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Income Poverty and Multiple Deprivations in a High
Income Country: the case of the United States

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

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Abstract: This paper 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. Using Current Population Survey and American Community Survey data, we find that the experience of multiple deprivations affects 15 percent of Americans. We also find that income poverty is not a reliable proxy to measure multiple deprivations: 5.5% of the population, an estimated 17.1 million Americans, experience multiple deprivations while they are not income poor. The odds of experiencing multiple deprivations are two to three times higher for Hispanics, immigrants and persons with disabilities. Further measurement efforts are needed on overlapping multiple deprivations in the US as such measures can be used in policy evaluation and monitoring.

Keywords: multiple deprivations; poverty; multidimensional poverty; United States.

Highlights:
- A measure of multiple overlapping deprivations is developed for the United States.
- Multiple deprivations are not rare in the United States: they affect 15 percent of Americans.
- Income poverty cannot be used as a proxy for multiple deprivations.
- Measures of multiple deprivations can provide new insights for research and policy.

* An earlier version of this paper was titled "Poverty and Disadvantage through a Multidimensional Lens in the United States"

1. INTRODUCTION

Antipoverty 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 wellbeing rather than purely as a lack of income or other financial resources (e.g. Narayan et al, 2000). Internationally, the idea that non-income and more broadly nonmaterial dimensions of wellbeing need to be taken into consideration for the measure of social progress has recently gained prominence (Stiglitz, Sen and Fitoussi 2009; OECD, 2011; Narayan et al, 2000). The influential report by Stiglitz et al. (2009) has informed recent research on subjective wellbeing and human development on an international scale (Beja, 2013; Madonia, Cracolici, and Cuffaro, 2013). At the same time, the measurement of multiple deprivations has made a lot of progress in the past decade (Alkire and Foster 2011; Bourguignon and Chakravarty 2003; Duclos, Sahn and Younger, 2006; Tsui, 2002). Several multidimensional measures have been developed and used internationally, in particular the Multidimensional Poverty Index (MPI) (Alkire and Santos, 2010; UNDP, 2010) and the Multiple Overlapping Deprivations Analysis (Neubourg, Chai, Milliano, Plavgo, and Wei, 2011). Some nations, such as Mexico, have adopted such measures as official

poverty measures. This work has showed that in some countries, the analysis of multiple deprivations and income poverty sometimes lead to different groups being identified as disadvantaged, leading to a different and complementary profile of poverty (e.g. Alkire and Seth, 2014; Brucker et al., 2015). However, multidimensional measures have not been universally embraced. Criticisms of such measures can be found, for instance, in Ravallion (2011), who prefers a "dashboard approach", where dimensions of wellbeing are monitored separately. Ravallion (2011) stresses the arbitrariness of the selection of dimensions and their weights and prefers instead to use household expenditures as a poverty metric, where prices are the weights for dimensions[1].

In high-income countries and in the U.S. in particular, to date, very little research and policy attention has been given to the study of multiple deprivations using recent measurement tools. Using a latent variable modeling approach, Wagle (2008) finds that the multidimensional approach yields poverty measurement outcomes that are overall consistent with those of the income or consumption approaches. However, he also finds that some groups come out relatively differently with a multidimensional measure. Later work by Wagle (2014), applying a modified multidimensional measure approach to data from the 2004 U.S. General Social Survey, demonstrates variations in multidimensional poverty by race. We extend the work conducted by Wagle (2008, 2014) by using a recent data set that includes income data to study overlaps between income poverty and multiple overlapping dimensions. In this

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[1] More of the criticisms can be found in Ravallion (2011). A response to these criticisms is in Alkire, Foster and Santos (2011).

paper, using Amartya Sen's capability approach as a conceptual framework (Sen, 1985, 1999) and exploiting recent advances in the measurement of multidimensional poverty, we start to develop a measure of multidimensional poverty for the U.S. and thus answer recent calls for new and different types of poverty measures (Blank, 2008). 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. In the U.S. to date, very little research and policy attention has been given to multidimensional poverty using this type of measure, except for studies of specific population groups (e.g. Brucker, Mitra, Chaitoo, and Mauro, 2015; Ciula and Skinner, 2014; Mitra, Jones, Vick, Brown, McGinn and Alexander, 2013). 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.

