# Income Poverty and Multiple Deprivations in a High-Income Country: The Case of the United States*

Sophie Mitra, *Fordham University*

Debra L. Brucker, *University of New Hampshire*

*Objectives.* The objective of this study is to develop a measure of multiple deprivations for the United States that is similar to those used on the international stage as multidimensional poverty. The latter is understood broadly as a deprivation of well-being across multiple dimensions rather than purely as a lack of income or other financial resources. *Methods.* Using Current Population Survey and American Community Survey data, this study develops a measure of the joint distribution of multiple deprivations in the United States, in other words, a measure of the extent to which different deprivations are experienced by the same individuals. *Results.* The experience of multiple deprivations affects 15 percent of Americans. An estimated 17.1 million Americans, 5.5 percent of the population, experience multiple deprivations while they are not income poor. The odds of experiencing multiple deprivations are significantly higher for Hispanics, immigrants, and persons with disabilities. *Conclusions.* Income poverty is not a reliable proxy to measure multiple deprivations. Further measurement efforts are needed on overlapping multiple deprivations in the United States as such measures can be used in policy evaluation and monitoring.

Anti-poverty initiatives have been waged on a number of fronts in the United States (U.S.). Income transfers, teamed with programs in education, employment, food security, and health, have provided support to low-income persons across the lifespan (Bailey and Danziger, 2013). In the U.S. typically, the measure used to monitor poverty or to evaluate initiatives has focused on income, and thus may not be adequate to capture impact on multiple fronts (Blank, 2008). On the international stage, poverty is increasingly understood broadly as a deprivation of well-being rather than purely as a lack of income or other financial resources (Narayan et al., 2000; Beja, 2013; Madonia, Cracolici, and Cuffaro, 2013; OECD, 2011; Stiglitz, Sen, and Fitoussi, 2009). Measures that have incorporated this broader view of poverty have demonstrated that the analysis of multiple deprivations

*Direct correspondence to Sophie Mitra, 524 Dealy Hall, 441 East Fordham Road, Bronx, NY 10458-9993 ⟨mitra@fordham.edu⟩. The author will share all data and coding for replication purposes. The authors are grateful to Christopher Wimer and Enrica Chiappero-Martinetti for insightful comments on an earlier version of this article and to Hoolda Kim for expert research assistance. Comments on an earlier draft are appreciated from participants of seminars at the Columbia Population Research Center (CPRC), Fordham University, the 2013 Annual Meeting of the Eastern Economics Association, and the "Measuring Human Development and Capabilities in High-Income Countries" conference at Roma Tre University in April 2014. The authors thank Austin Nichols and Jose Manuel Roche for very helpful discussions. The author received funding from Fordham University through a faculty fellowship and was a visiting research scholar at CPRC while undertaking part of this research. A portion of the work on this project was funded by the U.S. Department of Health and Human Services (DHHS), National Institute for Disability, Independent Living and Rehabilitation Research under cooperative agreement H133B130015. The findings and conclusions are those of the authors and do not represent the policy of the DHHS. The authors retain sole responsibility for any errors or omissions. The authors have no conflict of interest to disclose.

SOCIAL SCIENCE QUARTERLY

DOI: 10.1111/ssqu.12291

and income poverty sometimes lead to different groups being identified as disadvantaged (Alkire and Santos, 2010; Alkire and Foster, 2011; Alkire and Seth, 2013; Bourguignon and Chakravarty, 2003; Brucker et al., 2014; Tsui, 2002; Duclos, Sahn, and Younger, 2006; UNDP, 2010; Neubourg et al., 2011).

In high-income countries and in the U.S. in particular, some researchers have recently begun to explore the use of such multidimensional approaches (Brucker et al., 2014; Mitra et al., 2013; Ciula and Skinner, 2015; Waglé, 2008). In this article, we extend this research by developing a measure of multidimensional poverty for the U.S. We use the method by Alkire and Foster (2011) that identifies persons who are disadvantaged by counting the deprivations simultaneously experienced by individuals or households and offers measures that reflect the breadth and depth of deprivations. The result measures the joint distribution of multiple deprivations, in other words, the extent to which the different deprivations are experienced by the same people. Our objective is to assess the feasibility as well as the potential value of developing and using such multidimensional measures in the U.S. context.

In the U.S., the notion of poverty is understood by the public and is used by policymakers and politicians as material deprivation (Citro and Michael, 1995) or income deprivation (Mincy, 1994). In this article, we use the notion of multiple deprivations to refer to what, on the international stage, is often referred to as multidimensional poverty (Alkire and Santos, 2010) or social exclusion (Marlier and Atkinson, 2010). We use the term poverty to refer specifically to economic deprivation(s), and in particular income deprivation. We focus our efforts on answering the following three research questions:

- To what extent do Americans experience simultaneous multiple deprivations?
- Is income poverty a good proxy for multiple overlapping deprivations in the U.S.?
- If not, what are the characteristics of the multiply deprived?

The main objective of this article is to assess the potential added value of measuring overlapping deprivations. The next section reviews the background to this research, followed by sections on the methodology, results, discussion, and conclusions.

## Background

In the U.S., poverty is generally measured in one of two ways. The most commonly used measure is the official poverty measure (OPM). The OPM relies solely on a family's income, and is based on a set of pretax income thresholds, which do not include either capital gains or in-kind benefits. Thresholds vary by family size and composition (Short, 2013). In 2012, 15 percent of the U.S. population, or 46.5 million people, were in poverty, according to the OPM (DeNavas-Walt, Proctor, and Smith, 2013).

In the past two decades, there have been efforts in the U.S. to develop an improved poverty measure (Citro and Michael, 1995). The supplemental poverty measure (SPM), a new poverty measure developed by the U.S. government, is the second measure that is now used in the U.S. (Hutto et al., 2011; Chung, Isaacs, and Smeeding, 2013; Short, 2013). The SPM threshold is adjusted to the needs of different family types and to geographic differences in housing costs using an equivalence scale. Nearly 50 million Americans, or 16 percent of the population, were poor in 2012, according to the SPM (Short, 2013). The SPM has recently been used to revisit poverty trends (Fox et al., 2014) or the situation of specific groups (Brucker et al., 2014) and geographies (e.g., Bohn et al., 2013 for California; Smeeding, Isaacs, and Thornton, 2014 for Wisconsin). The study of overlapping multiple

deprivations is not new in the U.S. It can be traced back to the study of multiple social problems by anthropologists and sociologists in the late 1950s and 1960s (e.g., Harrington, 1962) and later on to the study of the underclass[1] in the 1980s and 1990s (e.g., Wilson, 1987).

