

ACOSS/UNSW SYDNEY, POVERTY IN AUSTRALIA 2018,
RESEARCH METHODOLOGY

Bruce Bradbury, Peter Saunders and Melissa Wong
Social Policy Research Centre
University of New South Wales

15 October 2018

This paper provides details of the definitions and technical methods that were used to generate the poverty estimates presented in *Poverty in Australia, 2018*. The report is part of the output from the ACOSS/UNSW Poverty and Inequality Partnership. Any queries should be directed in the first instance to Bruce Bradbury at b.bradbury@unsw.edu.au.

Introduction

This document describes key features of the data and provides details of the methods that have been used to produce the poverty estimates in the *ACOSS and UNSW Sydney, Poverty in Australia 2018* report (Davidson et al., 2018). The report is the latest in a series of Poverty and Inequality reports that the Social Policy Research Centre (SPRC) has developed in conjunction with ACOSS in recent years. The report also complements the recent report *Inequality in Australia, 2018 (ACOSS/UNSW, 2018)* which examined income and wealth inequality more broadly.

This document follows the outline developed in the previous poverty report (Saunders, Wong and Bradbury, 2016) in explaining how the estimates were derived and setting out key definitions. References to table numbers in this document refer to tables in the main report (Davidson et al 2018). Wherever possible, the methods used to produce the estimates reported here replicate those used in the earlier studies produced by SPRC for ACOSS. (See Saunders, Hill and Bradbury, 2007; Saunders, Bradbury and Wong, 2012, 2014, 2016).

Data Sources

The poverty estimates have mainly been derived from the basic confidentialised unit record file (CURF) data from the *Survey of Income and Housing (SIH)* conducted by the Australian Bureau of Statistics (ABS).¹ 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 2015-16. Cross-sectional results in the *Poverty in Australia 2018* report use the 2015-16 data, and trends are shown from 1999-2000 onwards.

Income is collected in these surveys in current form (i.e. in the week before the survey) and in annual form (i.e. over the previous financial year). The estimates in this study are all based on current income.²

In 2009-10, the basic SIH sample was expanded to just over 18,000 households (of whom around 10,000 were also in the Household Expenditure Survey (HES)). The number of households participating in the subsequent two surveys (2011-12 and 2013-14) was around 14,000 and in the 2015-16 survey (again combined with HES) around 18,000.

Alternative income definitions

Over the period covered by this analysis, the ABS has introduced a series of measurement changes to improve the quality of the income data collected. Since 1999-2000, the most important set of improvements were introduced in 2007-8 and these are described in detail in ABS (2009, Appendix 4), where the ABS notes that:³

‘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.’ (ABS, 2009, p.61)

¹ The survey has had minor name changes over the period considered here. In some years the survey included a sub-sample survey of household expenditures. In these years, our results are all based on the larger income survey component.

² We follow the ABS recommendations to correct an error in the 2005-06 income definition data in the 2011-12 CURF. See the June 2014 release of 6541.0.30.001, *Microdata: Income and Housing, Australia, 2011-12*.

³ Minor changes were made in the 2015-16 survey. The main change was an improvement in the modelling of franking credits.

The ABS estimated 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; Kindermann and McColl, 2012; and Saunders, 2017).

The new estimates resulted in an increase in inequality as measured by the Gini coefficient. As was noted by ABS at the time:

‘This reflects that most of the changes have been to the scope of employment income and *at the higher end of the income distribution i.e. fourth and highest quintiles*’ (ABS, 2009, p. 63: emphasis added)

The definitional changes introduced in 2007-08 (and in earlier years in the 2000s) are described by Wilkins (2014), who confirms that these definitional changes increased measured inequality.⁴ Although the ABS notes that the changes have mainly affected those at the top of the income distribution, Saunders (2017: Figure 1) shows that there are also effects in the lower income deciles. These changes may thus have affected poverty rates, for two reasons: firstly, because the changes at the bottom may cause some people to shift from one side of the poverty line to the other; and second, because the definitional changes will affect the level of median income and hence the poverty line itself.⁵

The detailed poverty estimates presented here for the latest year (2015-16) are based on the ‘new’ (introduced in 2007-08) income measure as this is the most comprehensive measure of income. This is the basis now used in the official (ABS) income distribution reports.

