

SAFETY NET

The Stanford Center on Poverty and Inequality

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KEY FINDINGS

- In 2012, U.S. safety net programs provided about one-third of the income support that low-income households needed to reach 150 percent of the official poverty line.
- The poverty relief provided by the safety net increased substantially during the Great Recession and reached its all-time high of 36 percent in 2010.
- There is considerable interstate variability in the amount of poverty relief provided by the safety net, with low-support states (e.g., Texas, Alabama) meeting only about 26 percent of the need and high-support states (e.g., Washington, Massachusetts) meeting as much as 40 percent of the need (based on pooled data from the 2008-2012 period).
- The extent to which households lose safety net benefits as their market earnings increase declined dramatically in the early 1990s and has continued to decline gradually thereafter. This change in the rate of “relief falloff” presumably works to incentivize self sufficiency.

The overall effectiveness of the social safety net is difficult to evaluate in the U.S. because our welfare institutions comprise such a complicated amalgam of social assistance and insurance programs. Due to this patchwork approach to meeting needs, low-income families are often obliged to rely on support from many sources, and the task of judging the overall effectiveness of the safety net thus requires assessing the combined effect of all programs. The task of assessing safety net performance is further complicated because the amount of support low-income families secure is often conditioned by a variety of factors in addition to earnings (e.g., household composition).

For these reasons, a focus on one program or a single source of support provides an incomplete, and potentially misleading, evaluation of the safety net. In the U.S., each safety net program has a different constellation of beneficiaries and a distinctive funding trajectory, thereby making the overall trend in safety net effectiveness a complicated function of a mixture of program effects. It is all too easy to be misled by the funding vagaries of any particular program and thereby miss the big picture of whether the safety net, as a whole, is working as we would like it to work. In this brief, therefore, we use a total-income-based measure of the effectiveness of the American safety net, a “poverty relief ratio” (R), to provide an overall assessment of the effectiveness of our social safety net.

We apply here the standard concept of a poverty threshold—an amount of income

that provides for basic needs—and assess the extent to which American safety net programs are successful in raising the incomes of the poor up to this threshold. We should be concerned if, for example, income support is so minimal, or so inefficiently targeted, that it makes up only a small part of the difference between the earnings of a poor household and its poverty threshold. This would imply that, even with safety net support, low-income households are unable to meet basic needs. Alternatively, if safety net programs typically raise the total incomes of poor families to a level at which basic needs can be met, then we might characterize them as relatively successful in providing relief.

The first and key objective of this brief is to assess, therefore, whether the safety net is efficiently delivering on the simple objective of reducing poverty. But we also care about how this objective is—or is not—being met. Historically, the safety net has been evaluated not just in terms of its effectiveness in directly eliminating poverty in the short run (via transfers), but also in terms of its success in incentivizing families to secure income in the labor market and reducing, over the long run, the very need for transfers. We of course want a safety net that provides the necessary temporary support while also encouraging families to become self sufficient.

In this brief, we therefore adopt a conventional two-pronged assessment of the safety net, with the following questions serving as the focus of our analyses:

- How has the country fared over time in its commitment to provide basic income support to those who are very poor (e.g., the “baseline relief” parameter)?
- To what extent does policy incentivize efforts to increase market income by minimizing the rate of falloff in transfers as income grows (e.g., the “relief falloff” parameter)?

We address these questions with data collected from the March Supplement of the Current Population Survey. These data can be used to track national trends as well as interstate differences in poverty relief. We will monitor changes in poverty relief for the U.S. as a whole between 1988 and 2012, and we will also compare levels of poverty relief across the U.S. states (using pooled data pertaining to the years from 2008 to 2012).

What do we find? Most importantly, the effectiveness of American safety net programs remains somewhat limited, although there have been significant improvements in the provision of income support for low-income households over the last 25 years. We find especially large increases in the overall effectiveness of American safety net programs following the passage of the American Recovery and Reinvestment Act of 2009. Nevertheless, using a standard poverty threshold (i.e., 150% of the 2010 official poverty line), in 2012 American safety net programs provide only an average of about 32 percent of the income support low-income households would need to have a total income equal to this poverty threshold.

We also find sizable cross-state variation in the effectiveness of the safety net. For the 2008-2012 period, some states provide only a quarter of the income support needed to raise the income of low-income households to the poverty threshold, while others provide 40 percent of the needed relief. The poverty relief ratio tends to be highest in the West and Northeast, middling in the Midwest, and lowest in the South and some of the interior states.

The second parameter of interest is the rate by which anti-poverty relief falls off as households secure more market income. Here again we find evidence of substantial change between 1988 and 2012. The rate of falloff was dramatically reduced in the early 1990s and then declined far more gradually thereafter. Although the “relief falloff” parameter is thus declining within the U.S. as a whole, there remains substantial cross-state variability in this parameter. For example, Arizona has a sharp falloff in relief, while Connecticut has a far flatter

rate of falloff that—presumably—better incentivizes efforts to increase self sufficiency.