## Methodology

### *Measure*

This article uses the Alkire and Foster (2011) methodology. Put simply, this method counts deprivations for a set of dimensions that affect a person at the same time and compares the deprivation count to a threshold. Dimensions are weighted: $w_j$ is the weight of dimension $j$. Each individual $i$ has a weighted count of dimensions where that person is deprived ($c_i$) across all measured dimensions: $0 \leq c_i \leq d$, where $d$ is the number of dimensions, $c_i = \sum_{j=1}^{d} w_j c_{ij}$ with $c_{ij}$ a binary variable equal to 1 if individual $i$ is deprived in dimension $j$, and 0 otherwise. Dimensions can rely on ordinal and/or cardinal data. Let $q_i$ be a binary variable equal to 1 if the person is identified as disadvantaged, and to 0 otherwise. A person is *identified as having multiple deprivations or being multiply deprived* if the person's count of deprivations is greater than some specified cutoff ($k$):

$$\text{if } c_i \geq k, \quad \text{then} \quad q_i = 1,$$

$$\text{if } c_i < k, \quad \text{then} \quad q_i = 0.$$

The *headcount ratio* for a given population is then the number of disadvantaged persons ($q = \Sigma q_i$) divided by the total population ($n$):

$$H = q/n \tag{1}$$

To capture the breadth of deprivation experienced by the multiply deprived, in other words, the experience of deprivation in several dimensions, the average number of deprivations that a multiply deprived person faces is computed. The total number of deprivations experienced by multiply deprived people $c(k)$ is calculated as follows: $c(k) = \Sigma(q_i c_i)$ for $i = 1 \ \ldots \ n$. The *average deprivation share* is the total number of deprivations of the disadvantaged ($c(k)$ divided by the maximum number of deprivations that the deprived could face ($qd$)):

$$A = c\,(k) \,/\, \left(qd\right) \tag{2}$$

The *adjusted headcount ratio,* $M_0$, combines information on the prevalence of disadvantage and the breadth of disadvantage, combining the headcount ratio and average deprivation share:

$$M_0 = HA = c(k)/(nd) \tag{3}$$

[1]The term underclass has been used primarily to study urban poverty and minorities. Different measures of the underclass have been used (Mincy, Sawhill, and Wolff, 1990; Mincy, 1994). One type of measure used in this literature is relatively close to the one developed in this article: it is the measure of multiple social problems that identifies individuals or households that simultaneously experience different social problems such as low income, nonemployment, violence, and nonmarital childbearing (O'Hare and Curry-White, 1992; Kasarda, 1992).

It fulfills desirable axioms, is decomposable, and can include discrete, cardinal, and continuous data (Alkire and Foster, 2011). $M_0$ can be decomposed by dimension to show which dimensions contribute most to individuals' disadvantage. Likewise, over time, changes in multidimensional deprivations can be disaggregated so that we can identify which dimensions account for changes in $M_0$.

This method has a number of limitations. First, the three measures above are a function of the weights $w_j$ allocated arbitrarily to dimensions. Thus, any calculation using this framework is sensitive to the assumptions used in setting weights. Second, this method is also sensitive to the selection of dimensions and it offers no guidance on how to select them. Furthermore, the Alkire-Foster method requires that a cutoff is set for each dimension. Deciding on a specific cutoff point is an arbitrary choice, although it can be an informed one. A final challenge with this method is to identify the cutoff across dimensions $k$ or $k/d$—the share of dimensions whereby one needs to experience deprivation to be considered multidimensionally deprived. This study uses $k = 2$, but presents results for other values of $k$. Since multiple deprivation measures require assumptions for the selection of dimensions, weights, and thresholds, these assumptions are described in detail below. Results will be assessed with respect to some of these choices using sensitivity analyses.

### *Selecting Dimensions*

The selection of dimensions for measures of well-being or deprivations at an applied level is challenging in general (Alkire, 2007) and for the U.S. in particular. In this article, we use the list of dimensions of well-being developed by Stiglitz, Sen, and Fitoussi (2009). This list has been derived through an extended and international consultative process toward developing and recommending indicators to measure economic and social progress. Stiglitz, Sen, and Fitoussi (2009) recommend the following eight dimensions as constitutive parts of well-being: material well-being (income, consumption, and wealth); health; education; personal activities, including work; political voice and governance; social connections and relationships; environment (present and future); and insecurity of an economic and physical nature.

### *Data*

Next, we review public data sets to identify the dimensions that can be empirically measured. We restrict ourselves to data sets that have been used in the U.S. for national income poverty estimates, since one of the objectives is to assess the overlap between income poverty and multiple deprivations. Hence, we review four data sets: the Annual Social and Economic Supplement (ASEC) of the Current Population Survey (CPS), the American Community Survey, the Survey on Income and Program Participation (SIPP), and the Panel Survey of Income Dynamics (PSID). A summary of this data review is available in Table A1.

We chose the March 2013[2] ASEC supplement of the CPS as the primary data set because it is the source of official national estimates of poverty rates using the OPM and the SPM. We also use the 2012 American Community Survey (ACS) to verify our CPS results.[3]

[2]The March 2013 ASEC data collects income data for the 2012 calendar year.

[3]In the CPS, data on food security can be linked to data on the above set of dimensions, but were not used in the measure presented in this article given the lack of comparable data on food security in the ACS. In the

TABLE 1

Dimensions, Indicators, Thresholds, and Weights

| Dimension | Indicator(s) | Threshold: Deprived if . . . | Weight | |
|---|---|---|---|---|
| | | | Measure 1 | Measure 2 |
| Material well-being | Family income | Individual is in a family where income in past year is below official poverty line | 1/5 | 0 |
| Health | Health status | Individual reports poor or fair health[a] | 1/5 | 1/4 |
| Education | Educational attainment | Individual has less than high school educational attainment[b] | 1/5 | 1/4 |
| Personal activities | Employment status | Individual is unemployed in the past week[b,c] | 1/5 | 1/4 |
| Insecurity | Health insurance | Individual does not have any health insurance | 1/5 | 1/4 |

[a]For the ACS, the indicator is functional or activity limitation. The threshold is that the individual needs to report at least one such limitation.
[b]For children, this dimension is with respect to the family head.
[c]For the elderly, this dimension is not included.

### *Indicators, Thresholds, and Weights*

The unit of analysis is the individual. We build a multidimensional measure with the following set of five dimensions out of those recommended by Stiglitz, Sen, and Fitoussi (2009) and that are common to both the CPS and the ACS: material well-being (income), health, education, work, and insecurity (health insurance).Table 1 describes the indicators, thresholds, and weights used in the measure for each dimension. The selection of indicators is challenging: unlike the European Union, the U.S. does not have a set of social indicators that are regularly compared or cross-tabulated (Blank, 2008; Couch and Pirog, 2010). Of course, different U.S. government agencies produce different indicators, and some of them are used below.

***Material Well-Being.*** A person is considered deprived if he/she is part of a family whose income is below the threshold specified under the OPM.

***Health.*** We acknowledge that health is a complex and multifaceted construct that is difficult to measure. We use the available health status measure and consider an individual as deprived if he or she reports being in poor or fair health.

***Education.*** We use indicators of educational achievement. A person is considered deprived if he or she has less than a high school diploma. For children (birth to age 17), the education dimension refers to the education status of the family head of the child.[4]

ACS, data on housing (e.g., crowding) could be used as part of the material well-being dimension. However, they are not available in the CPS.

[4]The family head is the person in whose name the house is owned or rented. If a married couple, either the husband or wife can be named the family head.