It is not possible to adopt the 2007-08 basis measure when examining the trend in poverty going back to 2003-04 because data that apply the new measure were only collect from 2007-08 onwards. There is, however, a consistent series that applies the 2005-06 income measure that covers the period from 2005-06 to 2015-16 and this forms the basis of the trend analysis.

The estimates of poverty in 2003-04 and earlier years are based on the income measure prevailing in those years. Our previous analysis of poverty rates in the overlap years where both the 2003-04 and 2005-06 measures were available showed that these produce very similar results (Saunders, Wong and Bradbury, 2014).

However, it is important to note that the ABS has been continually refining the methodology of income surveys over the last two decades. While the 2007-08 change was the most important of these, other changes in earlier years might have an unknown impact on the comparability of the income survey results (Wilkins, 2014).

In summary, for the trend analysis we use the ABS ‘2005-06 income measure’ for the years 2005-06 onwards, and the measure applying in the respective year for the earlier surveys. We denote this combination of measures as the *pre-2007 measure*. For the analysis of poverty in 2015-16 we use the post-2007 (i.e. current) measure.

In Figure 2 in the Poverty in Australia 2018 report, the impact of using the pre- and post-2007 income measure on poverty rates is shown. Poverty rates are higher using the latter measure, mainly because median income is higher.

⁴ Wilkins (2014, p. 88) concludes that his analysis: ‘reinforces the need for data providers to be cognisant of the importance of consistency in data over time’ and he expresses the hope that; ‘future revisions to ABS concepts and survey methods for its household income survey collections will be kept to a minimum’.

⁵ The changes introduced in 2007-08 also affected income received in the form of termination payments and bonuses and, for the first time, included lump sum workers’ compensation payments as part of income (previously only regular receipts were included as income). These changes impacted on some of the incomes of those in the middle and at the bottom of the income distribution (see ABS, 2009: Appendix 4 and Saunders, 2017 for further details).

One other difference is that to ensure comparability in the trend analysis we top-code the number of adults (age 15+) to 6 and top-code the number of children (aged under 15) to 4. The latter coding introduces another minor inconsistency with the 2015-16 analysis (where we do not top-code). These changes affect both the equivalence scale and the survey weighting.

Population

Following the previous poverty report, we exclude two population groups from our analysis.

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

Self-employed households are defined for this purpose very broadly 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. These two exclusions together affect about 16 percent of the population (in 2015-16).⁶

The focus of the current study is on incomes at the bottom of the distribution, and so this report excludes the self-employed because of the difficulty involved in distinguishing between personal and business income, and the presence of households able to finance current living standards by drawing down on business assets.

The poverty rates shown in the report should all thus be interpreted as poverty rates among the non-self-employed (NSE) population with positive income. Results showing the impact of these exclusions are provided in Saunders, Wong and Bradbury (2016).

When estimating the total number of people in poverty in Australia in Table 3, we assume that the self-employed (and those with non-positive income) have the same poverty rate as the NSE. This assumption is implemented by multiplying the number of NSE poor by the total population to NSE population ratio. This same ratio is applied to the number of NSE children (under 15) and NSE youth (15-24) in poverty. While we consider this a reasonable approximation, such an inflation does not take account of different rates of self-employment in different population groups. Hence, we do not apply this method to the more detailed disaggregation of poverty numbers in Table 5. The latter estimates thus refer only to the number of NSE who are poor.

Poverty calculation

The key income variable used in this analysis is household disposable (i.e. after-tax) income, adjusted for need using the modified OECD equivalence scale. Poverty estimates based on this income measure are denoted as 'before-housing' poverty estimates.

Most of our poverty estimates, however, are based on after-housing income, which is equal to disposable income minus housing costs. 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 (including for any dwelling alterations or additions) and general and water rates for owners, and rent payments for renters.⁷

⁶ In the *Inequality in Australia 2018* report only households with zero or negative incomes are excluded (about 1% of the population).

⁷ This definition of housing costs is available in all the ABS income (and expenditure) surveys and is the standard definition used for calculation of after-housing poverty.

All incomes are divided by the consumer price index applying to the quarter in which the interview took place, with average 2015-16 prices as the base.⁸

The OECD equivalence scale assigns a value of 1.0 to the first adult in the household, 0.5 to each subsequent adult in the household and 0.3 to each dependent child. We define dependent children as those under 15 years of age. Disposable income is divided by this scale to derive equivalised disposable income. After-housing income is divided by the same scale to obtain equivalised after-housing disposable income.

