

POVERTY IN AUSTRALIA: NEW ESTIMATES AND RECENT TRENDS

RESEARCH METHODOLOGY

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The paper provides details of the definitions and technical methods that were used to generate the poverty estimates prepared under commission to ACOSS, for inclusion in the first 'Poverty and Inequality Report'. Any queries should be directed in the first instance to Peter Saunders at [P.Saunders@unsw.edu.au](mailto:P.Saunders@unsw.edu.au)

This document describes key features of the data and provides details of the methodology that have been used to produce the poverty estimates included in the first ACOSS 'Poverty and Inequality Report'. This information will be supplemented by a more detailed description in a Final Report to ACOSS that will be released later.

## Data Sources

The poverty estimates have been derived from unit record (household-level) data from the *Survey of Income and Housing* (SIH) conducted by the Australian Bureau of Statistics (ABS). Summary results from those surveys are published in *ABS Household Income and Income Distribution* reports (ABS Catalogue No. 6523.0).

The SIH is currently conducted every two years, with the most recent survey referring to income data for the financial year 2009-10. This analysis draws on the latest data, but also makes comparisons with the two previous SIHs, covering the years 2007-08 and 2005-06.

Income is collected in these surveys in current form (i.e. in the week before the survey) and annual form (i.e. over the previous financial year). The estimates in this study are all based on current income.

Every six years, a sub-set of those who participate in the SIH also participate in the *Household Expenditure Survey* (HES). This allows, for that sub-set of households, information on their income to be combined with information on their expenditure and wealth (if available) and with information on the incidence of different forms of financial stress.

The latest combined survey took place in 2009-10, the previous one in 2003-04. Information from these two surveys is being used to explore aspects of poverty in more detail and those estimates will be presented in the Full Report.

In 2009-10, the basic SIH sample was expanded to 18,000 households, of whom 10,000 were also in the HES survey. Because the HES sample is considerably smaller than the SIH sample the latter survey is used whenever income alone is required because it is able to generate more robust estimates that are subject to smaller sampling error.

Over the period, the ABS has introduced a series of definitional changes to improve the quality of the data collected. These changes need to be taken into account when comparing changes over time and this is not always possible because the new modifications are not always available for earlier years.

The latest series of improvements were introduced in 2007-8, when the ABS (2009, p. 61) noted that:

'In addition to the regular and recurring cash receipts previously included, the new income measures now include non-cash benefits, bonuses, termination payments and payments for irregular overtime worked.'

It was estimated at the time that the inclusion of these new dimensions of measured income resulted in an \$85 increase in mean weekly gross household income and affected 3.4 million (43%) of all households (see ABS, 2009, Appendix 4 and Kindermann and McColl, 2012)

Despite these changes, there is also a consistent series available for the period covered in this report (i.e. 2005-06 to 2009-10) that is based on the 'old' (pre-2007-08, or 2005-06) income definition and this series has been used when examining changes over time.

However, the detailed poverty estimates for the latest year (2009-10) are based on the 'new' (2007-08) income definition in order to ensure that they are of the highest quality.

A consequence of this is that the detailed poverty estimates for 2009-10 that are discussed in this report will differ slightly from those used to track changes in poverty over time.

We estimate that in 2009-10, the impact of moving from the 'old' to the 'new' income measure is to increase the baseline poverty rate (with no self-employment exclusions and using a poverty line equal to 50% of median income) from 11.0% to 12.2%, or by 1.2 percentage points.

### **The Basic Approach**

Wherever possible, the methods used to produce the estimates replicate those used in an earlier study, produced by SPRC for ACOSS. (See Peter Saunders, Trish Hill and Bruce Bradbury, *Poverty in Australia: Sensitivity Analysis and Recent Trends*, available from either SPRC or ACOSS).<sup>1</sup>

The basic income variable used in this analysis is household disposable (i.e. after-tax) income, adjusted for need using the modified OECD equivalence scale. The OECD scale assigns a value of 1.0 to the first adult in the household, 0.5 to each subsequent household and 0.3 to each dependent child (where dependent children are defined as being under 15 years of age). Income is divided by this scale to calculate equivalised income.

The resulting concept of equivalised household disposable income captures the ability of income available for spending to meet the consumption needs of the household, and is used to estimate poverty in studies conducted in Australia and internationally.

The SIH (and HES) are both conducted continuously throughout the year, with households interviewed in one of four quarters. Following the earlier report, the incomes reported in the different quarters have been adjusted for changes in the Consumer Price Index (CPI) that took place over the course of the year in order to make them more comparable.