TABLE 2

Measures of Multiple Overlapping Deprivations

| | Headcount ($H$; %) | Intensity ($A$) | Adjusted Headcount ($M_0$) |
|---|---|---|---|
| Measure 1: | | | |
| $k = 1$ | | | |
| CPS data (with OPM income) | 40.5 | 0.306 | 0.124 |
| CPS data (with SPM income) | 41.2 | 0.307 | 0.126 |
| $k = 2$ | | | |
| CPS data (with OPM income) | 15.0 | 0.471 | 0.071 |
| CPS data (with SPM income) | 15.2 | 0.474 | 0.072 |
| $k = 3$ | | | |
| CPS data (with OPM income) | 3.9 | 0.640 | 0.025 |
| CPS data (with SPM income) | 4.0 | 0.643 | 0.026 |
| $k = 4$ | | | |
| CPS data (with OPM income) | 0.5 | 0.814 | 0.004 |
| CPS data (with SPM income) | 0.5 | 0.816 | 0.004 |
| Measure 2: | | | |
| $k = 1$ | 35.1 | 0.257 | 0.09 |
| $k = 2$ | 8.8 | 0.424 | 0.038 |
| $k = 3$ | 1.0 | 0.609 | 0.006 |

NOTES: $k$ is the threshold number of deprivations experienced by the individual to be identified as multidimensionally deprived. For each measure, we do not present results for the highest value of $k$ (5 for Measure 1, 4 for Measure 2) as $H$, $K$, and $M_0$ were close to zero then. OPM is the official poverty measure; "with OPM income" refers to the multidimensional measure with OPM income for material well-being. SPM is the supplemental poverty measure; "with SPM income" refers to the multidimensional measure.
SOURCE: Authors' calculations based on March 2013 CPS data.

***Personal Activities.*** A person is considered deprived if he or she was unemployed in the past week. This measure is adjusted for children and the elderly. For children (birth to age 17), the work dimension refers to the work status of the family head of the child. For the elderly (age 65 and over), the work dimension is not included in the measure.

***Insecurity.*** We use health insurance status as an indicator for economic security. A person is considered deprived if he or she is uninsured.

Our first measure of multiple deprivations includes the dimensions and indicators above, as presented in Table 1 under Measure 1. We also develop a second measure without material well-being as a dimension (Measure 2), where income deprivation is thus not taken into account. This second measure, when compared to the first measure, will help answer the question on the extent to which income poverty and multiple deprivations are correlated. If a large and significant correlation is found between income poverty, on the one hand, and multiple nonincome deprivations as per Measure 2, on the other hand, then income can be considered to be a good proxy for multiple deprivations.[5]

Some of the within thresholds above may not be appropriate for selected subgroups of the population. In particular, for persons aged 65 and above, having less than a high school

[5]We also conduct several sensitivity analyses across dimensions, on both the CPS and ACS data. Results are available in the Appendix.

TABLE 3

Characteristics of Selected Groups

| | | Measure 1 | | Measure 2 | | | Deprived in Two or More Dimensions But Not Income Poor | |
|---|---|---|---|---|---|---|---|---|
| | Total Population (1) | Deprived in Two or More Dimensions (2) | Deprived in Three or More Dimensions (3) | Deprived in Two or More Dimensions (4) | Deprived in Three or More Dimensions (5) | Income Poverty OPM Income Poor (6) | As Per OPM (7) | As Per 200% OPM (8) |
| Share of population | 1 | 0.150 | 0.039 | 0.088 | 0.010 | 0.148 | 0.065 | 0.026 |
| Deprived in OPM income | 0.148 | 0.630 | 0.855 | 0.373 | 0.460 | 1.000 | 0.000 | 0.000 |
| Deprived in health | 0.118 | 0.370 | 0.486 | 0.477 | 0.681 | 0.186 | 0.493 | 0.506 |
| Deprived in education | 0.128 | 0.558 | 0.750 | 0.719 | 0.854 | 0.299 | 0.710 | 0.661 |
| Deprived in employment | 0.057 | 0.231 | 0.371 | 0.316 | 0.575 | 0.123 | 0.301 | 0.337 |
| Deprived in health insurance | 0.154 | 0.533 | 0.702 | 0.654 | 0.947 | 0.296 | 0.651 | 0.644 |
| Deprived in two or more dimensions | 0.150 | 1.000 | 1.000 | 1.000 | 1.000 | 0.637 | 1.000 | 1.000 |
| Children | 0.234 | 0.196 | 0.142 | 0.114 | 0.066 | 0.337 | 0.090 | 0.070 |
| Nonelderly adults | 0.626 | 0.685 | 0.775 | 0.744 | 0.911 | 0.578 | 0.740 | 0.762 |
| Elderly | 0.140 | 0.119 | 0.084 | 0.142 | 0.022 | 0.086 | 0.171 | 0.169 |
| Women | 0.511 | 0.512 | 0.509 | 0.478 | 0.450 | 0.556 | 0.450 | 0.436 |

*continued*

TABLE 3

Continued

| | Total Population (1) | Measure 1 | | Measure 2 | | Income Poverty OPM Income Poor (6) | Deprived in Two or More Dimensions But Not Income Poor | |
|---|---|---|---|---|---|---|---|---|
| | | Deprived in Two or More Dimensions (2) | Deprived in Three or More Dimensions (3) | Deprived in Two or More Dimensions (4) | Deprived in Three or More Dimensions (5) | | As Per OPM (7) | As Per 200% OPM (8) |
| Race/ethnicity | | | | | | | | |
| White | 0.780 | 0.709 | 0.692 | 0.744 | 0.750 | 0.663 | 0.785 | 0.790 |
| White, not Hispanic | 0.629 | 0.396 | 0.340 | 0.399 | 0.355 | 0.407 | 0.438 | 0.483 |
| Hispanic—any race | 0.171 | 0.350 | 0.396 | 0.381 | 0.423 | 0.292 | 0.376 | 0.335 |
| Black | 0.129 | 0.199 | 0.223 | 0.171 | 0.183 | 0.236 | 0.132 | 0.121 |
| Asian | 0.053 | 0.040 | 0.003 | 0.038 | 0.025 | 0.041 | 0.042 | 0.049 |
| Nonnatives | 0.129 | 0.243 | 0.299 | 0.300 | 0.353 | 0.167 | 0.309 | 0.282 |
| In married families | 0.608 | 0.386 | 0.335 | 0.591 | 0.550 | 0.309 | 0.529 | 0.685 |
| In female-headed families | 0.158 | 0.264 | 0.275 | 0.282 | 0.314 | 0.347 | 0.168 | 0.178 |
| In male-headed families | 0.056 | 0.085 | 0.079 | 0.126 | 0.136 | 0.066 | 0.110 | 0.135 |
| Not in families or in unrelated subfamilies | 0.183 | 0.265 | 0.310 | 0.246 | 0.254 | 0.278 | 0.194 | 0.145 |
| Persons with disabilities | 0.093 | 0.183 | 0.194 | 0.203 | 0.144 | 0.134 | 0.200 | 0.187 |
| Persons in nonmetropolitan areas | 0.157 | 0.186 | 0.184 | 0.180 | 0.177 | 0.185 | 0.182 | 0.191 |
| *N* (weighted, in thousands) | 309,479 | 46,345 | 11,935 | 27,358 | 3,195 | 45,860 | 17,148 | 8,075 |

NOTES: All estimates are weighted with March supplement final weights. Income poor is based on the official poverty measure (OPM). Deprived in two of three or more dimensions is *H* using CPS data and OPM income as a dimension.
SOURCE: Authors' calculations based on March 2013 CPS data.