The evidence behind these and other key conclusions is laid out below. The first section outlines the challenges associated with evaluating safety net programs in the U.S. and makes a case for a total-income measure. We next present estimates of the poverty relief ratio, and its component parts, for the U.S. during the 1988-2012 period. Then, we turn briefly to the states, identifying those that are more (and less) successful in poverty relief. Finally, we anticipate how recent changes in support for the long-term unemployed will affect our estimates of poverty relief in the near future.

Measuring Poverty Relief

Figure 1 reports average levels of income support provided to low-income households using the Current Population Survey (see “Data Processing Notes” for details on data and methods). All amounts are reported in thousands of 2012 U.S. dollars for equivalent-sized households (i.e., total dollar amounts are divided by the square root of the number of people in each household). Income support is divided by type, into social insurance (unemployment, disability, and worker’s compensation), social assistance (welfare, Supplemental Nutrition Assistance Program or food stamps, Supplemental Security Income, and other programs with minimum income provisions), and “Earned Income Tax Credit” (EITC), a refundable tax credit predominantly for low-income families (with eligibility determined by income, marital status, and the number of children).

Notice, first, that there are big differences in the amount of support that low-income households receive: Households with no market income receive, on average, approximately 50 percent more than is received by those in the adjacent income categories (representing very little market income). We may conclude that the safety net is oriented toward assisting zero-income households.

Second, the sources of support vary across income groups, too. Not surprisingly, social assistance programs provide support mainly to those households with very low market earnings. By contrast, EITC goes mainly to those earning slightly more, but still low incomes. Households earning between five and ten thousand dollars receive, on average, about one thousand dollars through EITC, while households earning fifteen thousand dollars receive, on average, only a few hundred dollars.

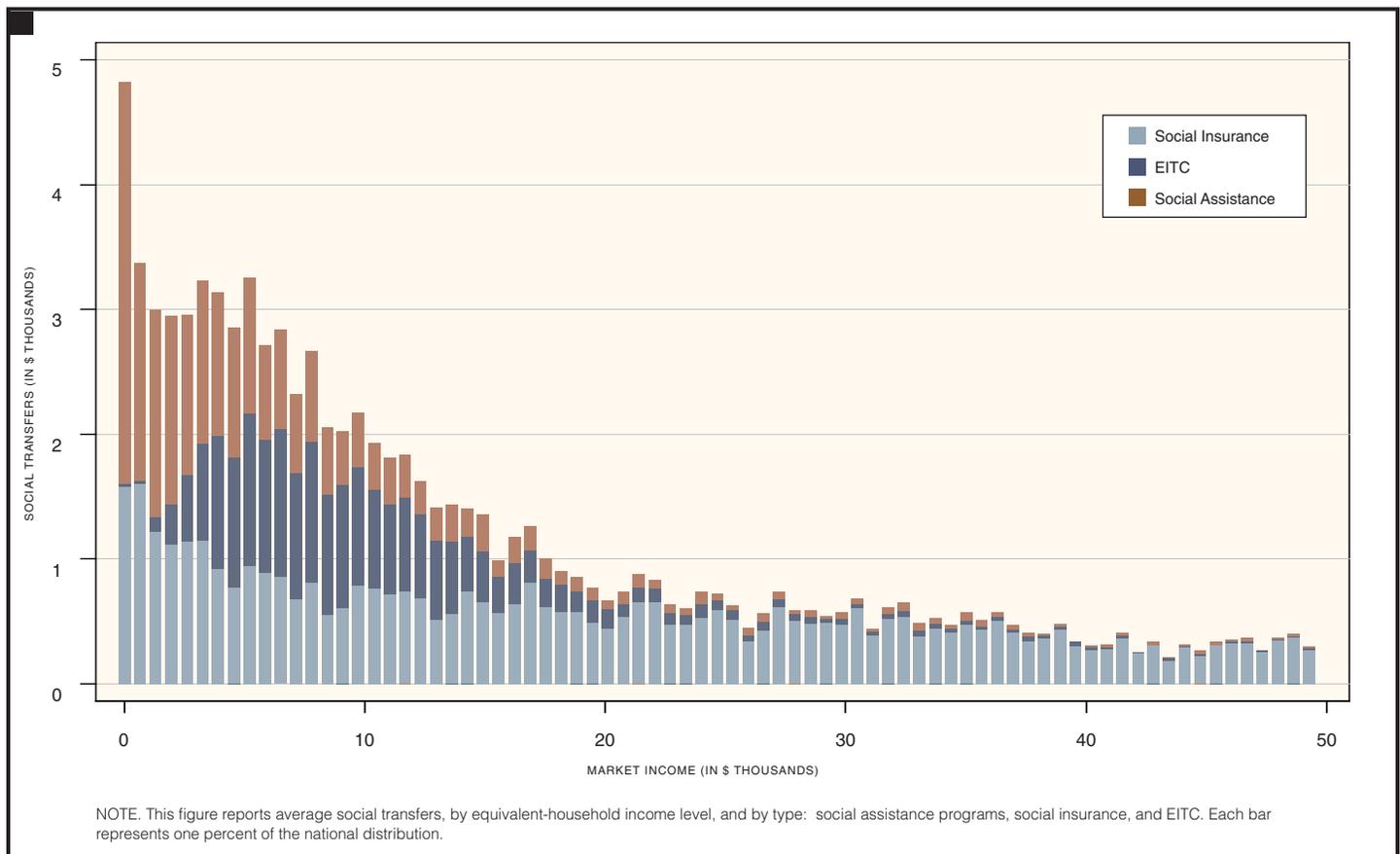
It is of course well known that low-income households benefit from a variety of safety net programs, and to varying extents. However, the measures policy analysts use to evaluate safety net programs do not adequately take these simple facts into account, as they are typically oriented to questions other than the effectiveness with which the safety net reduces poverty. There are, for example, three classes of frequently-used measures that are not adequate for our purposes:

- Fiscal measures represent the gross size of government allocations to programs, but provide little information on who receives how much support and whether it significantly changes their circumstances.
- Redistributive measures, like changes in income inequality after tax and transfers are applied, reflect the effects of redistribution on the overall income distribution rather than changes in the conditions of the poor in particular.

- Behavioral measures reflect changes among program recipients in, for example, rates of labor market participation or receipt of social assistance and thus again do not speak directly to the economic circumstances of recipients.

By contrast, poverty rate reduction measures estimate changes in the proportion of households that live in poverty, making them most similar to the measure we present here. However, conventional poverty rate reduction measures are not adequate for our purposes, as simple changes in poverty rates can conceal important changes in the distribution of support among low-income households. For example, a policy change may increase support for those with little or no market income, without changing the share of households living below some poverty threshold. More importantly, poverty reduction rate measures vary with the poverty threshold. The measure we present here, instead, maintains the relative ordering of states or annual observations across reasonable

FIGURE 1. Social Transfers, by Type and Market Income (2010).



Source: CPS 2010.

poverty thresholds, and is accordingly especially well-suited to comparative analysis.

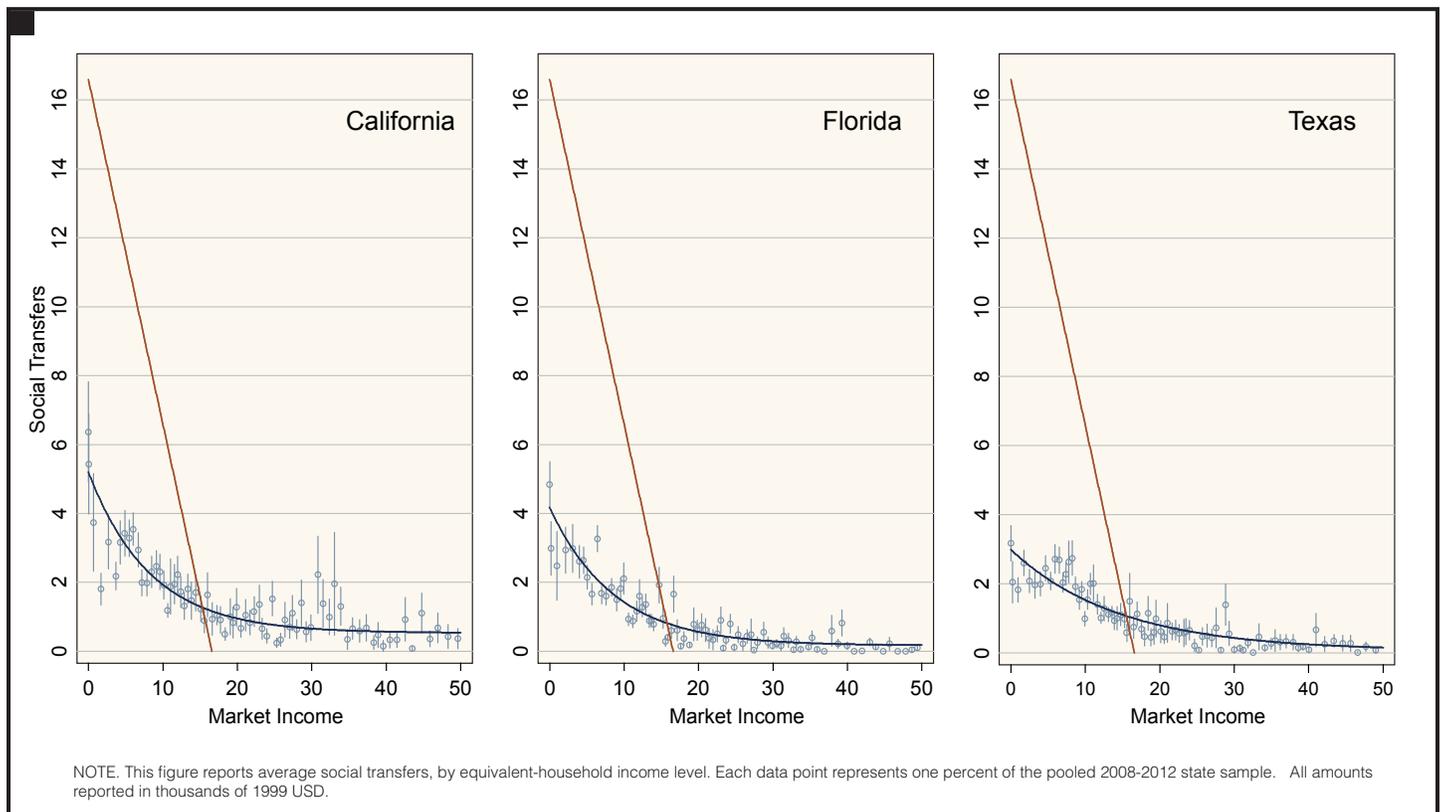
We therefore use the relationship between market income and social transfers as the basis of a poverty relief ratio. Notice in Figure 2, which plots (equivalent household) social transfer amounts against market income for three states, that this relationship varies on two important dimensions: First, California, Florida, and Texas differ in levels of income support that they provide to households with zero market income. We refer to this as “baseline relief.” Second, states also vary in the rate at which benefits decline with small increases in market earnings. Presumably, where this “relief falloff” is the greatest, incentives to increase market earnings are significantly undermined: For the very poor, small increases in earnings may result in dramatic decreases in income support, and consequently in total income. Where relief falloff is less dramatic, very low-income families continue to receive income support as they increase their market earnings, and therefore will likely have stronger incentives to enter the labor force. While states also vary in the amount of income support they provide (largely through unemployment insurance) to

