." *Working Economics* (Economic Policy Institute blog), February 20.

U.S. Department of Labor. 2014. "Fair Labor Standards Act Advisor: Exemptions." Accessed September 16, 2014.

West, Rachel. 2015. *The Murray-Scott Minimum-Wage Bill: A Win-Win for Working Families and Taxpayers*. Center for American Progress.

West, Rachel, and Michael Reich. 2014a. *The Effects of Minimum Wage on SNAP Enrollments and Expenditures*. Center for American Progress.

West, Rachel, and Michael Reich. 2014b. *A Win-Win for Working Families and State Budgets*. Center for American Progress.

Wheaton, Laura. n.d. "Under-Reporting of Means-Tested Transfer Programs in the CPS and SIPP." The Urban Institute.

Young, Katherine, Robin Rudowitz, Saman, Rouhani, and Rachel Garfield. 2015. *Medicaid Per Enrollee Spending: Variation Across States*. The Kaiser Family Foundation.

Zabin, Carol, Arindrajit Dube, and Ken Jacobs. 2004. *The Hidden Public Costs of Low-Wage Jobs in California*. Center for Labor Research and Education, U.C. Berkeley.