2008

Changes in Poverty Rates During the Howard Era

Joan Rodgers
University of Wollongong, jrrodger@uow.edu.au

Peter M. Siminski
University of Wollongong, siminski@uow.edu.au

J. Bishop
University of Wollongong

Publication Details

Rodgers, JR, Siminski, P and Bishop, J, Changes in Poverty Rates During the Howard Era, Working Paper 08-11, Department of Economics, University of Wollongong, 2008.

University of Wollongong
Economics Working Paper Series 2008

http://www.uow.edu.au/commerce/econ/wpapers.html

Changes in Poverty Rates During the Howard Era

Joan R Rodgers
Peter Siminski
and
James Bishop

Centre for Human and Social Capital Research
School of Economics
University of Wollongong
Wollongong, NSW 2522

WP 08-11
July 2008

Changes in Poverty Rates During the Howard Era

by

Joan R. Rodgers
Peter Siminski
and
James Bishop

Centre for Human and Social Capital Research
School of Economics
University of Wollongong
Wollongong, NSW 2522

June 2008

Corresponding Author's Address:

Joan Rodgers
School of Economics
University of Wollongong
Wollongong NSW 2522

Email: jrrodger@uow.edu.au
Tel: 02-4221 4583
Fax: 02-4221 3725

Changes in Poverty Rates During the Howard Era

Abstract

This paper considers changes in poverty rates under the Howard government. We also make three methodological contributions. We consider the statistical significance of estimated changes in poverty. We propose a decomposition technique which reconciles trends in absolute and relative poverty. We also use 'poverty profiles', which clearly illustrate sensitivity to alternative poverty lines. Whilst we are constrained by the period of comparable data availability (1995-96 to 2002-03), we find statistically significant decreases in absolute poverty (overall and for children) and corresponding increases in relative poverty, which are statistically significant under the most commonly used poverty line: half of median income.

1. Introduction

In March 1996, the Howard government took office, beginning eleven years of Liberal-National Party coalition rule. Howard, himself, has described the policies enacted by his government as 'a blend of economic liberalism ….. and social conservatism' and he has expressed the belief that 'in Western societies …. two of the greatest contributors to poverty are joblessness and family breakdown' (Howard, 2008).

An evaluation of the effect of Howard government policies, individually or as a whole, on the material well being of the Australian population, or of specific groups, is a task well beyond the scope of this paper. It is clear, however, that the eleven years of coalition government coincided with a period of economic prosperity. Australia experienced consistently high rates of economic growth, low unemployment and low inflation. It is less clear how the most vulnerable members of society fared during that time period. Economic prosperity at the aggregate level does not guarantee increased well being for those at the bottom end of the income distribution. Economic liberalism in the form of flexible labour markets[1] may reduce joblessness but at the same time create job insecurity among people in precarious employment, leading to stress and increased family breakdown. Socially conservative policies that promote the traditional family may reduce incentives for married women with children to work and thereby reduce family income.[2] The effect on poverty is ambiguous.

The aim of this study is to chart the progress made by the disadvantaged from the financial year immediately prior to any policy enacted by the Coalition

[1] Flexible labour markets were promoted particularly under the Workplace Relations Acts of 1996 and 2005, with a major intent to reduce the power of unions to influence wages and workplace conditions.

[2] The Howard government made a number of changes to Australia's income support programs, which tended to favour families with children. Welfare spending rose in real terms from approximately 53 billion dollars in 1995-96 to 72 billion dollars in 2006-07, with large annual increases of 6, 14, and 11 per cent in 1998-99, 2000-01 and in 2003-04, respectively (ABS, Cat. No. 1301.0, Chapter 7, issues 1998 through 2008).

government taking effect, 1995-96, to the financial year 2002-03, which occurred towards the end of the Howard government's third term. The latter is the most recent year for which comparable data are available, an issue we will examine in more depth later in this paper. Our results will enable a better evaluation of claims made by both sides of politics about how Australia's disadvantaged fared during this period. We also make three methodological contributions: we test the statistical significance of observed poverty-rate changes; we use a decomposition technique to reconcile changes in relative and absolute poverty rates; and we use 'poverty profiles' to determine the sensitivity of poverty rates to where the poverty line is set.