Because in the U.S., the notion of poverty is understood by the public and is used by policy makers and politicians as material deprivation (Citro and Michael, 1995) or income deprivation (Mincy, 1994), in this paper, 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 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 no, what are the characteristics of the multiply deprived?

The main objective of this paper 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.

2. BACKGROUND

In the U.S., poverty is generally measured in one of two ways. The most
commonly used measure is the official poverty measure. The official poverty
measure relies solely on a family's income, and is based on a set of pre-tax
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 official poverty measure (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. (Chung, Isaacs, and Smeeding, 2013; Hutto, Waldfogel, Kaushal, and Garfinkel 2011; 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. The SPM family resources are defined as the value of cash income from all sources plus the value of in-kind benefits that are available to buy the basic bundle of goods minus necessary expenses for critical goods and services, including income and payroll taxes, childcare and other work-related expenses, child support payments to another household, and medical out-of-pocket costs. 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, Garfinkel, Kaushal, Waldfogel and Wimer, 2014) or the situation of specific groups (Brucker et al., 2015) and geographies (e.g. Bohn et al. 2013 for California, Smeeding et al. 2014 for Wisconsin)

This paper develops a measure of multiple deprivations for the U.S. and beside the poverty measurement literature described above, it is directly related to two literatures. First, 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 in the 1980s and 1990s (e.g. Wilson, 1987). The term 'underclass' has been used to describe a population that is affected by income poverty and social problems such as changing family

structures, labor force nonparticipation, violence and dependence on welfare[2].

The assessment of simultaneous deprivations done in this paper seems thus to

be in line with this earlier work on the measurement of the underclass and

extends it to the general population.

Another relevant literature in the U.S. context is that of policy and program

monitoring and evaluation. Since the War on Poverty was launched in 1964, a

number of policies have taken effect in different dimensions of wellbeing (e.g.,

income, food security, healthcare, education, legal services). Currently in the U.S.,

however, certain subgroups of the population, including Blacks, females, female-

headed households, and non-native populations, continue to face disparities in

income, education, employment, and health (Beckles and Truman, 2014;

DeNavas-Walt, Proctor, and Smith, 2013; Brady and Burroway, 2012; U.S.

Department of Labor, 2014).   Assessments of the War on Poverty consider

progress dimension by dimension (e.g., Bailey and Danziger, 2013; Danziger,

Sandefur and Weinberg, 1994; Haveman, 1987). Measures and data are lacking

to provide an assessment of the War on Poverty on overall wellbeing, and

measures of multiple deprivations, as developed in this paper, might help move

in this direction

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

3. METHODOLOGY

3.1 MEASURE

This paper 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; where $c_i = \sum_{j=1}^{d} w_j c_{ij}$ with c_{ij} a binary variable equal to one if individual i is deprived in dimension j, and zero otherwise. Dimensions can rely on ordinal and/or cardinal data. Let q_i be a binary variable equal to one if the person is identified as disadvantaged, and to zero 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):

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

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

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

$$H = q/n \qquad (1)$$

To capture the breadth of deprivation experienced by the multiply deprived, in other words, the experience of deprivation in several dimensions,

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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...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):

$$A = c(k)/(qd) \qquad (2)$$

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:

$$M_0 = HA = c(k)/(nd) \quad (3)$$

It fulfills desirable axioms, is decomposable and can include discrete, cardinal and continuous data (Alkire and Foster, 2011). If continuous indicators of deprivation are used, measures of poverty gaps M_1 and severity M_2 can be calculated with a procedure analogous to the Foster-Greer-Thorbecke poverty measures in unidimensional analysis (Foster, Greer and Thorbecke 1984).

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. It should be noted that 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. As noted in Alkire and Foster (2011), "setting k establishes the minimum eligibility criteria for poverty in terms of breadth of deprivation and reflects a judgment regarding the maximally acceptable multiplicity of deprivations" (p. 483). 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.

3.2 SELECTING DIMENSIONS

The selection of dimensions for measures of well-being or deprivations at an applied level is challenging. At a conceptual level, Sen's capability approach offers little guidance for the selection of dimensions. Sen suggests that the basis of the ability to achieve some *basic* functionings extends beyond the ability to achieve income only, but depending on the environment and the issue under consideration, the scope and length of the list of possible dimensions will vary (Sen, 1992). For instance, in the context of low- and middle-income countries,

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Sen includes life expectancy, infant mortality, the ability to be well-nourished and well-sheltered, basic education and medical care as basic functionings. These dimensions may not be so relevant in the context of a high-income country. Although there is conceptual value to its voluntary incompleteness, Sen's capability approach is difficult to put into practice.