TABLE 4

Odds of Having Multiple Deprivations

| | Deprived in Two or More Dimensions Versus Rest of the Population | Deprived in Two or More Dimensions (Not Income Poor) Versus Rest of the Population | Deprived in Two or More Dimensions (Not Income Poor) Versus Income Poor |
|---|---|---|---|
| | (1) | (2) | (3) |
| Characteristics | | | |
| Children | 0.833*** | 0.385*** | 0.099*** |
| Nonelderly adults (reference category) | | | |
| Elderly | 0.612*** | 0.874*** | 1.244*** |
| Women | 0.943*** | 0.779*** | 0.564*** |
| White, not Hispanic (reference category) | | | |
| Hispanic—any race | 3.328*** | 3.376*** | 2.253*** |
| Black | 1.970*** | 1.454*** | 0.900* |
| Asian | 0.826*** | 0.700*** | 0.588*** |
| Nonnatives | 2.254*** | 2.527*** | 1.884*** |
| In married families (reference category) | | | |
| In female-headed families | 2.993*** | 1.868*** | 0.433*** |
| In male-headed families | 2.343*** | 2.161*** | 1.181** |
| Not in families or in unrelated subfamilies | 2.552*** | 1.238*** | 0.279*** |
| Disability | 3.305*** | 3.214*** | 2.759*** |
| Nonmetropolitan area | 1.786*** | 1.813*** | 1.303*** |
| Likelihood ratio | *31,796,004* | *14,068,905* | *10,615,270* |
| *N* | *192,067* | *164,590* | *20,522* |

NOTES: All estimates are weighted with March supplement final weights. Each column gives the results of a logistic model of the probability of experiencing multiple deprivations. The comparison group is noted in the header for each column. The table gives the odds ratio for each characteristic. Statistical significance was assessed using the Wald chi-square statistic. ***, **, * indicate significance of the difference at 1 percent, 5 percent, and 10 percent levels. Income poor is based on the official poverty measure (OPM) dimension.
SOURCE: Authors' calculations based on March 2013 CPS data.

diploma may not equate to a deprivation on a similar level to that faced by working-age persons who also lack a high school diploma yet are expected to compete for jobs in the labor market. Likewise, having fair health may not be a deprivation for older people. This article covers the entire U.S. population and more fine-tuned multidimensional measures may be developed for selected subgroups such as the elderly. However, as part of a robustness check in this article, with the CPS data, we use more restrictive thresholds for persons aged 65 and above, where having poor health (as opposed to having fair or poor health) is considered as being deprived in terms of health and having less than 10 grades of schooling is considered as being deprived in terms of education.

Weights are needed to aggregate across dimensions. There are different possible methods for setting up weights, for instance, asking people's opinions or using the observed distribution of deprivations (Decancq and Lugo, 2013). In this article, dimensions are given equal weights, in other words, they are considered as equally important. Weights are changed as part of a robustness check.

**Results**

We present results from analyses conducted using the CPS, providing detailed national estimates for 2012. Some of the results using the ACS are available in Tables A3 and A4. In addition, results from the sensitivity analyses we conducted are included in the Appendix.

We first calculated the tetrachoric correlations of the indicators (see Table A2). Correlations between deprivations range from a low of −0.006 between health and health insurance to a high of 0.415 between income and education. Correlation coefficients are thus low to medium for the indicators under use, which suggests that none of the indicators provides redundant information.

Table 2 gives results for the multidimensional measures $H$, $A$, and $M_0$ with $k$ varying from 1 to 4. Three sets of results are given, with family income as defined as in the OPM and also using family resources as under the SPM. The two sets of results are very similar to each other. Hence, we will only comment on the set of results with the measure using income under the OPM. When the number of deprivations ($k$) increases, as expected, headcount $H$ and adjusted headcount $M_0$ decrease, while $A$, the average deprivation share, increases. When $k = 1$, $H = 40.5$ percent, indicating that 41 percent of Americans suffer at least one deprivation in income, education, employment, health, or health insurance. When $k = 2$, $H = 15$ percent; in other words, 15 percent of Americans of all ages have two or more deprivations and thus experience multiple deprivations in 2012. Still with $k = 2$, $A = 0.471$, indicating that people with two or more deprivations are on average deprived in 47.1 percent of the five measured dimensions; and the adjusted headcount, $M_0$, stands at 0.071 when $k = 3$, $H$ is 3.9 percent, which goes down to $H = 0.5$ percent when $k = 4$.

Next, Table 3 presents results on the incidence, coincidental or not, of income poverty and multiple deprivations and on the characteristics of different groups. The incidence of deprivations in specific dimensions by characteristics is given in different columns for the (1) entire population, (2) individuals with two or more deprivations (Measure 1), (3) individuals with three or more deprivations (Measure 1), (4) individuals with two or more deprivations (Measure 2), (5) individuals with three or more deprivations (Measure 2), (6) people who are income poor, (7) individuals deprived in two or more dimensions but not income poor per OPM poverty measure, and (8) individuals deprived in two or more dimensions with income 200 percent or less of the OPM poverty measure.

Results in Column (1) indicate that deprivation rates by dimension vary from a low of 5.7 percent for employment to a high of 15.4 percent for health insurance. Deprivation rates for health and education stand at 11.8 and 12.8 percent, respectively. Although the rate of income poverty using OPM stands at 14.8 percent and is thus close to the 15 percent share of people with two or more deprivations,[6] results will show differences in the compositions of these two populations.

Columns (2) and (3) focus on people with two or more and three or more deprivations, respectively, using Measure 1, our measure that includes five dimensions. Column (2) presents individuals with two or more deprivations. Of the estimated 46.3 million Americans who are deprived in two or more dimensions, 63 percent of them are income poor. Besides income, deprivation rates are highest for education (55.8 percent) and health

[6]Deprivation rates by dimension are consistent with relevant published estimates for health insurance (DeNavas-Walt, Proctor, and Smith, 2013), education (Census Bureau, 2013), health (CDC, 2013), and income poverty (DeNavas-Walt, Proctor, and Smith, 2013). The employment deprivation rate is lower than the official unemployment rate for 2012 (BLS, 2013). This comes from the use of different formulas. The employment deprivation rate is the ratio of unemployed to the population, while the official unemployment rate is the ratio of unemployed to the labor force (unemployed and employed).

insurance (53.3 percent). Column (3) gives results for individuals with three or more deprivations. This group accounts for 3.9 percent of the population. A large majority of this group (85.5 percent) is income poor, education deprived (75 percent), and health insurance deprived (70.2 percent). The group with three or more deprivations totals 11.9 million people, 1.7 million of whom are not income poor (figure not given in Table 3).

Columns (4) and (5) present individuals with multiple deprivations using Measure 2, which does not include material well-being (income) as a dimension. As expected, the overlap with income poverty is more limited than with Measure 1. Only 37.3 percent of those with two or more deprivations and 46 percent of those with three or more deprivations are income poor. The group with two or more (nonincome) deprivations totals 27.4 million people, while the group with three or more nonincome deprivations totals 3.2 million individuals.