We are not the first to measure inter-temporal changes in poverty in Australia. Several others have also compared poverty rates at different points in time (for example, Saunders and Bradbury, 2006; Harding, Lloyd and Greenwell, 2001; Harding and Szukalska, 2000; Mitchell and Harding, 1993; Saunders and Matheson, 1993; Harding and Mitchell, 1992). All of these studies have been based upon sample data, the Surveys of Income and Housing (SIH) conducted by the Australian Bureau of Statistics (ABS) being the most frequently used data source. However, none of these studies tested the statistical significance of the poverty-rate changes they observed. This omission is surprising because the ABS provides replication weights with which standard errors of poverty rates can be calculated with a jackknife procedure. In view of the controversy generated by some of the poverty studies (Hughes, 2001; Tsumori, Saunders and Hughes, 2002; Saunders (CIS), 2002, Saunders (SPRC), 2002; Saunders (SPRC), 2005) it would seem prudent, before debating other issues, to ascertain whether any observed change in the poverty rate can be explained by sampling variation. A major contribution of this study is to

compute standard errors of poverty rates and to test whether the observed poverty-rate change is significantly different from zero, statistically speaking.

Part of the controversy concerning changes in poverty in Australia relates to the type of poverty line chosen. The majority of researchers favours a poverty line set equal to a given percentage of median, or mean, income in the current year, in which case the poverty line can vary in real terms and poverty is a relative concept (for example, Harding, Lloyd and Greenwell, 2001; Headey, Marks and Wooden, 2005). Others (for example, Tsumori, Saunders and Hughes, 2002), argue that a poverty line that is fixed in real terms is better able to identify those most in need, in which case poverty is an absolute concept. Like Adam Smith, we take the view that both concepts are informative:

> 'By necessaries I understand not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it indecent for credible people, even of the lowest order, to be without.' Adam Smith (1776, p. 691).

Our study reconciles the two approaches. Changes in relative poverty are decomposed into two components: the effect of a change in the bottom end of the income distribution with the poverty line constant (a change in absolute poverty) and the effect of a change in the real poverty line with the bottom end of the income distribution constant. The decomposition clarifies the source of an observed change in relative poverty and consequently will assist the interpretation of poverty-rate changes.

Also contributing to the controversy is the question of where the poverty line, absolute or relative, should be set. This concern can be largely resolved by presenting results in the form of poverty-rate profiles, which display the sensitivity of poverty

rates, and changes in poverty rates, to the poverty line. Indeed, the profiles enable the simple, but crude, head-count ratio to convey information about the depth of poverty at a given poverty line, as well as its incidence. We use poverty-rate profiles to analyse relative and absolute poverty rates, and their changes over time, both of the population as a whole and of dependent children aged under 15 years.

The rest of the paper is organised as follows. The data and methodology used in the analysis are described in Section 2. The results of our analysis of poverty-rate changes among the population as a whole are reported in Section 3. Changes in child poverty rates are examined in Section 4. Some concluding comments are offered in Section 5. The analysis presented in the paper is conducted using current disposable incomes. An appendix repeats the analysis using financial-year disposable incomes, and assesses the sensitivity of results to the type of income data available.