those at higher levels of market income, this variation is less relevant to this discussion.

We pay particular attention to these first two differences in the relationship between market income and social transfers: differences in baseline relief, and differences in relief falloff. In fact, the parameters that describe the general relationship between social transfers and market income (the solid blue lines in Figure 2) can be used to estimate baseline relief and relief falloff directly, and can be used as the basis for a comparison of poverty relief within a state over time, or across societies more generally. (see “Deriving the Poverty Relief Ratio (R)” for more details).

While the variation in levels of baseline relief and relief falloff are interesting and informative themselves, a cross-state or time series comparison based on only one (or even two) of the parameters would be an incomplete analysis of poverty relief. Measures based on the benefits received by any particular low-income household would be similarly misleading. Instead, we use the relationship between social transfers and market income to generate an estimate of the amount of

FIGURE 2. The General Relationship between Social Transfers and Market Income (2008-2012).



Source: CPS 2008-2012.

income support provided relative to what is needed to bring all low-income households up to a poverty threshold. We use 150% of the 2010 official poverty line, for equivalent households, or \$16,584, as our benchmark. The red lines in Figure 2 represent the amount of income support that would be necessary to raise the income of each low-income household to \$16,584.

Then, we estimate the ratio of the area under the solid blue line in Figure 2 (the estimated relationship between social transfers and market income) to the area of the triangle completed by the solid brown line. An estimate of $R=.32$ (the state mean for the 2008-2012 period), for example, implies that an average low-income household could expect to receive about 32% of the income support it would need for its total income (market income plus social transfers) to equal the poverty threshold.

The National Estimates

We are now in a position to examine trends in poverty relief. Figure 3 reports estimates of the Poverty Relief Ratio, R , and its components, baseline relief (middle panel) and relief falloff (bottom panel), for the U.S. from 1988 to 2012. Increases in R (top panel) correspond to increases in income support, relative to the poverty threshold. Similarly, increases in baseline relief correspond to increases in support for those households with no market income. Finally, when the relief falloff parameter becomes less negative, it means that a given increase in earnings leads to a less substantial decline in benefits (with the presumption that the disincentive to pursuing market earnings is thereby reduced).

Focusing first on the top panel, we observe major shifts in overall levels of poverty relief during this period: During the late 1980s and early 1990s, average levels of income support provided slightly more than a fifth of what was needed to raise the total income of poor families to the poverty threshold. By 2012, income support had increased to 32 percent of what is needed to raise poor families' incomes up to the poverty threshold.

Major changes in R correspond to important policy shifts. We observe an increase in the effectiveness of safety net programs with the expansion of the EITC in 1990 and especially in 1993, when President Clinton made the EITC the cornerstone of his antipoverty program. Then, following the implementation of the Personal Responsibility and Work Opportunity Act in 1997, we see a significant decline in levels of income support provided to low-income households. We also observe a slight increase in benefits in the early years of the Bush

DERIVING THE POVERTY RELIEF RATIO (R)

- › The solid blue lines in each panel of Figure 2 report the estimated relationship between social transfers and market income. This relationship is generally well-described by a negative exponential function,

$$ST_{ij} = \alpha_j + \beta_{1j} \exp(\beta_{2j} MI_{ij}) + e_{ij} \quad (1)$$

where ST_{ij} denotes social transfer amounts, MI_{ij} denotes market income for individuals $i = 1 \dots n$ in states $j = 1 \dots J$, the parameters $\alpha_j > 0$, $\beta_{1j} > 0$, and $\beta_{2j} < 0$ describe the bivariate relationship within each state, and e_{ij} is a stochastic residual term.