The after-housing measure is our primary measure because it takes account of the wide variety of housing costs faced by disadvantaged Australians. In particular, home-owners who have paid off their mortgage typically have much lower housing costs (and hence more income available for other consumption) than those paying off a mortgage or paying rent (see Yates and Bradbury, 2010; Saunders, 2017).

The before-housing 50% of median income poverty line is calculated as half the median equivalised household disposable income of individuals. That is, income is measured at the household level, but individuals are the counting unit. The after-housing line is similarly defined as half the median of equivalised household income minus housing costs.

A person is poor on a before-housing basis if their equivalised household income is below the before-housing poverty line. After-housing poverty is defined similarly. Poverty rates for a given population group are the percentage of people in that group who are poor, and the poverty profiles show the percentage in poverty that belong to each group.

Several different versions of the poverty gap are presented in the report. The poverty gap is the average gap between the incomes of poor people and the poverty line. This can be measured in several ways depending on whether the gap is measured in actual or equivalent income, whether the averaging is over poor people only, or across the whole population (with the gap set equal to zero for non-poor), and whether individuals or households are the counting unit.

The most commonly used variants are as follows: (1) *Equivalised gap*: This is the average gap among the poor calculated in single person equivalents. If this is divided by the equivalised poverty line, we obtain the *Gap as a percentage of the poverty line*. If this, in turn, is multiplied by the poverty rate we obtain the *Poverty Gap Index* (which can also be calculated directly by averaging the gap as a percentage of the poverty line over the whole population). The poverty gap index can be used in a similar fashion to the poverty rate to compare the well-being of different population groups.

These three measures are usually averaged over individuals in the same way that poverty rates count individuals. To help in understanding the size of the gap, the gap can also be calculated in *actual dollars*. Note that on this measure, this gap will tend to be greater in larger households because of their greater needs (and hence higher poverty line). Finally, if we calculate the gap in actual dollars, but count households rather than individuals, the sum of this poverty gap measure adds up to the minimum expenditure required to lift everyone who is below it up to the poverty line.

Poverty rates and poverty gaps have 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 to shifts in the poverty line.

⁸ This adjustment applies to both the trend and 2015-16 analysis (for the latter, it has only a small effect). More specifically, for the 2015-16 analysis, we divide by the CPI for the respective quarter and multiply by the annual CPI figure for 2015-16.

Personal and household characteristics

Adults and Children

Unless otherwise noted, adults are defined as people 15 years and over with children under 15 years of age.

Household reference person

The reference person for each household is chosen by the ABS, by applying its selection criteria to all household members aged 15 years and over. The selection criteria are applied in the order listed below, until a single appropriate reference person is identified:

- the person with the highest tenure when ranked as follows: owner without a mortgage, owner with a mortgage, renter, other tenure;
- one of the partners in a registered or de facto marriage, with dependent children;
- one of the partners in a registered or de facto marriage, without dependent children;
- a lone parent with dependent children;
- the person with the highest income;
- the eldest person.

Family Type

Household family type has been derived from the ABS variable DCOMP⁹. One parent families with dependent children only and one parent families with dependent children and other persons households have been categorised as lone parent households. Couple families with dependent children and other persons have been treated similarly. Note that 'dependent' for this categorisation is based on the broader ABS definition including full-time students aged up to 24.

Where family type is further disaggregated by age (65+, under 65) this is done using the age of the household reference person in the 2015-16 analysis and the age of the person in the trend analysis.

Main Income Source

Household gross income is grouped into wage and salary, own unincorporated business income, government pensions/allowances and other income. The maximum of these is the main household income source.

Households with Reference Person Receiving Income Support

This includes households where the reference person received any positive payments from either Newstart Allowance, Parenting Payment, Carer Payment, Disability Support Pension, Age Pension or Youth Allowance. Other income support payments are not included. In cases where the household reference person received more than one payment type,¹⁰ they were assigned to the payment category from which they received the most income.

Income Support Households

These are households where social security is the main source of income and social security payments exceed \$180 per week (in constant 2015-16 dollars).¹¹ This generally means that at least one household member receives a substantial income support payment. These are similarly disaggregated by the main income support payment received.

⁹ This is a more detailed version of a previously used variable (FAMILYCOM) that is no longer available in the dataset.