2. Data and Methodology

The household income surveys conducted by the ABS are the main source of income distribution data in Australia. A limitation of these data is that inter-temporal comparability is affected by several methodological changes that have been implemented over time. The methods used in the SIHs held since 1994-95 are quite different to those of earlier income surveys (Siminski *et al.*, 2003a and 2003b). More importantly for this study, several major methodological changes were implemented in the 2003-04 survey which amount to another series break (ABS Cat. No. 6553.0, 2007). Comparability between the 2003-04 and 2005-06 surveys is also affected by the integration of the 2003-04 survey with the Household Expenditure Survey, which may have led to differences in the nature of non-response bias, though the impact of this issue is difficult to quantify (ABS Cat. No. 6553.0, 2007). However, the surveys

conducted between 1994-95 and 2002-03 are highly comparable. The approach taken in this paper is conservative. We consider changes in poverty between the first survey held prior to the Howard government taking office and implementing policy (1995-96) and the last comparable survey (2002-03). However, this conservative approach comes at a cost, since the period of data comparability does not entirely cover the period of the Howard government.

The Household Expenditure Survey (HES), also conducted by the ABS, is another commonly used source of household income data, and it was also considered for this study. The HES has been held approximately every five years up to 2003-04. The HES was also affected by some of the methodological changes implemented in 2003-04. The collection of wealth data in 2003-04 may have improved the reporting of associated income streams. The income tax model was completely different in 2003-04 compared with previous years. The integration of the HES and the SIH may have resulted in a greater emphasis on the auditing of income items, leading to improvements in quality (ABS, 2008). In any case, the timing of the HES surveys is not ideal for our study. The Howard government was elected approximately halfway between the 1993-94 and 1998-99 surveys and thus neither is ideal for the purpose.

The Household Income and Labour Dynamics in Australia (HILDA) survey was also considered. Six waves of HILDA income data are available beginning 2000-01 and, in principle, could be used to measure poverty-rate trends during the latter years of the Howard government. However, there are questions as to whether HILDA is a suitable data source for an investigation of trends in cross-sectional statistics. HILDA is a panel survey and as such it does not take a random sample of Australian households in any year other than the initial year. The cross-sectional weights provided correct for differences in some observed characteristics between the sample

and that of the population in each year. However, differences in unobserved characteristics (and those observed characteristics that do not contribute to the weights) are not taken into account. Unlike repeated, cross-sectional, random samples, any resulting bias is likely to intensify over the length of the panel survey. Saunders and Bradbury (2006, p. 259) also draw attention to concerns over the need to use imputed incomes in a large number of cases where income data are missing. For these reasons we again take a conservative approach and confine our attention to the period 1995-96 to 2002-03.

The poverty rates presented in this paper are based on 18,092 people living in households that were selected for the 1995-96 SIH and 24,674 people in households selected for the 2002-03 SIH.[3] When appropriate weighting procedures are used these people constitute random samples of individuals living in private dwellings in all but the most remote areas of Australia. The two per cent of Australians who are outside the scope of the surveys (ABS Cat. No. 6541.0, 2005, p.2) include the homeless and people living in institutions such as boarding schools, prisons and military barracks.

It is well recognised that the analyst's choice of methodology is likely to influence the value of the poverty rate. The methodology employed in this study is similar to that used by Saunders and Bradbury (2006) in that the person is the unit of analysis, poor people are defined as those who live in households with insufficient equivalised, disposable income, and the modified OECD equivalence scale is used to convert household income to an adult-equivalent basis.[4] The poverty rate is estimated

[3] The 1995-96 Basic SIH-CURF contains 6,963 households, in which live 14,017 people aged 15 years or older and 4,075 people younger than 15 years. The 2002-03 Basic SIH-CURF contains 10,210 households, with 19,378 people aged 15 years or older and 5,296 people younger than 15 years.

[4] The modified OECD scale assigns the first adult in the household a weight of one point. Each additional person aged 15 years or older receives 0.5 points, and each child under 15 years of age receives 0.3 points. Thus, a couple with two children is considered to have needs that are (1 + 0.5 + 0.6 =) 2.1 times as large as those of a single adult household. In other words, the household contains 2.1 adult equivalents. Disposable income divided by the number of adult equivalents gives the equivalised disposable income of the household, which can be compared with the poverty threshold for a single

by the (weighted) number of poor people in the sample divided by the (weighted) total number of people in the sample. The underlying assumptions of this methodology are that resources are shared equally among household members and that household members can improve their standards of living by sharing accommodation, utilities and other amenities.