- › Notice that individuals who have no market income (i.e., $MI_{ij} = 0$) receive, on average, income support in the amount of $\alpha_j + \beta_{1j}$ ("baseline relief"). Similarly, for very high levels of market income, ST_{ij} is expected to take on the value α_j . Finally, β_{2j} reports the curvature of the line, or the rate at which benefit levels decline with increased market earnings; we refer to this as "relief falloff."
- › The solid brown line in Figure 2 reports the linear function,

$$ST_{ij} = \psi - MI_{ij} \quad (2)$$

- › Here, ψ is a poverty threshold (e.g., a household equivalent of 150% of the official poverty line), and ST and MI are social transfers and market income, respectively. The expression in Eq. (2) reports the amount of income support that would need to be provided to raise the total amount of income, for all low-income households, to the poverty threshold, ψ .
- › In combination with Eq. (1), we can calculate the poverty relief ratio R as an estimate of the amount of income support needed, relative to the total amount implied by Eq. (2), that would bring the total income of each low-income household to the poverty threshold, ψ .

administration as part of the post-9/11 economic stimulus. Finally, following the 2008 financial crisis, we observe some success in the Obama administration's efforts to provide poverty relief, as levels of poverty relief increase to 36 percent of the poverty threshold.

The shifts in R that we observe in the top panel can be attributed to changes in baseline relief as well as changes in relief falloff. As EITC expands during the early 1990s, we see a dramatic decline in the rate at which safety net support drops off with increases in earnings. Then, we observe a steady but important decrease in the rate of relief falloff (corresponding

to an increase in values in the bottom panel) from the late 1990s through 2012. Most of the change that we observe in overall levels of poverty relief after 1997 can be attributed to changes in baseline relief.

In light of Figure 3, how then might we assess the effectiveness of our safety net? The first point that can be made is that the safety net did much work reducing the impact of the Great Recession on the amount of poverty. We see a substantial uptick in R during the recession years and, in this sense, the U.S. safety net responded just as it should have responded. At the same time, it is hardly the case that the safety net is eliminating all poverty (at least as measured here), indeed there remains much unmet need even after the safety net has acted.

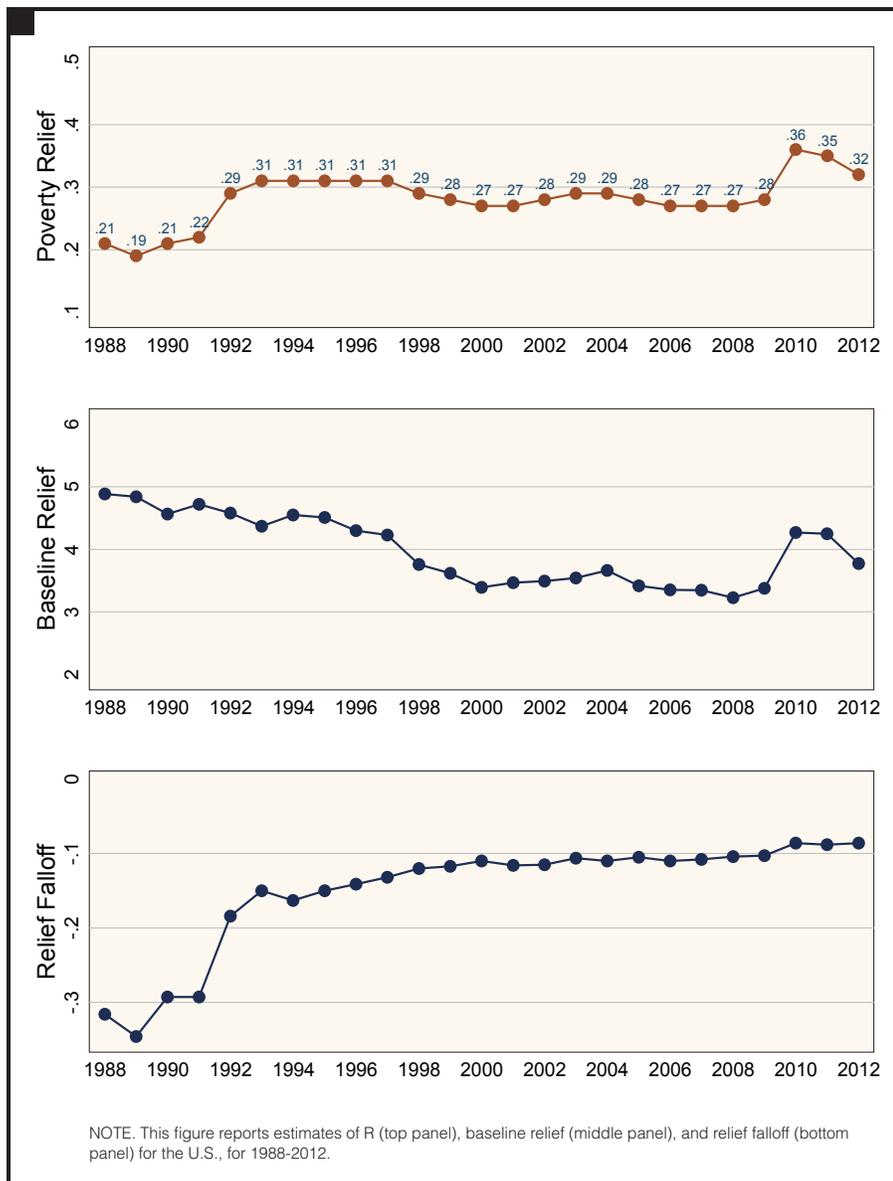
The second point is that we have fashioned a safety net in which the rate of relief falloff is gradually declining. Taken as a whole, our safety net is therefore increasingly operating to incentivize market work, which is precisely the type of safety net that most people want.