Another approach is to develop a definitive list of dimensions of what constitutes the good life[3]. Martha Nussbaum, for instance, developed a prescriptive list of 'central human capabilities'-- 10 ordered functions considered essential to human life and universal across all cultures[4] based on an Aristotelian 'objective' view of 'human flourishing'. This list is used to determine a social minimum in each dimension. Human beings have a fundamental human right to achieve these social minima, and a fundamental obligation of political and social institutions to guarantee them. This approach is operationally attractive. However, it ignores the value of a consensual or participatory approach for the selection of dimensions.

Selecting dimensions is a challenge for the implementation of the measure above in general (Alkire 2007), and for the U.S. in particular. The Multidimensional Poverty Index (MPI) used in over 100 developing countries

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[3] Alkire (2002) reviews several such lists including John Rawls' list of primary goods, Doyal and Gough's list of needs and Martha Nussbaum's list of capabilities.
[4] Nussbaum (2000)'s list includes: 1. Life: not dying prematurely. 2. Bodily health: to have good health, adequate nutrition and shelter. 3. Bodily integrity, including physical mobility. 4. Senses, imagination, and thought: including being able to use the senses, to imagine, think and reason. 5. Emotions: including being able to have attachments to things and people outside ourselves. 6. Practical reason: including being able to form a conception of the good. 7. Affiliation: including social interactions. 8. Other species: "Being able to live with concern for and in relation to animals, plants and the world of nature." 9. Play: "Being able to laugh, to play, to enjoy recreational activities." 10. Control over one's environment. (A) Political: including political participation; (B) Material: "Being able to hold property …; having the right to seek employment on an equal basis as others…".

has limited relevance for the U.S. context. It was developed based on the Millennium Development Goals and on the data constraints in developing countries, for instance, in the absence of data on income in many countries. In this paper, we use the list of dimensions of wellbeing developed by Stiglitz, Sen and Fitoussi (2009). This list has been derived through an extended and international consultative process towards developing and recommending indicators to measure economic and social progress. Stiglitz et al. (2009) recommend the following eight dimensions as constitutive parts of wellbeing: material wellbeing (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. Stiglitz et al. (2009, pg. 15) note that, "all these dimensions shape people's wellbeing, and yet many of them are missed by conventional income measures."

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 datasets: 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 1. As the

CPS is the primary source of income and poverty data that is used in government publications, we focus our analysis on this data set.

Not all dimensions as identified by Stiglitz et al. (2009) can be jointly measured though publicly available data: political voice and governance, social connections and relationships, and the environment cannot be measured in conjunction with income data, for example. For instance, the CPS has data on political voice and governance as well social connections and relationships but this data is collected as part of supplements that cannot be linked to the detailed income data collected in the ASEC Supplement, and thus cannot be used in a multidimensional measure that includes income. A multidimensional measure of deprivations that includes income is feasible in the U.S., although it is limited to few dimensions given constraints in public use data sets.

3.3 DATA

In this paper, we build a multi-dimensional measure with the following set of five dimensions out of those recommended by Stiglitz et al. (2009) that are common to both the CPS and the ACS: material wellbeing (income), health, education, work, and insecurity (health insurance). We chose the March 2013[5] ASEC supplement of the CPS as the primary dataset because it is the source of official national estimates of poverty rates using the Official Poverty Measure

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

(OPM) and the Supplemental Poverty Measure (SPM). We also use the 2012 ACS to verify our CPS results[6].

3.4 INDICATORS, THRESHOLDS AND WEIGHTS

The unit of analysis is the individual. Table 2 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 Wellbeing: A person is considered deprived if he/she is part of a family whose income is below the threshold specified under the official poverty measure (OPM). To check the sensitivity of the results with the CPS data, we develop other multidimensional measures with other thresholds or indicators for this dimension. As alternate thresholds, we use in turn 150 percent and 200 percent of the OPM, as these are sometimes used for poverty analysis or benefit eligibility. In addition, we also consider deprivation in material wellbeing as being income poor per the SPM[7], holding all other dimensions and indicators constant.