This involved inflating the incomes reported in quarters 1 and 2 by quarterly movements in the CPI to re-base them at the end of quarter 2, and deflating the incomes reported in quarters 3 and 4 by quarterly CPI movements to re-base them at the same point. In effect the reported value of income was multiplied by the ratio of the average CPI value for the whole year to the CPI in the quarter of interview.

The value of median equivalised disposable income has then been derived from the (consistent) re-based series.

The estimates of median equivalised income derived from the latest SIH on this basis for 2009-10 (using the 'new' income measure) are \$716.3 (before housing costs) and \$584.8 after housing costs (For the HES sub-sample in 2009-10, the corresponding estimates are \$712.0 and \$584.3, respectively).

Poverty has been estimated using poverty lines set at 50% and 60% of median income. Almost all Australian poverty researchers now use one of these two poverty lines. The use of both provides an insight into the sensitivity of the estimates.

Poverty has also been estimated on a before housing costs basis and on an after housing costs basis. In producing the after housing costs estimates, weekly housing costs have been deducted from income, and this difference has then been divided by the equivalence scale. The median of this adjusted measure is then derived, the poverty line is set at the relevant percentage of the new median and poverty is estimated by comparing income (either before or after housing costs) with the new relevant poverty line.

For this purpose, housing costs include recurrent outlays by household members in providing for their shelter and is limited to major cash outlays on housing, that is, mortgage repayments and property rates for owners, and rent.

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<sup>1</sup> The authors of the current study thank Trish Hill for technical advice on a number of methodological and measurement issues but accept responsibility for all errors.

Several adjustments (identified here as exclusions) to the basic ABS samples in each year have been made in order to generate more reliable estimates of poverty and as a form of further sensitivity analysis.

This initial report presents results for the first of these exclusions, which involves removing from the sample used to estimate the poverty rate the following two groups:

1. All households who report zero or negative incomes
2. All self-employed households

In both cases, the rationale is that the reported income data is likely to be an unreliable measure of the standard of living of the household and is thus not suitable for establishing their poverty status.

Self-employed households are defined comprehensively to include those households that *either* report any income (negative or positive) from their own unincorporated business, *or* who contain individuals who report their labour force status as employer, own account worker, contributing family worker or employee paid in kind in their main or second job.

The impact of the exclusion of self-employed households defined on this basis on aggregate poverty rates is presented in this initial report: detailed breakdowns (and an additional exclusion, based on the relationship between reported income and reported expenditure) will be included in the Full Report.

Application of the self-employment exclusion results in the removal of 98.5 thousand individuals on the basis of reported income. In total, 3,693.0 thousand individuals are excluded on the basis of their self-employment status alone, and 3,729.3 thousand individuals are excluded when the combined (income and self-employment status) basis is applied.

These figures imply that around two-thirds of those who report zero or negative income are automatically removed when the self-employment exclusion is applied in isolation.

When the combined exclusion is applied, there is a small movement in median income. However, when estimating poverty rates, median income (and hence the two poverty lines) has been held fixed at its pre-exclusion level. This makes it easier to assess the impact of the exclusion on estimated poverty using a fixed measurement benchmark.

Detailed poverty estimates for households identified by a number of socio-economic characteristics and for a number of 'at risk' groups are presented using the two poverty lines (set at 50% and 60% of median income), with and without the exclusion described above, and on a before and after housing costs basis.

The specifications of the groups included in the disaggregated analysis are provided in **Appendix A**.

In deriving all of the estimates, the poverty status of the household is first established and (unless elsewhere specified) the estimates are then weighted by the number of persons in the household. This approach is now standard practice in Australian and international poverty line studies.

Poverty rates have been derived for all individuals, all adults (aged 15 and over) and all children (aged under 15).

### **Changes Over Time**

When examining changes over time, comparability demands that account must be taken of the changes to the definition of income that have been introduced by ABS over the period.

For this initial analysis we use the most recent definition (introduced in 2007-08) when examining poverty in 2009-10, but the definition first introduced in 2005-06 (the 2005-06 income measure) when examining changes between 2005-06 and 2009-10. The 2005-06 measure is also available for

2007-08, but the latest (2007-08) measure does not extend back to 2005-06 and so cannot be used to examine changes over time.

Table 1 summarises movements in median income (before and after housing costs), the CPI and household disposable income per head (HDI) over the period covered in this analysis.