The SIHs data include items for current usual income as well as annual income (in the previous financial year). Following the approach of most leading Australian studies, we use current disposable income in our main results but we present results based on financial-year disposable income in the appendix.[5] On a practical basis, the main reason for choosing current income is that the use of an annual income measure would reduce our period of data coverage. Since each survey collects annual income in the previous financial year, the endpoint in our series would be 2001-02. Disposable income is gross cash income from all sources minus income taxes (which are imputed by ABS). Our entire analysis has been conducted with financial data that were expressed in 2002-03 dollars.[6]

Studies of inter-temporal poverty must confront the question of how to update the poverty line over time. One approach is to set the poverty line in a given year equal to a particular point in *that year's* income distribution, in which case the real value of the poverty line can change over time. This approach is commonly used to examine trends in relative poverty. The alternative is to adjust the poverty line for a given year by changes in the cost of living, which keeps the standard of living represented by that poverty line constant through time. Analysts who favour absolute poverty lines, typically use constant real poverty lines. Although most studies of

adult to determine whether or not the household is poor. The OECD scale has become the conventional choice of equivalence scale in the Australian literature, and in most international studies.

[5] Our main findings are not sensitive to the use of annual income.

[6] The consumer price index used is: CPI, All Groups, Weighted Average of the Eight Capital Cities (ABS, Catalogue No. 6401.0).

poverty in Australia use a relative poverty measure, some have also considered changes in absolute poverty (for example, Saunders & Bradbury, 2006). We believe that both measures are informative. Thus we propose a decomposition technique that reconciles the two approaches. We decompose changes in relative poverty rates into the effect of changes in the real value of the poverty line and the effect of changes in the real incomes of people in the lower part of the income distribution.

The data in the SIHs constitute a complex random sample of people living in private households throughout urban and most rural areas of Australia. Standard errors of the poverty rates reported in this paper were computed using the jackknife methodology described by the ABS (Cat. No. 6541.0, 2005, pp.10-11). The process entails computing each poverty rate 30 times using the 30 sets of replicate weights provided on the SIH-CURFs and measuring the variability of these 30 estimates around the poverty rate calculated using the 'main' weight. Thus:

$$SE(\hat{p}) = \sqrt{\frac{29}{30}\sum_{j=1}^{30}(\hat{p}_j - \hat{p})^2} \qquad (1)$$

where $\hat{p}$ is the poverty rate computed from the full sample using the 'main' weight and $\hat{p}_j$ is the poverty rate computed from the sub-sample that is obtained when the j^{th} set of replicate weights are used. The poverty line used in computing the poverty rate for each of the 30 samples identified by the replicate weights can be absolute or relative. An absolute poverty line is fixed across all 30 samples but a relative poverty line is a random variable and must be recalculated for each of the 30 samples. Consequently, the standard error of a poverty rate that is calculated using an absolute poverty line, z, will be smaller than the standard error of a poverty rate calculated using a relative poverty line that is equal in value to z.

The SIHs are independent samples so the standard error of the change in the poverty rate between the two survey dates is given by:

$$SE(\hat{p}_{02-03} - \hat{p}_{95-96}) = \sqrt{SE(\hat{p})^2_{02-03} + SE(\hat{p})^2_{95-96}} \,. \quad (2)$$

In this paper, a five per cent significance level is used. Hence, the change in the poverty rate is considered statistically significant if the standard normal statistic:

$$Z = \frac{\hat{p}_{02-03} - \hat{p}_{95-96}}{SE(\hat{p}_{02-03} - \hat{p}_{95-96})} \quad (3)$$

lies outside the range -1.96 to 1.96.