State-Specific Estimates

The foregoing national estimates conceal much state-level variability in the amount of relief and how it is provided. To cast light on this variability, Figure 4 maps the distribution of the poverty relief ratio across the U.S. states. We observe some regional clusters, with states in the West and Northeast generally providing more effective income support, and states in the South and interior providing more limited poverty relief. We know from the analysis presented in Figure 3 that most of the variation in the effectiveness of states' poverty relief programs comes from variation in baseline support.

To cast further light on this variability, Figure 5 next plots the estimates of baseline relief against relief falloff. Higher values on the vertical axis correspond to higher levels of baseline relief. Increasing values on the horizontal axis correspond to lower rates of relief falloff. Those states, like Wyoming, Florida, and Nebraska, in the

FIGURE 3. Estimates of R, Levels of Baseline Relief, and Relief Falloff (1988-2012)



Source: CPS 1988-2012.

lower left quadrant of the graph provide low levels of support that drop off quickly with small increases in income. States in the upper right quadrant, like Massachusetts, Maine, and Rhode Island, provide relatively high levels of support to those with no market income, while benefits in these states decline comparatively slowly with small changes in market income. The third group of states, those in the upper left quadrant, like Washington and California, are those states that provide relatively high levels of support to no-market-income households, but benefits drop off fairly quickly with earnings. Finally, those states in the lower right quadrant, like Kentucky, provide relatively little income support to those with no market income, and instead provide a more uniform distribution of benefits (i.e., most income support is provided through unemployment insurance programs).

If the results of Figures 4 and 5 are combined, one finds that there are two roads to securing high poverty relief. The road typically taken in the Western states (e.g., Washington, California, Nevada, Utah) is to combine high levels of baseline relief with a relatively steep falloff, while the road typically taken in the Eastern states (e.g., Massachusetts, Maine,