Health: We acknowledge that health is a complex and multifaceted construct that is difficult to measure. We use the available health status measure and

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[6] In the CPS, data on food security can be linked to data on the above set of dimensions, but was not used in the measure presented in this paper given the lack of comparable data on food security in the ACS. In the ACS, data on housing (e.g. crowding) could be used as part of the material wellbeing dimension. However, it is not available in the CPS.
[7] We use the SPM data file of the Census Bureau, where the SPM poverty status of the household is already coded.

consider an individual as deprived if he or she reports being in poor or fair health..[8]

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.

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. As part of the sensitivity analysis, we use an alternate threshold where the person is considered deprived if he orshe was unemployed, a discouraged worked or conditionally interested in working.

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 2 under Measure 1. We also develop a second measure without material wellbeing as a dimension (Measure 2), where

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[8] For the sensitivity analysis with the ACS, it should be noted that 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).

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 non-income deprivations as per Measure 2, on the other hand, then income can be considered to be a good proxy for multiple deprivations.

Some of the within-thresholds above may not be appropriate for selected subgroups of the population. In particular, for persons age 65 and older, having less than a high school diploma may not equate to a deprivation on a similar level to that faced by working age persons aged 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 paper covers the entire US 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 paper, with the CPS data, we use more restrictive thresholds for persons age 65 and over, 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

paper, dimensions are given equal weights, in other words, they are considered as equally important. Weights are changed as part of a robustness check.

4. RESULTS

We present results from analyses conducted using the CPS. Some of the results using the ACS are available in Appendix tables (Appendices 1 and 2). We provide detailed national estimates for 2012.

Table 3 provides the five dimensions that are measured and the Tetrachoric correlations of their indicators. Correlations between deprivations range from a low of -0.006 between health and health insurance to a high of .415 between income and education. Correlation coefficients are thus low to medium for the indicators under use, which suggest that none of the indicators provides redundant information.

Table 4 gives results for the multidimensional measures H, A and M_0 with k varying from one to four. 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

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has 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, indicating .... When $k=3$, H is 3.9 percent, which goes down to $H=0.5$ percent when $k=4$.

Next, Table 5 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 are 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.

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 percent 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[9], results will show differences in the compositions of these two populations.

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[9] Deprivation rates by dimension are consistent with relevant published estimates for health insurance (DeNavas et al 2013); education (Census Bureau 2013); health (CDC 2013); income poverty (DeNavas et al 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).

Columns (2) and (3) focus on people with two or more and three or more deprivations respectively using Measure 1, our measure which 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% of them are income poor. Besides income, deprivation rates are highest for education (55.8%) and health insurance (53.3%). 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 with three or more deprivations, 1.7 million of whom are not income poor (figure not given in Table 5).

Columns (4) and (5) present individuals with multiple deprivations using Measure 2, which does not include material wellbeing (income) as a dimension. As expected, the overlap with income poverty is more limited than with Measure 1. Only 37.3% of those with two or more deprivations and 46% of those with three or more deprivations are income poor. The group with two or more (non-income) deprivations totals 27.4 million people while the group with with three or more non-income 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, which is further illustrated in Figure 1. 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 percent and 70.9 percent, respectively). A comparison of the characteristics of the two groups in (6) and (2) shows that compared to the income poor, those with two or more deprivations are more likely to be working age, Hispanics, non-natives, 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, non-native 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, non-natives 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% OPM poverty line. This groups accounts for 2.6% 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 6. Column (1) gives the results of a logistic regression of the probability of experiencing two or more deprivations[10]. As shown in column (1) the odds of experiencing two or more deprivations are significantly higher for Hispanics, blacks, non-married 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 column (2) are overall similar to those in column (1). In column (3), interestingly, we find that compared to the income poor, persons with multiple deprivations (but not income poor) are more likely to be Hispanics, immigrants, in male-headed families, to have a disability and to live in non-metropolitan areas. Blacks are equally likely to have multiple (non-income) deprivations and to be income poor. While children, women and Asians are less likely to experience multiple (non-income) 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. For instance, persons with

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[10] This is in line with Measure 1.

disabilities are 2.8 times more likely to have multiple (non-income) deprivations than to be income poor. A notable result of Table 6 overall is that the odds of experiencing multiple deprivations are two to three times higher for Hispanics, immigrants and persons with disabilities. Overall, Table 6 also shows that the demographic profile of persons with multiple deprivations is different from the rest of the population and from the income poor.