Column (6) focuses on the income poor, which can be compared to the multiply deprived in earlier columns. In Column (6), 63.7 percent of the income poor are deprived in two or more dimensions using Measure 1, while in Column (2), 63 percent of those with two or more dimensions are income poor. While the two groups are similar in size, they only partially overlap. Comparing now the characteristics of the income poor and the multiply deprived, children comprise a larger proportion of those who are income poor (33.7 percent) than of those who are deprived in two or more dimensions (19.6 percent), while whites make up the majority of both groups (66.3 and 70.9 percent, respectively). A comparison of the characteristics of the two groups in Columns (6) and (2) shows that compared to the income poor, those with two or more deprivations are more likely to be working age, Hispanics, nonnatives, in married families, and to have a disability. Compared to the group of income poor in Column (6), the group with three or more deprivations in Column (3) includes higher proportions of individuals who are Hispanic, nonnative, and have disabilities.

Columns (7) and (8) give results for additional groups of interest. In Column (7), those with two or more deprivations who are not income poor account for 5.5 percent of the population or 17.1 million people. Education and health insurance deprivations are the most frequently found deprivations in this group. Nearly three-quarters of the population that is deprived in two or more dimensions is working-age and nearly 79 percent are white. Compared to the income poor, however, this group has higher proportions of Hispanics, working-age persons, nonnatives, and those in married families. A similar profile is found in Column (8) for the group deprived in two or more dimensions but not income poor using the 200 percent OPM poverty line. This group accounts for 2.6 percent of the population and 8 million individuals.

The demographic profile of the different groups of interest by multiple deprivation or income poverty status can be further considered using a multivariate logistic regression model to compare persons with multiple (two or more) deprivations to the rest of the population and to the income poor, as presented in Table 4. Column (1) gives the results of a logistic regression of the probability of experiencing two or more deprivations.[7] As shown in Column (1), the odds of experiencing two or more deprivations are significantly higher for Hispanics, blacks, nonmarried households, immigrants, persons with disabilities, and persons in nonmetropolitan areas, and lower for children, women, and Asians. Columns (2) and (3) give the results of logistic regression models of the probability of experiencing two or more deprivations while not being income poor: the comparison group is the rest of the population in Column (2) and the income poor in Column (3). Results in

[7]This is in line with Measure 1.

Column (2) are overall similar to those in Column (1). In Column (3), persons with multiple deprivations (but not income poor) are more likely than persons who are income poor to be Hispanics, immigrants, in male-headed families, to have a disability, and to live in nonmetropolitan areas. Blacks are equally likely to have multiple (nonincome) deprivations and to be income poor. While children, women, and Asians are less likely to experience multiple (nonincome) deprivations relative to income poverty, being Hispanic, an immigrant, and having a disability are the characteristics associated with the highest odds ratio of having multiple deprivations relative to being income poor. Overall, Table 4 shows that the demographic profile of persons with multiple deprivations is different from the rest of the population and from the income poor.

## Discussion

To our knowledge, this article develops a first measure of multiple overlapping deprivations for the U.S. population using the Alkire and Foster (2011) measure. This article has six main results of interest, which are discussed in turn. First, multidimensional analysis of deprivations is feasible in the U.S., although limited here to few dimensions given constraints in public-use data sets. Some data sets could be altered to provide data that enhance the analysis of multiple overlapping deprivations. For instance, in the CPS, the timing of the collection of data on political participation and social connectedness could be altered to enable the matching of these data with the income data collected as part of ASEC. Yet other data sets with a longitudinal component such as the Survey of Income and Program Participation or the Panel Survey of Income Dynamics would allow researchers to investigate the dynamics of multiple deprivations.

Second, we find that deprivations are not uncommon in the U.S. Indeed, 41 percent of Americans have at least one deprivation. A sizeable share of the U.S. population experiences multiple deprivations: 15 percent of individuals have two or more deprivations and 4 percent have three or more deprivations. The study of multiple deprivations is relevant in a high-income country such as the U.S., although a lot of the applications of multiple deprivations have been so far in low- and middle-income countries. We reach the same conclusion as Whelan, Nolan, and Maître (2012), who applied the same method to 28 countries in the European Union. Although their data and dimensions are mostly different from the ones in this article,[8] they find that the modal share of the population experiencing at least one deprivation in the different countries is 43 percent, which is close to the 41 percent found in this article. The share of people experiencing two or more deprivations varies greatly across countries, from a low of 8.3 percent in Norway to a high of 59.2 percent in Romania. The country with the share the closest to the 15 percent found for the U.S. in this article is France with 16.2 percent.

Third, with the multidimensional measure developed in this article, the size of the population that has multiple deprivations is similar to the size of the population that is income poor at about 15 percent, although the composition of these two groups differs by demographics. For instance, the odds of experiencing multiple deprivations are significantly higher for Hispanics, immigrants, and persons with disabilities. The choice of measurement can have implications that differ by demographic group and for policy discussions and resource allocation. Although measurements based solely on income might lead to

[8]Their dimensions are as follows: fulfillment of basic needs, consumption, health, and neighborhood environment.

discussions around the relative utility of income assistance or tax relief programs, measurements based on multiple deprivations might provide a better assessment of the relative strength of policy options, including those that partner income assistance and tax relief programs with other specific types of policy responses, including educational assistance, employment services, or health-care services.

Fourth, if one includes people who are either income poor or have multiple deprivations, 20.4 percent of the U.S. population can be broadly considered as disadvantaged. If one uses 200 percent of the OPM income threshold for the material well-being dimension, the share of people who are either income poor or have multiple deprivations rises to 36.7 percent. This percentage is similar to that noted by Harrington many decades ago when he stated that one-third of Americans lived "below those standards which we have been taught to regard as the decent minimums for food, housing, clothing and health" (Harrington, 1962). Of course, the measures and data used in this article are very different and not comparable to the methods and data used in the 1960s by Harrington (1962), and this article does not provide an assessment of anti-poverty policies since. Clearly, though, as of 2012, progress is needed to improve well-being and reduce deprivations in the U.S.

Fifth, while the results presented here suggest that certain subgroups of the population are more likely to experience income poverty or multiple deprivations, the results overall provide further evidence that income poverty and deprivations occur across all demographics. As mentioned earlier, among those who are income poor or deprived in two dimensions, most are working-age adults and most are white. Variations by gender are slight. Deprivations are not isolated to a certain subset of the population and thus must remain a concern within broad policy circles. Indeed, our findings suggest that the majority of persons experiencing multiple deprivations, at a population level in the U.S., are white, working-age adults. This justifies extending to the entire population the study of multiple deprivations that tended to be limited to urban areas and minority groups as part of the underclass literature in the 1990s (Mincy, 1994).

Finally, about a third of those with two or more deprivations are not income poor (17.1 million people). Those with multiple deprivations tend to have different demographic characteristics compared to the income poor. Overall, results of the sensitivity analysis confirm the finding that income is not a good proxy for multiple deprivations in the U.S. In particular, as the income threshold is increased, more of those with multiple deprivations are income poor but a sizeable share of the income poor do not then have multiple deprivations. This result suggests that income poverty measures alone may not capture multiple deprivations. More efforts are needed to monitor and investigate multiple deprivations, including among certain subpopulations that are more at risk for multiple deprivations but are not income poor. In addition, future research can explore the temporal nature of poverty within the U.S., adopting approaches similar to those used by Alkire et al. (2014).