3. Poverty Rates and Poverty-Rate Changes

Relative poverty-rate profiles for 1995-96 and 2002-03 are presented in Figure 1a. Each profile is a graph of the poverty rate against the poverty line, which was increased in one percentage-point increments from zero to 100 per cent of median income. The real value of any poverty line in Figure 1a differs between years. For example, 50 per cent of median income equates to $194 per week in 1995-96 and $225 in 2002-03. Consequently, any change in the poverty rate over that time period will be partially due to the increase in median income between the two years and partially due to changes in the lower end of the income distribution. Figure 1b graphs the change in the relative poverty rate between 1995-96 and 2002-03, together with its 95 per cent confidence interval, as functions of the poverty line.

Table 1 displays five points on the poverty-rate profiles that appear in the figures. The top and middle sections of the table correspond to Figure 1a and list poverty rates and their jackknifed standard errors at various poverty lines in 1995-96 and 2002-03, respectively. The bottom section of the table corresponds to Figure 1b

and gives the change in the poverty rate, the standard error of that change, the Z-statistic and its P-value at the five poverty lines.

Several features of Figure 1 and Table 1 are of interest. First, at low thresholds, the poverty rate is small and changes little as the threshold increases. But as the threshold becomes larger the poverty rate becomes sensitive to the choice of relative poverty line. At a poverty line equal to 40 percent of median income, the poverty rate is approximately five percent in both years. It doubles to 8.8 per cent (1995-96) or 11.46 percent (2002-03) at a poverty line equal to 50 per cent of median income, and doubles again to 18.63 or 20.34 per cent at a poverty line equal to 60 per cent of median income. Second, at all poverty lines less than or equal to 81 per cent of median income, the 2002-03 poverty-rate profile lies above that of 1995-96, indicating an increase in relative poverty. However, the increase is statistically significant only at poverty lines between 48 and 56 per cent of median income, and it is marginally significant when the poverty line equals 59 per cent of median income. Third, those increases in the relative poverty rate that are statistically significant are large enough to be noteworthy. For example, the 2.66 percentage point increase that occurs at 50 per cent of median income constitutes a (2.66/8.80 =) 30 per cent increase in poverty over the seven-year period. Finally, the fact that the largest inter-temporal changes in relative poverty are observed at poverty thresholds close to half median income is not surprising. The poverty rate will approach 50 per cent and the inter-temporal change in the poverty rate will approach zero as the poverty line approaches 100 per cent of median income.[7] Similarly, when the poverty line equals zero the poverty rate will equal the percentage of negative incomes in the sample and,

[7] A poverty rate defined as the proportion of observations *below* median income does not necessarily equal 0.5 exactly. For example, two out of five observations in the set {3, 5, 10, 12, 15} are below the median, as are two out of six of the observations in the set {3, 5, 10, 10, 12, 15}.

assuming the latter is small in any given year, the inter-temporal change in the poverty rate will be close to zero.

Absolute poverty-rate profiles for 1995-96 and 2002-03 are presented in Figure 2a, which differs from Figure 1a only in that the poverty line on the horizontal axis is expressed as a monetary amount. The poverty line was increased in five-dollar increments from zero to 400 dollars per week. Unlike Figure 1a, any poverty line in Figure 2a has the same (real) value in both years. Therefore, any change in the poverty rate will be entirely due to changes in the lower end of the income distribution. Similar to Figure 1b, Figure 2b graphs the change in the absolute poverty rate between 1995-96 and 2002-03, and its 95 per cent confidence interval, as functions of the real, equivalised poverty line. Six points on the poverty-rate profiles are displayed in Table 2, together with their standard errors, Z-statistics and P-values. The range of poverty thresholds in Tables 1 and 2 are comparable in magnitude: 30 per cent of median income equals $117 in 1995-96 and $135 in 2002-03; 70 per cent of median income equals $272 in 1995-96 and $314 in 2002-03.