¹⁰ This typically only occurs when people are transferring between payments.

¹¹ This threshold is chosen so as to be above most FTB payment amounts, but below the maximum payment rate of all income support payments paid to adults.

Labour Force Status of Household Reference Person

ABS standard coding.

Disability or long-term health condition

Adults aged 15 years and above are defined as having a disability with core activity limitation if they have responded 'Yes' to having a disability or long-term health condition as well as selecting a severity level of either profound, severe or moderate core activity limitation. Adults with disability and no core activity limitation are those who have responded 'Yes' to having a disability or long-term health condition and selecting a severity level of either mild core activity limitation, education/employment restriction only or having no specific limitation or restriction. Adults with no disability are those who have responded 'No' to having a disability

Housing tenure

Households are categorised into owners who own the dwelling outright, or own the dwelling but have a mortgage or loan secured against it. Renters are grouped according to landlord type. Those paying rent to state/territory housing authority or trust are classified as public renters. Those paying rent to real estate agents or to other people outside the household who are not relatives are classed as private renters. Renters paying rent to others are classed as other renters. This includes those paying rent to other people in the household, relatives outside the household or to a caravan park, an employer (including a government authority), a housing cooperative, a community or church group, or any other body not included elsewhere. Other tenure types are households that do not fall into any of the above categories i.e. households who are not owners (with or without a mortgage) or renters and includes households that are living rent-free. In the trend analysis, the two 'other' groups are combined.

Country of Birth

The country of birth of all adults has been classified into 3 groups: Australia; Main English-speaking countries (Canada, Republic of Ireland, New Zealand, South Africa, United Kingdom, United States of America); and all other countries.

Location

The ABS ASGS 2011 coding system is used.

References

ABS, (2009), *Household Income and Income Distribution, Australia, 2007-08*, Catalogue No. 6523.0, Canberra: ABS.

ABS, (2013), *Household Income and Income Distribution, Australia, 2011-12*, Catalogue No. 6523.0, Canberra: ABS.

ACOSS/UNSW *Inequality in Australia, 2018* Australian Council of Social Service, Strawberry Hills.

Davidson, P., Saunders, P., Bradbury, B. and Wong, M. (2018), *Poverty in Australia, 2018*.

ACOSS/UNSW Poverty and Inequality Partnership Report No. 2, Sydney: ACOSS.

Deaton, Angus (1977), *The Analysis of Household Surveys: A Microeconomic Approach to Development Policy* The World Bank, Washington D.C.

Kindermann, B. and McColl, B. (2012), 'Household Income, Consumption and Wealth: Broader Frameworks, More Comprehensive and Coincidental Measures, and Analyses of Joint

- Distributions', presented to the 32nd General Conference of the International Association for Research on Income and Wealth (IARIW), Boston.
- Melbourne Institute (2014), *Poverty Lines, Australia. December Quarter 2013*, Melbourne, Melbourne Institute of Applied Economic and Social Research, University of Melbourne.
- Saunders, P. (2017), 'Housing Costs, Poverty and Inequality in Australia', *Housing Studies*, Vol. 32, No. 6, pp. 742-757.
- Saunders, P., Hill, P. and Bradbury, B. (2007), *Poverty in Australia: Sensitivity Analysis and Recent Trends*, Social Policy Research Centre, University of New South Wales.
- Saunders, P., Wong, M. and Bradbury, B. (2012), *Poverty in Australia: New Estimates and Recent Trends Research Methodology for 2012 Report*, Social Policy Research Centre, University of New South Wales.
- Saunders, P., Wong, M. and Bradbury, B. (2014), *Poverty in Australia: New Estimates and Recent Trends Research Methodology for 2014 Report*, Social Policy Research Centre, University of New South Wales.
- Saunders, P., Wong, M. and Bradbury, B. (2016), *Poverty in Australia: New Estimates and Recent Trends Research Methodology for 2016 Report*, Social Policy Research Centre, University of New South Wales.
- Wilkins, R. (2014), 'Evaluating the Evidence on Income Inequality in Australia in the 2000s', *Economic Record*, Vol. 90, No. 288, pp. 63-89.
- Yates, J. and B. Bradbury (2010), 'Home ownership as a (crumbling) fourth pillar of social insurance in Australia' *Journal of Housing and the Built Environment*, 25:193-211, DOI 10.1007/s10901-010-9187-4.