## Conclusions

The multidimensional measure developed here using the Alkire and Foster (2011) method provides a new way of examining deprivations in the U.S., offering new insights. A multidimensional measure that includes material well-being (income), health, education, personal activities (work), and insecurity (health insurance) is a start to developing a multidimensional measure of deprivations for use in the U.S. Further measures need to be developed, especially for groups where other dimensions and indicators may be relevant, such as children or the elderly.

In 2012, the overall percentage of Americans who experience overlapping multiple deprivations is relatively similar to the headcount of income poverty (15 vs. 14.8 percent). However, the composition of these two groups differs. Nearly 6 percent of the U.S. population experiences multiple dimensions, but is not income poor. This result shows the potential usefulness of including nonincome as well as income components to identify the disadvantaged and it may have implications for the targeting of social policies.

Results in this article do not suggest that a measure of multiple deprivations should replace the income-based poverty measures that are commonly used in the U.S. Instead, results suggest that income is not a good proxy for the experience of multiple deprivations by the same individuals, which thus warrants further measurement and research efforts in this area. In the U.S., it is possible to not meet official measures of income poverty, but to still face multiple deprivations. Although it is beyond the scope of this article to offer an assessment of specific programs or broad policies such as the War on Poverty, the measure of overlapping multiple deprivations that is developed here provides an additional tool to measure progress in the extent to which the simultaneous experience of deprivations has been affected by policy or has changed over time and could be used in further research.[9] Such a measure could be used for the evaluation of anti-poverty programs that may target or succeed in addressing selected deprivations.

## Appendix

### *Sensitivity Analysis*

A sensitivity analysis was conducted for several of the results. In particular, results using ACS instead of CPS data are presented in Tables A3, A4, and A5, which can be compared to Tables 1, 2, and 3, respectively. ACS results are overall very consistent with CPS results. For the sensitivity analysis with the ACS, health status is not available: we use the six questions of the ACS on functional and activity limitations. The threshold is that the individual needs to report at least one limitation. Functional and activity limitations are also available in the CPS. However, we prefer to use overall health status as a measure of health. Functional and activity limitations are in general understood as measures of disability, which is different from health, but related to health as consequence of a health problem in interaction with the physical and social environment (WHO, 2001).

In addition, with the CPS data, Table A6 gives headcount results when we use the SPM indicator for material well-being or when we change within-dimension thresholds of selected dimensions of the multidimensional measure. Using the SPM instead of the OPM indicator gives similar headcounts, as shown in the first row of Table A6. The headcount of having two or more deprivations stands at 15.2 percent instead of 15 percent with the multidimensional measure that uses SPM versus OPM for income deprivation, respectively. The partial overlap between the multiple deprivation headcount and the SPM headcount is also similar to that with the OPM, with about one-third (5.4 percent of the total population) of those with two or more deprivations not being income poor. Other rows of Table A6 give results of the multidimensional measure when OPM income is used as the material well-being indicator but one of the within-dimension thresholds is changed compared to the

[9]The measure developed in this article with CPS data could be used to cover the 1994 to present period. Health status is not available in CPS prior to 1994.

TABLE A1

Data Review

| | ACS One Year | ACS Three or Five Years | CPS | SIPP | PSID |
|---|---|---|---|---|---|
| Material well-being | | | | | |
| Family income | ☑ | ☑ | ☑ | ☑ | ☑ |
| Housing conditions | ☑ | ☑ | | ☑ | |
| Material hardship | | | | ☑ | |
| Wealth | | | | ☑ | ☑ |
| Health | | | | | |
| Overall health status | | | ☑ | ☑ | ☑ |
| Functional/activity limitations | ☑ | ☑ | ☑ | ☑ | |
| Education | | | | | |
| Educational attainment | ☑ | ☑ | ☑ | ☑ | ☑ |
| Personal activities including work | | | | | |
| Employment status | ☑ | ☑ | ☑ | ☑ | ☑ |
| Political voice and governance | | | | | |
| Political participation | | | ☑ | | |
| Social connections and relationship | | | | | |
| Social connectedness | | | ☑ | | |
| Environment (present and future) | | | | | |
| Restricted access data can be matched with county level data on the environment | | ☑ | | | |
| Insecurity of an economic as well as physical nature | | | | | |
| Health insurance | ☑ | ☑ | ☑ | ☑ | ☑ |
| Food security | | | ☑ | | |
| Safety of neighborhood | | | | ☑ | |
| Restricted access data can be matched with county level data on safety | ☑ | | | | |

NOTES: ACS, American Community Survey; CPS, Current Population Survey; SIPP, Survey of Income and Program Participation; PSID, panel study of income dynamics.
☑ indicates that the data are available.
☑ indicates that the data are available in the CPS but cannot be linked to the core indicators such as income.
☑ indicates that the data are not available in the data set but can be linked to other relevant data at the county level using a restricted version of the ACS with county indicators.

base measure presented in earlier tables. In the second row, when stricter within-dimension health and education thresholds are used for persons aged 65 and above, the headcount of having two or more deprivations is reduced from 15 to 13.9 percent. In subsequent rows, thresholds for unemployment and income are loosened in turn. Relaxing the threshold for unemployed to also include discouraged workers and conditional workers, results remain very similar. In the final two rows, to be considered income deprived, one needs to have a family income below 150 and 200 percent of the OPM threshold, respectively. As expected, the headcounts go up. For instance, using the 200 percent threshold, the headcount of individuals with two of more dimensions goes up to 22.2 from 15 percent in the base measure in Table 3. Of interest then is the change in the overlap between the income measure and the multidimensional measure presented in Columns (d) and (e). As the income threshold increases to 150 and 200 percent, a higher share of those

TABLE A2

Tetrachoric Correlation Coefficients of Dimension Indicators

| | Income Deprivation | Health Deprivation | Education Deprivation | Employment Deprivation | Health Insurance |
|---|---|---|---|---|---|
| OPM income deprivation | 1 | 0.211 | 0.415 | 0.308 | 0.313 |
| Health deprivation | | 1 | 0.265 | 0.034 | −0.006 |
| Education deprivation | | | 1 | 0.156 | 0.283 |
| Employment deprivation | | | | 1 | 0.228 |
| Health insurance | | | | | 1 |
| SPM income deprivation | 1 | 0.237 | 0.38 | 0.262 | 0.325 |

NOTES: OPM, official poverty measure; SPM, supplemental poverty measure. The income deprivation in the first column refers in turn to OPM income and SPM income.
SOURCE: Authors' calculations based on March 2013 CPS data.

TABLE A3

Tetrachoric Correlation Coefficients of Dimension Indicators Using ACS Data

| | OPM Income Deprivation | Health Deprivation | Education Deprivation | Employment Deprivation | Health Insurance Deprivation |
|---|---|---|---|---|---|
| OPM income deprivation | 1 | 0.167 | 0.387 | 0.166 | 0.312 |
| Health deprivation | | 1 | 0.274 | 0.043 | −0.140 |
| Education deprivation | | | 1 | 0.131 | 0.275 |
| Employment deprivation | | | | 1 | 0.339 |
| Health insurance deprivation | | | | | 1 |

SOURCE: Authors' calculations based on 2012 ACS data.