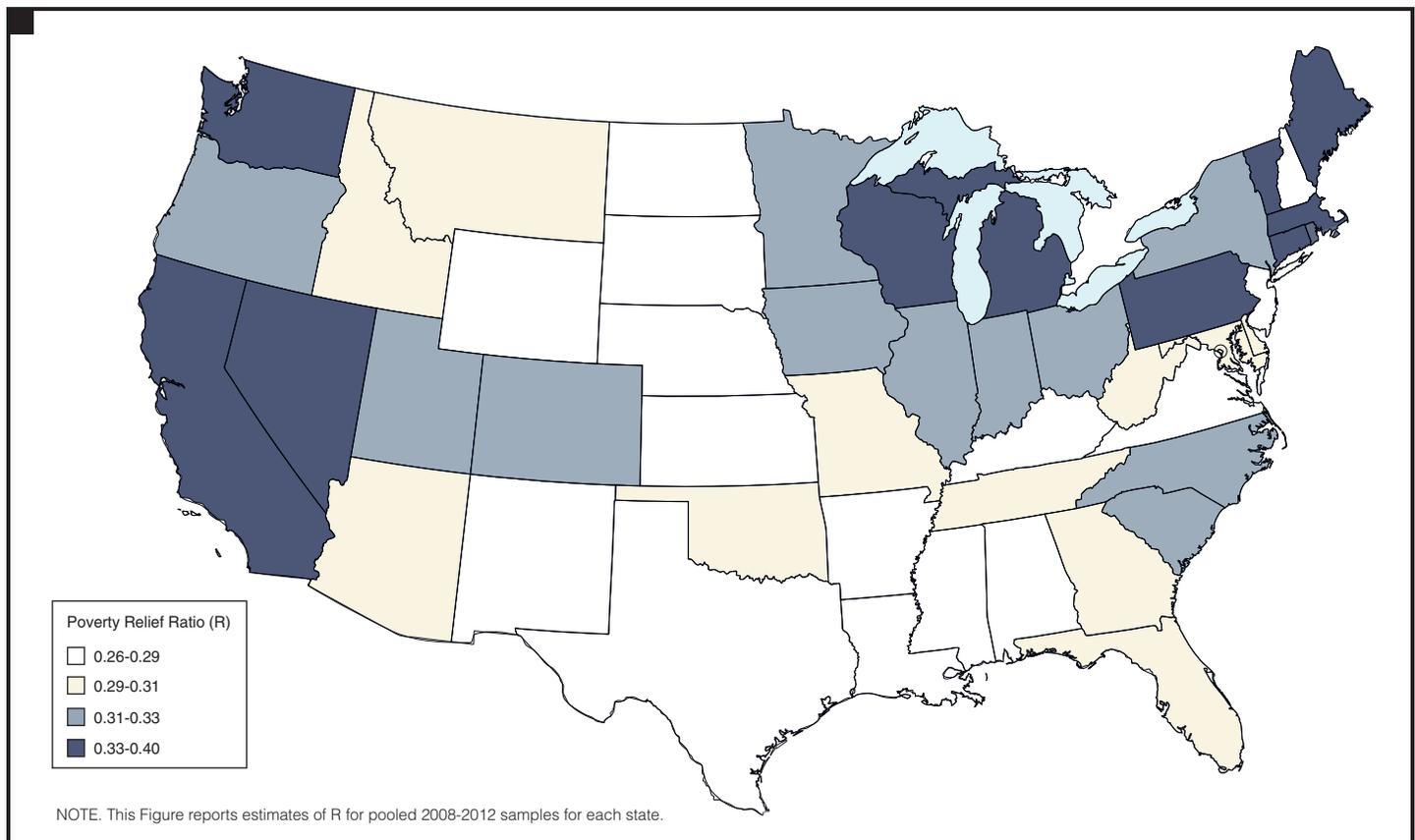
Rhode Island) is to combine high levels of baseline relief with a less pronounced falloff. Although those who prefer low-disincentive regimes would presumably opt for the Eastern road, it bears noting that, at least by the standard of overall poverty relief, each approach is doing substantial work.

Conclusions

Building on our earlier work, we have used the poverty relief ratio to provide a direct measure of the effectiveness of American safety net programs. Implicitly, the poverty relief ratio identifies a goal for American social policy – raising all income levels to a well-specified poverty threshold – and tracks progress towards this goal. As this analysis makes clear, there is much work to be done: In 2012, only 32 percent of the total need was met (using a benchmark of 150% of the 2010 official poverty line). In some of the Southern states, the poverty relief ratio was especially low, dropping down to as little as 26 percent.

At the same time, the safety net responded rather effectively to the challenges of the Great Recession, indeed the poverty relief ratio reached an all-time high of 36 percent in 2010.

FIGURE 4. Estimates of R, by State (2008-2012)



Source: CPS 2008-2012.