There are three salient features of Figure 2 and Table 2. First, as was the case with relative poverty, the choice of absolute poverty line has a considerable influence on the poverty rate. This is no coincidence. Every relative poverty line has an equivalent absolute value. The rate of increase in the absolute poverty rate quickens after $150 in 1995-96 and after $175 in 2002-03, which are equivalent to 40 per cent of median income in the two years. Second, in contrast to the relative poverty profiles, the 2002-03 absolute poverty-rate profile lies below that of 1995-96 at poverty lines greater than or equal to $85 per week, indicating a decrease in poverty. Furthermore, the poverty-rate reductions are statistically significant at all poverty lines in excess of $150 per week. There is a statistical reason why the change in absolute poverty is

statistically significant over a wider range of poverty lines than is the change in relative poverty: relative poverty lines are subject to sampling error whereas absolute poverty lines are not. Third, the reduction in the absolute poverty rate between 1995-96 and 2002-03 is large and becomes larger as the poverty line increases. For example, at a poverty line of $200 the reduction in the poverty rate is 3.30 percentage points; at $250 it is 5.96 percentage points; and at $300 the reduction in the poverty rate is 7.68 percentage points.

The pictures of poverty painted by Figures 1 and 2 are somewhat different: relative poverty has risen – although the increase is significant only at a subset of poverty lines close to 50 per cent of median income; absolute poverty has decreased significantly at poverty lines between $150 and $400 per week. The relative-poverty approach implicitly assumes that the norms of an acceptable standard of living are proportional to median income and therefore will likely change over time. The absolute-poverty approach implicitly assumes that what constitutes an acceptable standard of living is independent of the distribution of income and therefore will remain constant in real terms over time. Consequently, the type of poverty line – relative or absolute – and where it is set can have a considerable effect on changes in the proportion of people who are considered to be poor.

It is possible to determine how much of a given change in the relative poverty rate can be attributed to (i) a change in the bottom end of the income distribution with the poverty line constant (that is, a change in the absolute poverty rate), and how much can be attributed to (ii) a change in the median level of current, real, equivalised, disposable income with the bottom end of the distribution of income constant. Figure 3 displays one such decomposition while Table 3 decomposes several relative poverty-rate changes into these two components.

The decomposition of the change in the relative poverty rate can be performed in two ways, which will now be explained using a poverty line equal to 50 percent of median income as an example (see Rows C1-C3 of Table 3). The decomposition is presented graphically in Figure 3, which duplicates Figure 2a but adds vertical lines equal in monetary value to 50 per cent of median income in 1995-96 and 2002-03. Poverty rates at these poverty lines are labelled a, b, c and d.

Decomposition 1 In 1995-96 a poverty line set at 50 percent of median income was equivalent to $194 and the poverty rate was 8.80 per cent (see Point a in Figure 3). At that same threshold, the poverty rate in 2002-03 was 6.26 per cent (Point b), a fall of 2.54 percentage points. By 2002-03, 50 per cent of current median income was equivalent to $225 at which threshold the poverty rate was 11.46 percent (Point c), which is 5.20 percentage points higher than 6.26 per cent. In other words, the (11.46 – 8.80 =) 2.66 percentage point increase in the relative poverty rate (from Point a to Point c) can be decomposed into a 2.54 percentage point fall in absolute poverty (from Point a to Point b) and a 5.20 percentage point increase in relative poverty resulting from the increase in median income (from Point b to Point c).

Decomposition 2 In 1995-96 a poverty line equal to 50 percent of the median income was equal to $194 and the poverty rate was 8.80 per cent (see Point a). Had the poverty line in 1995-96 been set at $225, which is 50 percent of 2002-03's median income, the poverty rate would have been 16.21 per cent (Point d), which is 7.41 percentage points higher than 8.80 per cent. At a threshold of $225, the poverty rate in 2002-03 was 11.46 per cent (Point c), which is 4.75 percentage points lower than 16.21 per cent. In other words, the (11.46 – 8.80 =) 2.66 percentage point increase in the relative poverty rate (from Point a to Point c) can be decomposed into a 7.41 percentage point increase in relative poverty resulting from the increase in median

income between 1995-96 and 2002-03 (from Point a to Point d) and a 4.75 percentage point fall in absolute poverty (from Point d to Point c).