TABLE A4

Measures of Multiple Overlapping Deprivations (ACS, 2012)

| | Headcount (H) | Intensity (A) | Adjusted Headcount ($M_0$) |
|---|---|---|---|
| $k = 1$ | | | |
| ACS data (with OPM income) | 40.95% | 0.305 | 0.125 |
| $k = 2$ | | | |
| ACS data (with OPM income) | 15.28% | 0.468 | 0.071 |
| $k = 3$ | | | |
| ACS data (with OPM income) | 3.71% | 0.637 | 0.024 |
| $k = 4$ | | | |
| ACS data (with OPM income) | 0.43% | 0.814 | 0.004 |

NOTES: $k$ is the threshold number of deprivations experienced by the individual to be identified as multidimensionally disadvantaged. OPM is the official poverty measure; "with OPM income" refers to the multidimensional measure with OPM income for material well-being.
SOURCE: Authors' calculations based on 2012 ACS data.

with two or more deprivations are income deprived. For instance, 2.6 percent of the population is deprived in two or more deprivations but is not income poor with the 200 percent OPM threshold compared to 5.5 percent with the OPM threshold as presented in Table 3.

TABLE A5

Characteristics of Selected Groups (ACS, 2012)

| | | Measure 1 | | | |
|---|---|---|---|---|---|
| | Total Population (1) | Deprived in Two or More Dimensions (2) | Deprived in Three or More Dimensions (3) | Income Poverty Income Poor (4) | Deprived in Two or More Dimensions, But Not Income Poor (5) |
| Share of population | 1 | 0.153 | 0.0371 | 0.158 | 0.0557 |
| Deprived in income | 0.158 | 0.635 | 0.876 | 1.000 | 0.000 |
| Deprived in health | 0.121 | 0.339 | 0.428 | 0.172 | 0.442 |
| Deprived in education | 0.120 | 0.527 | 0.708 | 0.266 | 0.689 |
| Deprived in employment | 0.067 | 0.299 | 0.468 | 0.161 | 0.369 |
| Deprived in health insurance | 0.147 | 0.509 | 0.682 | 0.263 | 0.652 |
| Deprived in two or more dimensions | 0.153 | 1 | 1 | 0.615 | 1 |
| Children | 0.238 | 0.206 | 0.149 | 0.339 | 0.086 |
| Nonelderly adults | 0.626 | 0.674 | 0.769 | 0.580 | 0.736 |
| Elderly | 0.136 | 0.120 | 0.082 | 0.081 | 0.178 |
| Women | 0.511 | 0.507 | 0.497 | 0.553 | 0.444 |
| Men | 0.489 | 0.493 | 0.503 | 0.447 | 0.556 |
| Race/ethnicity | | | | | |
| White | 0.805 | 0.748 | 0.741 | 0.708 | 0.804 |
| White, not Hispanic | 0.643 | 0.426 | 0.386 | 0.448 | 0.459 |
| Hispanic—any race | 0.170 | 0.334 | 0.367 | 0.273 | 0.354 |
| Black | 0.131 | 0.194 | 0.208 | 0.229 | 0.138 |
| Asian | 0.054 | 0.041 | 0.032 | 0.045 | 0.044 |
| Nonnatives | 0.131 | 0.236 | 0.278 | 0.160 | 0.301 |
| In married families | 0.599 | 0.377 | 0.321 | 0.287 | 0.529 |
| In female-headed families | 0.174 | 0.312 | 0.196 | 0.379 | 0.219 |
| In male-headed families | 0.063 | 0.101 | 0.132 | 0.087 | 0.109 |
| Other | 0.164 | 0.210 | 0.351 | 0.247 | 0.143 |
| Persons with disabilities | 0.121 | 0.339 | 0.428 | 0.172 | 0.442 |
| *N* (weighted; in thousands) | 304,923 | 46,580 | 11,325 | 48,133 | 16,985 |

NOTE: All estimates are weighted with person weights.
SOURCE: Authors' calculations based on 2012 ACS data.

TABLE A6

Sensitivity Analysis: Headcounts with Different Multidimensional Measures (MM) and Overlap with Income Poverty

| | Deprived in One or More Dimensions ($H$ with $k = 1$) (a) | Deprived in Two or More Dimensions ($H$ with $k = 2$) (b) | Deprived in Three or More Dimensions ($H$ with $k = 3$) (c) | Deprived in Two or More Dimensions But Not Income Poor[a] (d) |
|---|---|---|---|---|
| MM with SPM income threshold[b] | 0.412 | 0.152 | 0.040 | 0.054 |
| MM with stricter education and health thresholds for persons aged 65 and above[c] | 0.378 | 0.139 | 0.036 | 0.048 |
| MM with looser within-dimension threshold | | | | |
| MM with expanded unemployment dimension[b] | 0.408 | 0.153 | 0.040 | 0.062 |
| MM with 150% OPM income threshold[b] | 0.447 | 0.187 | 0.054 | 0.038 |
| MM with 200% OPM income threshold[b] | 0.497 | 0.222 | 0.065 | 0.026 |

[a]In Column (d), income refers to the income measure used in MM (multidimensional measure). For instance, in the MM with SPM as income dimension, Column (d) gives the share of individuals who have two or more deprivations but are not income poor using the SPM measure.
[b]MM stands for multidimensional measure, and refers to the headcount in Alkire and Foster (2011). Dimensions are as in Table 6 unless otherwise noted.
[c]Dimensions are as in Table 6, except for persons aged 65 and above for whom one has to have ninth grade or less to be considered deprived in terms of education and one has to report poor health in order to be considered deprived in terms of health.
SOURCE: Authors' calculations using March 2013 CPS.

**REFERENCES**

Alkire, S. 2007. "Choosing Dimensions: The Capability Approach and Multidimensional Poverty." Pp. 89–119 in N. Kakwanit and J. Silber, eds., *The Many Dimensions of Poverty*. New York: Palgrave-MacMillan.

Alkire, S., M. Apablaza, S. R. Chakravarty, and G. Yalonetzky. 2014. *Measuring Chronic Multidimensional Poverty: A Counting Approach*. Oxford, UK: Oxford Poverty and Human Development Initiative. Available at ⟨http://www.ophi.org.uk/wp-content/uploads/OPHIWP075.pdf⟩.

Alkire, S., and J. Foster. 2011. "Counting and Multidimensional Poverty Measurement." *Journal of Public Economics* 95:476–87.

Alkire, S., and M. E. Santos. 2010. "Acute Multidimensional Poverty: A New Index for Developing Countries." *Working Paper* 38. Oxford, UK: Oxford Poverty and Human Development Initiative.

Alkire, S., and S. Seth. 2013. "Selecting a Targeting Method to Identify BPL Households in India." *Social Indicators Research* 112:417–46.

Bailey, M. J., and S. Danziger, eds. 2013. *Legacies of the War on Poverty*. The National Poverty Center Series on Poverty and Public Policy. New York: Russell Sage Foundation.

Beja, E. 2013. "Subjective Well-Being Approach to the Valuation of International Development: Evidence for the Millennium Development Goals." *Social Indicators Research* 111:141–59.

Blank, R. M. 2008. "Presidential Address: How to Improve Poverty Measurement in the United States." *Journal of Policy Analysis and Management* 27:233–54.