The adjusted headcount M_0 for Measure 1 is decomposed by dimension in Figure 3 by age group. Figure 2 shows to what extent deprivations in specific dimensions contribute to M_0. For instance, for the elderly, health and education deprivations are the two largest contributions. For nonelderly adults, health insurance and income deprivations make the largest contribution to the adjusted headcount, while for children it is income and education.

A sensitivity analysis was conducted for several of the results. In particular, results using ACS instead of CPS data are presented in Appendices 1, 2 and 3, which can be compared to Tables 2, 3, and 5 respectively. ACS results are overall very consistent with CPS results. In addition, with the CPS data, Table 7 gives headcount results when we use the SPM indicator for material wellbeing 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 7. The headcount of having two or more deprivations stands at 15.2 percent instead of 15 percent with the multi-dimensional measure that uses SPM vs 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 who are not income poor. Other rows of Table 7 give results of the multidimensional measure when OPM income is used as material wellbeing indicator but one of the within-dimension thresholds is changed compared to the base measure presented in earlier tables. In the second row, when stricter within-dimension health and education thresholds are used for persons age 65 and older, the headcount of having two or more deprivations is reduced from 15 percent 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 percent 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 percent from 15 percent in the base measure in Table 4. 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 percent and 200 percent, a higher share of those 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 5. At the same time, a comparison of the headcount of

individuals with two or more deprivations in column (b) (22.2 percent) and of
individuals with two or more deprivations *or* income poor in column (e) (36.7
percent) shows that a sizeable share of individuals are income poor under the
200 percent threshold but do not have multiple deprivations.

5. DISCUSSION

To our knowledge, this paper develops a first measure of multiple overlapping
deprivations for the U.S. population using the Alkire and Foster (2011) measure.
This paper 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 enhances 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 this data with the income data collected as part of ASEC.
Yet other datasets 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 paper[11] , 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 paper. 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 paper is France with 16.2 percent.

Third, with the multidimensional measure developed in this paper, the size of the population who has multiple deprivations is similar to the size of the population who 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 two to three times 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. Whereas measurements based solely on income might lead to discussions around the relative utility of income assistance or tax relief programs, measurements based on multiple deprivations might suggest a need for a broad panoply of policy options, including those that might partner income

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

assistance and tax relief programs with other 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 wellbeing 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 paper are very different and not comparable to the methods and data used in the 1960s by Harrington (1962), and this paper does not provide an assessment of antipoverty policies since. Clearly though, as of 2012, progress is needed to improve wellbeing 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. The scale of the problem of multiple

deprivations is more widespread compared to what was found in the underclass literature in studies that tended to be focused on subgroups, such as people in cities or minority groups (Kasarda, 1992). 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). A significant portion of those with multiple overlapping dimensions are thus not income poor and 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 certain sub-populations who are more at risk for multiple deprivations but are not income poor.

As part of an additional sensitivity analysis, weights are altered. There are only two results above that are sensitive to the values of weights: the third result

on the prevalence of multiple deprivations H at 15 percent and the prevalence of multiple deprivations or income poverty. Of course, changing the relative weights of dimensions affects the value of H (as well as A and M_0). Increasing the weights of dimensions where deprivation rates are relatively low such as health (or high such as health insurance) (as per Table 5, column (1)), leads to reductions (or increases) in the headcount H.

6. 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 wellbeing (income), health, education, personal activities (work), and insecurity (health insurance) is a good 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 percent vs. 14.8 percent). However, the composition of these two groups differs. Nearly six percent of the U.S. population experiences multiple dimensions, but is not income poor. This result shows the potential usefulness of including non-income as well as income components to identify the disadvantaged and it may have implications for the targeting of social policies.

Results in this paper 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 paper 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[12]. Such a measure could be used for the evaluation of antipoverty programs that may target or succeed in addressing selected deprivations.

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

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Table 1. Data review	ACS	ACS	CPS	SIPP	PSID
	1 year	3 or 5 year			
Material wellbeing					
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 is the American Community Survey, CPS is the Current Population Survey, SIPP is the Survey of Income and Program Participation. PSID is the Panel Study of Income Dynamics.

☑ indicates that the data is available.

☑ indicates that the data is available in the CPS but cannot be linked to the core indicators such as income.