**Table 1: Movements in Median Income, Consumer Prices and Household Disposable Incomes, 2005-06 to 2009-10**

Year	Median income:		Consumer price Index (1989-90 = 100)	Household disposable income per head (1989-90 = 100)
	Before housing costs (\$/week)	After housing costs (\$/week)		
2005-06	563.6	453.3	151.7	193.4
2007-08	668.4	541.4	161.4	224.3
2009-10	692.9	558.3	170.3	248.2
Overall change (%)				
2005-06 to 2007-08	19.0	19.4	6.4	16.0
2007-08 to 2009-10	3.7	3.1	5.5	10.7
2005-06 to 2009-10	23.4	23.2	12.3	28.3

*Note:* Median income estimates are based on the 2005-06 income series

*Sources:* SIH curfs; ABS Catalogue 6401.0 (for CPI) and Melbourne Institute *Poverty Lines: Australia, June Quarter 2012*, Table 3.

As can be seen from Table 1, median income rose faster than the CPI over the period, particularly between 2005-06 and 2007-08, so that the poverty line increased in real terms over this period.

The sharp slowdown in the growth of median income following the onset of the GFC in late-2008 is also evident in these figures. In fact, real median income declined slightly between 2007-08 and 2009-10, so that the poverty line also declined slightly in real terms.

At this stage, we only use data from the SIH conducted in the three years since we do not need to include the consumption and financial stress data that is only included in the HES.

Table 2 illustrates what difference the different data sources and income definitions make to median income (and hence the poverty lines) in 2009-10.

**Table 2: Alternative Estimates of Median Income in 2009-10**

Income definition and data source	Median income before housing costs (\$/week)	Median income after housing costs (\$/week)	Ratio (b)/(a)
	(a)	(b)	
'New' 2007-08 income measure, SIH sample	716.3	584.4	0.816
'New' 2007-08 income measure, HES sample	712.0	584.3	0.821
'Old' 2005-06 income measure, SIH sample	692.9	558.3	0.806

The most significant point to note here is that the new income definition (which now includes wage and salary bonuses, redundancy and irregular overtime payments) results in a higher value for median income in 2009-10 than when the earlier (2005-06) income measure is used. The (before housing costs) difference is equal to \$23.4 a week or 3.4%.

## Appendix A: Specification of Disaggregated Groups

### Demographic variables

#### 1. Adults and Children

Following the ABS definitions, adults are defined as 15 years and over while dependent children are defined as being under 15 years of age.

#### 2. Adult Age Categories

The age groups of adults have been categorised into: under 16 (i.e. all adults aged 15 years), 16 to 24 years, 25 to 64 years, and 65 years and above.

#### 3. Family Type

Family type has been derived from the household variable identified in the ABS data file (FAMILYCOM) by mapping lone person households as single households with no children, one parent families with dependent children only and one parent families with dependent children. Other persons have been mapped into lone parent households, couples only have been mapped into couple only households, and couple families with dependent children only and couple families with dependent children and other persons have been mapped into couples with children households. All other remaining groups have been categorised into the “Other” household type group.

#### 4. At Risk Groups

Binary variables have been generated to describe groups that are at risk of poverty. Some of these definitions are based on the characteristics of the household reference person because of the complexities involved in trying to establish ‘the’ characteristic of households whose members differ in the relevant dimension (e.g. labour force status or income source). Note that these groups are not mutually exclusive, i.e. a household whose main income is social security can also be an unemployed household.

##### a) *Unemployed households:*

A household is defined as unemployed if the household reference person is labelled as unemployed.

##### b) *Single adult 65+ years:*

This group consists of households whose reference person is a single adult (determined from family type) and 65 and above.

##### c) *Households whose main income is social security:*

Defined on the basis of the main source of household income, i.e. includes households whose main income consists of government pension and allowances.

##### d) *Lone parent families:*

Lone parent families are identified using the lone parent households category from the family type variable (as indicated above).

e) *Single adults (without children) of workforce age:*

This category is made up of a combination of single adults from the family type variable, and those who are above 16 and below 65 years of age.

5. Social Security Payment Recipients

Household that received social security payments include those where the household reference person received any positive payments from either Newstart Allowance, Parenting Payment, Carer Payment, Disability Support Pension or Age Pension. In cases where the household reference person received more than one payment type, they were assigned to the payment category from which they received the higher value payment.

6. Social Security Payment Recipients by Family Type

Social security payment recipients have been further disaggregated by family type i.e. single, lone parent and couples with and without children using family type variable described earlier.

7. Labour Force Status

The labour force status of the household reference person has been classified into employed, unemployed and not in the labour force. Those who were employed have been further disaggregated into full-time and part-time employment, while those who are not in the labour force have been separated into those aged under 65 and those aged 65 and above.

8. Country of Birth

The country of birth by main language of the household has been classified into 3 groups including Australia, Main English speaking countries (New Zealand, United Kingdom, Ireland, Canada, the United States, and South Africa), and all other countries.

9. State of Residence

Households have been disaggregated into usual States of residence. Because of small sample size, separate data is not available for the ACT and NT.