BLS. 2013. *Labor Force Statistics from the Current Population Survey*. Washington, DC: Bureau of Labor Statistics. Available at ⟨http://data.bls.gov/timeseries/LNS14000000⟩.

Bohn, S., C. Danielson, M. Levin, M. Mattingly, and C. Wimer. 2013. *The California Poverty Measure: A New Look at the Social Safety Net*. San Francisco, CA: Public Policy Institute of California. Available at ⟨http://www.faccc.org/wp-content/uploads/2014/11/ca_poverty_measure_ppic.pdf⟩.

Bourguignon, F., and S. R. Chakravarty. 2003. "The Measurement of Multidimensional Poverty." *Journal of Economic Inequality* 1:25–49.

Brucker, D. L., S. Mitra, N. Chaitoo, and J. Mauro. 2014. "More Likely to be Poor Whatever the Measure: Working Age Persons with Disabilities in the United States." *Social Science Quarterly* 96:273–96.

CDC. 2013. *Summary Health Statistics for the United States: National Health Interview Survey, 2012*. Center for Disease Control and Prevention. Available at ⟨http://www.cdc.gov/nchs/data/series/sr_10/sr10_259.pdf⟩.

Census Bureau. 2013. *Educational Attainment in the United States 2013*. Available at ⟨http://www.census.gov/hhes/socdemo/education/data/cps/2013/tables.html⟩.

Chung, Y., J. B. Isaacs, and T. Smeeding. 2013. "Advancing Poverty Measurement and Policy: Evidence from Wisconsin During the Great Recession." *Social Service Review* 87:525–55.

Citro, C. F., and R. T. Michael. 1995. *Measuring Poverty: A New Approach*. Washington, DC: National Academies Press.

Ciula, R., and C. Skinner. 2015. "Income and Beyond: Taking the Measure of Child Deprivations in the United States." *Child Indicators Research* 8(3):491–515

Couch, K. A., and M. A. Pirog. 2010. "Poverty Measurement in the United States, Europe and Developing Countries." *Journal of Policy Analysis and Management* 29:217–26.

Decancq, K., and M. A. Lugo. 2013. "Weights in Multidimensional Indices of Well-Being: An Overview." *Econometric Reviews* 32:7–34.

DeNavas-Walt, C., B. D. Proctor, and J. C. Smith. 2013. "Income, Poverty and Health Insurance Coverage in the United States: 2012." *U.S. Census Bureau Current Population Reports* P60-245. Washington, DC: U.S. Census Bureau. Available at ⟨https://www.census.gov/prod/2013pubs/p60-245.pdf⟩.

Duclos, J., D. Sahn, and S. D. Younger. 2006. "Robust Multidimensional Poverty Comparisons with Discrete Indicators of Well-Being." *Cahiers de recherche Working Paper* 06-28. Québec, Canada: CIRPÉE.

Fox, L., I. Garfinkel, N. Kaushal, J. Waldfogel, and C. Wimer. 2014. "Waging War on Poverty: Historical Trends in Poverty Using the Supplemental Poverty Measure." *NBER Working Paper* 19789. Cambridge, MA: National Bureau of Economic Research.

Harrington, M. 1962. *The Other America: Poverty in the United States*. New York: MacMillan.

Hutto, N., J. Waldfogel, N. Kaushal, and I. Garfinkel. 2011. "Improving the Measurement of Poverty." *Social Service Review* 85:39–74.

Kasarda, J. D. 1992. "The Severely Distressed in Economically Transforming Cities." Pp. 65–74 in A. V. Harrell and G. E. Peterson, eds., *Drugs, Crime and Social Isolation*. Washington, DC: Urban Institute Press.

Madonia, G., M. F. Cracolici, and M. Cuffaro. 2013. "Exploring Wider Well-Being in the EU-15 Countries: An Empirical Application of the Stiglitz Report." *Social Indicators Research* 111:117–40.

Marlier, E., and A. B. Atkinson. 2010. "Indicators of Poverty and Social Exclusion in a Global Context." *Journal of Policy Analysis and Management* 29:285–304.

Mincy, R. B. 1994. "The Underclass: Concept, Controversy, and Evidence." Pp. 109–46 in S. H. Danziger, G. D. Sandefur, and D. H. Weinberg, eds., *Confronting Poverty: Prescription for Change*. Cambridge, MA: Harvard University Press.

Mincy, R. B., I. V. Sawhill, and D. A. Wolf. 1990. "The Underclass: Definition and Measurement." *Science* 248:450–53.

Mitra, S., K. Jones, B. Vick, D. Brown, E. McGinn, and M. J. Alexander. 2013. "Implementing a Multidimensional Poverty Measure Using Mixed Methods." *Social Indicators Research* 110:1061–81.

Narayan, D., R. Patel, K. Schafft, A. Rademacher, and S. Koch-Schulte. 2000. *Voices of the Poor: Can Anyone Hear Us?* Washington, DC: World Bank.

Neubourg, C., J. Chai, M. Milliano, I. Plavgo, and Z. Wei. 2011. "CC-MODA Study Technical Note Multiple Overlapping Deprivation Analysis." *Office of Research Working Paper* WP-2012-05. Florence, Italy: UNICEF. Available at ⟨http://www.unicef-irc.org/MODA/⟩.

OECD. 2011. *How is Life? Measuring Well-Being*. Paris: Organization of Economic Cooperation and Development Publishing.

O'Hare, W. P., and B. Curry-White. 1992. *The Rural Underclass: Examination of Multiple-Problem Populations in Urban and Rural Settings*. Mimeo. Washington, DC: Population Reference Bureau.

Short, K. 2013. "The Research Supplemental Poverty Measure: 2012." *U.S. Census Bureau Current Population Reports* P60-247. Washington, DC: U.S. Census Bureau.

Smeeding, T., J. B. Isaacs, and K. A. Thornton. 2014. *Wisconsin Poverty Report: Jobs Recover to Help Reduce Poverty in 2012*. Madison, WI: University of Wisconsin, Institute for Research on Poverty. Available at ⟨http://www.irp.wisc.edu/research/WisconsinPoverty/pdfs/WI-PovertyReport2014.pdf⟩.

Stiglitz, J. E., A. K. Sen, and J. P. Fitoussi. 2009. *Report by the Commission on the Measurement of Economic Performance and Social Progress*. Paris: Commission on the Measurement of Economic Performance and Social Progress. Available at ⟨www.stiglitz-sen-fitoussi.fr/en/index.htm⟩.

Tsui, K. Y. 2002. "Multidimensional Poverty Indices." *Social Choice and Welfare* 19:69–93.

UNDP. 2010. "The Real Wealth of Nations: Pathways to Human Development." *Human Development Report 2010*. New York: U.N. Nations Development Program.

Waglé, U. R. 2008. "Multidimensional Poverty: An Alternative Measurement Approach for the United States?" *Social Science Research* 37:559–80.

Whelan, C. T., B. Nolan, and B. Maître. 2012. "Multidimensional Poverty Measurement in Europe: An Application of the Adjusted Headcount Approach." *Working Papers* 201211. Geary Institute, University College Dublin.

WHO. 2001. *The International Classification of Functioning, Disability and Health (ICF)*. Geneva: WHO.

Wilson, W. J. 1987. *The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy*, 2nd ed. Chicago, IL: University of Chicago Press.