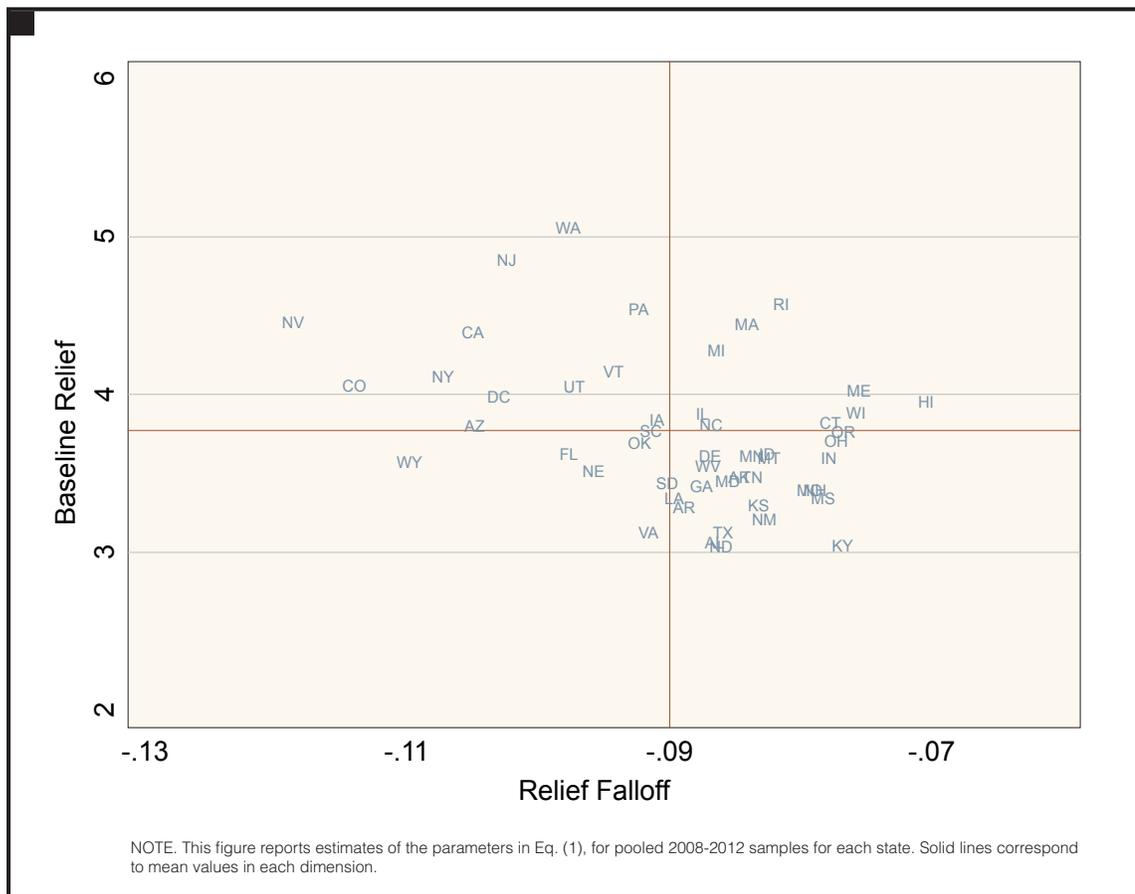
Why has the poverty relief ratio increased during the recessionary and post-recessionary period? The answer is twofold: The recessionary labor market generated precisely that type of need (e.g., unemployment) that our safety net was relatively well-equipped to handle, and the safety net has been further modified and extended to cover additional types of need (e.g., more protracted periods of unemployment) that had not before been covered.

It also bears noting that the safety net is increasingly taking a shape that incentivizes labor market attachment. This transition was most dramatic, of course, with the expansion of EITC in the early 1990s. But it continues apace in the form

of a gradual increase over the last two decades in the relief falloff parameter.

We can anticipate, finally, how very recent shifts in policy are likely to affect our estimates of poverty relief in the near future: Dramatic cuts in long-term unemployment benefits, and in Supplemental Nutrition Assistance Program (SNAP) benefits, are likely to be apparent in decreases in baseline relief, and possibly in relief falloff, which will both work to lower the overall amount of poverty relief. If levels of poverty relief return to pre-2009 levels, as seems likely, the consequences of the federal sequester are likely to be problematic for low-income families. ■

FIGURE 5. Characterizing State Income Support Programs, 2008-2012



Source: CPS 2008-2012.

NOTES

1. Please note that we use the term “income support” although our measure of social transfers also includes near-cash benefits (Supplemental Nutrition Assistance Program, or food stamps, and energy assistance).
2. See Jusko and Weisshaar, 2013, for a full and more technical treatment.

ADDITIONAL RESOURCES

Buhmann, B., Rainwater, L., Schmaus, G. and T. Smeeding. 1988. “Equivalence scales, well-being, inequality, and poverty: sensitivity estimates across ten countries using the Luxembourg Income Study (LIS) database.” *Review of Income and Wealth* 34:115-42.

Jusko, K. L. 2008. “The Political Representation of the Poor.” A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy (Political Science) in The University of Michigan.

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O’Hara, A. 2006. “Tax Variable Imputation in the Current Population Survey” in the *IRS Research Bulletin* (Publication 1500), 169-82.

US Census Bureau. 2010. “Poverty Thresholds for 2010 by Size of Family and Number of Related Children Under 18 Years.” Table published on-line at <http://www.census.gov/hhes/www/poverty/data/threshld/>.

DATA PROCESSING NOTES

This analysis is based on the Current Population Survey March Supplement, household income data.

All dollar amounts are reported in thousands of 1999 USD. Except for EITC, which is estimated by the US Census Bureau on the basis of the information provided (see O’Hara 2006 for more detail), all income amounts are reported by CPS survey respondents. To generate equivalent household estimates of earnings and transfers, total dollar amounts were divided by the square root of the number of people in each household (see Buhmann et. al. 1988).

The analysis is restricted to working-aged households (i.e., in which the head of household is aged at least 25).

Market income includes wage and salary, self-employment, farm, interest, dividend, rent, child support, alimony, veteran’s, pension/retirement, and familial assistance income.

Social assistance support includes welfare (Temporary Assistance to Needy Families, TANF, and its predecessor Aid to Families with Dependent Children, AFDC), Supplemental Security Income, Supplemental Nutrition Assistance Program benefits (SNAP), energy assistance, and other means-tested income support programs.

Social insurance benefits include unemployment insurance, disability insurance, and workers’ compensation.

A common poverty threshold, (\$16,584 = 150% of the 2010 poverty threshold for a family of four, divided by 2; see US Census Bureau 2010) is used to calculate of R.