☑ indicates that the data is 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.

Dimension	Indicator(s)	Threshold: Deprived if…	Measure 1	Measure 2
Table 2. Dimensions, Indicators, thresholds, and weights				
				Weight
Material wellbeing				
	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[1]	1/5	1/4
Education				
	Educational attainment	Individual has less than high school educational attainment[2]	1/5	1/4
Personal activities				
	Employment status	Individual is unemployed in the past week[2,3]	1/5	1/4
Insecurity				
	Health insurance	Individual does not have any health insurance	1/5	1/4

[1] for the ACS, the indicator is functional or activity limitation. The threshold is that the individual needs to report at least one such limitation.

[2] for children, this dimension is with respect to the family head.

[3] for the elderly, this dimension is not included.

Table 3. 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

Source: Authors' calculations based on March 2013 CPS data.

Notes: OPM stands for official poverty measure. SPM stands for supplemental poverty measure.

The income deprivation in the first column refers in turn to OPM income, and SPM income.

Table 4. Measures of multiple overlapping deprivations

	Headcount (H)	Intensity (A)	Adjusted Headcount (M_0)	
Measure 1:				
k=1				
CPS data (with OPM income)	40.50%	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	35.09%	0.257	0.09	
k=2	8.84%	0.424	0.038	
k=3	1.03%	0.609	0.006	

Source: Authors' calculations based on March 2013 CPS data.

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 M0 were close to zero then.

OPM is the Official Poverty Measure. "with OPM income" refers to the multidimensional measure with OPM income for material wellbeing.

SPM is the Supplemental Poverty Measure. "with SPM income" refers to the multidimensional measure

Table 5. Characteristics of selected groups

| | Total population | Measure 1 | | Measure 2 | | Income poverty OPM Income poor | Deprived in 2 or more dimensions But not income poor | |
| | | Deprived in 2 or more dimensions | Deprived in 3 or more dimensions | Deprived in 2 or more dimensions | Deprived in 3 or more dimensions | | as per OPM | as per 200% OPM |
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(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 2 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
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
Non-natives	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 familiies	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 2/3 or more dimensions is H using CPS data and OPM income as a dimension.
Source: Authors' calculations based on March 2013 CPS data.

Table 6. Odds of having multiple deprivations

| | Deprived in 2 or more dimensions vs rest of the population | Deprived in 2 or more dimensions (not income poor) vs rest of the population | Deprived in 2 or more dimensions (not income poor) vs 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 ***	0.9 *			
Asian	0.826 ***	0.700 ***	0.588 ***			
Non-natives	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	31796004	14068905	10615270.4			
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%, 5% and 10% levels.
Income poor is based on the Official Poverty Measure (OPM). dimension.
Source: Authors' calculations based on March 2013 CPS data.

Table 7. Sensitivity Analysis: headcounts with different multidimensional measures (MM) and overlap with income poverty				
	Deprived in 1 or more dimensions (H with k=1) (a)	Deprived in 2 or more dimensions (H with k=2) (b)	Deprived in 3 or more dimensions (H with k=3) (c)	Deprived in 2 or more dimensions but not income poor[2] (d)
MM with SPM income threshold[1]	0.412	0.152	0.040	0.054
MM with stricter education and health thresholds for persons 65 and older[3]	0.378	0.139	0.036	0.048
MM with looser within-dimension threshold				
MM with expanded unemployment dimension[1]	0.408	0.153	0.040	0.062
MM with 150% OPM income threshold[1]	0.447	0.187	0.054	0.038
MM with 200% OPM income threshold[1]	0.497	0.222	0.065	0.026

Notes: 1 MM stands for multidimensional measure, and refers to the headcount in Alkire and Foster (2011). Dimensions are as in Table 2 unless otherwise noted.

2 In column (d), income refers to the income measure used in MM. 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.

3 Dimensions are as in Table 2, except for persons aged 65 and older for whom one has to have 9th grade or less to be consider 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.

16.7m 29.2m 17.1m

☐ Income poor   ☐ Deprived in 2 or + dimensions

☐ Income poor and deprived in 2+more dimensions
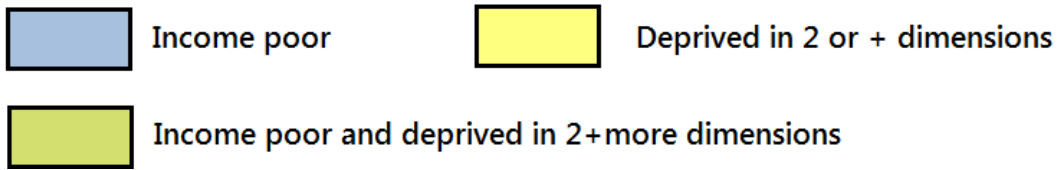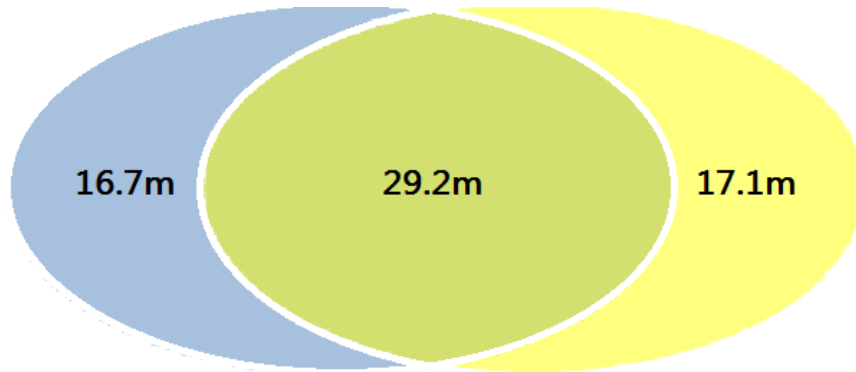
Note: m stands for million individuals. Income poverty is determined using the official poverty measure.

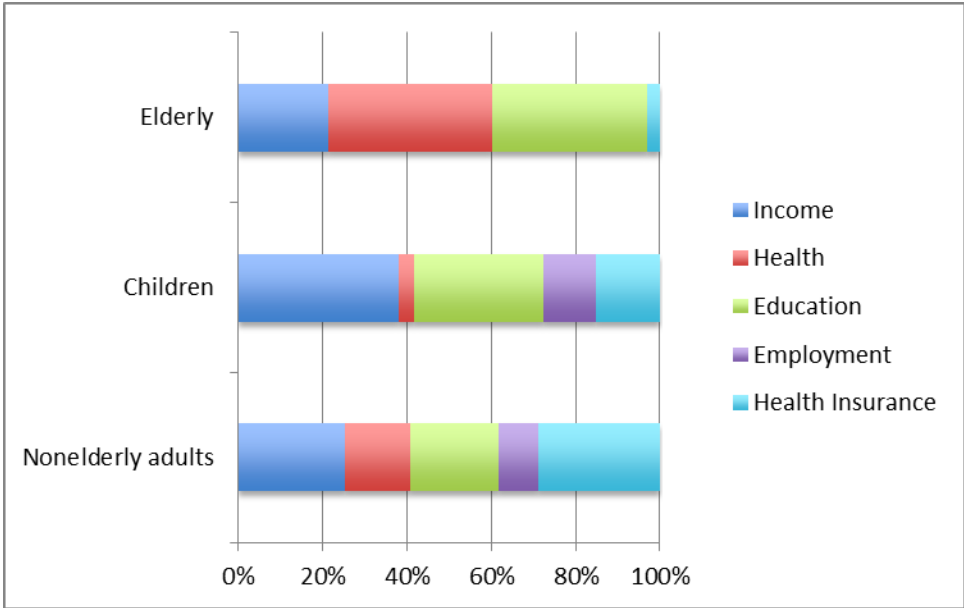**Figure 1.** Overlap of Income Poverty and Multiple Deprivations

Figure 2. Decomposition of Multiple Deprivations

Appendix 1. 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.

Appendix 2. Measures of multiple overlapping deprivations				
	Headcount	Intensity	Adjusted	
	(H)	(A)	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	
Source: Authors' calculations based on 2012 ACS data.				
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 wellbeing.				

Appendix 3. Characteristics of selected groups (ACS 2012)

	Total population	Measure 1 Deprived in 2 or more dimensions	Measure 1 Deprived in 3 or more dimensions	Income poverty Income poor	Deprived in 2 or more dimensions but not income poor
	(1)	(2)	(3)	(4)	(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 2 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
Non-natives	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 familiies	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.