Both decompositions demonstrate that the increase in relative poverty from 1995-96 to 2002-03, with the poverty line set at 50 per cent of median income, can be attributed to an increase in median income that more than offset a reduction in the size of the lower tail of the income distribution. The same conclusion is reached with poverty lines equal to 30, 40, 60 and 70 per cent of median income.

4. Poverty Rates and Poverty-Rate Changes of Children

The vulnerability of the young makes child poverty a special issue. Whereas it can be argued that some adults are poor because they have made unwise decisions, these arguments do not apply to children. There is also a concern that growing up in poverty could limit one's earning potential as an adult, thereby perpetuating a circle of poverty. Children are seen as an investment in society's future so it is not surprising that reducing child poverty has been a policy objective of previous governments, Bob Hawke's 1987 election promise that by 1990 no Australian child would live in poverty being a well-known example. The socially conservative policies of the Howard Government promoted the traditional family[8] but their effect on children from disadvantaged families is complex. For example, the direct effect of the Family Tax Benefit Part B, which was introduced in July 2000, was to increase the incomes of families with young children and one main income earner. However, it may have had the indirect effect of encouraging married women with children to leave the

[8] Spending on Family Assistance rose in real terms from approximately 8 billion dollars in 1995-96 to 15 billion dollars in 2006-07, with large annual increases of 33 and 40 per cent in 2000-01 and in 2003-04, respectively (ABS, Cat. No. 1301.0, Chapter 7, issues 1998 through 2008).

workforce and encouraging single women with children to enter the workforce, with implications for their families' incomes.

In this section we focus on changes in poverty among children from 1995-96 to 2002-03, the first and seventh years of the Howard-government. In line with the ABS (Cat. No. 6523.0, 2004, p.53) we define children as persons younger than 15 years. Some of our results for child poverty are similar to those relating to poverty in the population as a whole: at poverty lines up to 67 per cent of median income of the entire population, relative poverty rates of children increased over the time period considered (see Figure 4 and Table 4); at poverty lines from $85 to $400 per week, absolute poverty rates of children decreased (see Figure 5 and Table 5).

There are, however, some additional points of interest. The first involves comparisons of top two sections of Table 4 with those of Table 1, and of Table 5 with Table 2. The poverty rate of children exceeds that of the entire population at all poverty lines reported in Tables 4 and 5[9] but by a smaller amount in 2002-03 than in 1995-96. For example, at a relative poverty line equal to 50 per cent of median income in 2002-03 the poverty rate of children is (12.99 – 11.46 =) 1.53 percentage points higher than that of the whole population; in 1995-96, the corresponding differential is (10.59 – 8.80 =) 1.79 percentage points. Thus we see a tendency for the relative poverty rate of children to become more like that of the entire population over the time period considered.

Second, although at most relative poverty lines the poverty rates of children increase from 1995-96 to 2002-03, the increase is statistically significant over a narrower range of poverty lines – 50 to 52 per cent of median income – than the corresponding range for the whole population (compare Figure 4b with Figure 1b). In

[9] This is true at poverty lines in excess of 23 per cent of median income ($85 per week) in 1995-96, and in excess of 21 per cent of median income ($100 per week) in 2002-03.

contrast, poverty rates of children decrease from 1995-96 to 2002-03 at most absolute poverty lines, and the reduction is statistically significant for poverty lines of $160 to $400 per week, which is almost the same as the corresponding range for the whole population (compare Figure 5b with Figure 2b).

How much of the change in the relative poverty rate of children can be attributed to a change in the real value of the poverty line, and how much to a change in the concentration of children at the bottom end of the income distribution? Table 6 follows the same decomposition procedure for children's poverty rates as Table 3 does for the entire population. The decomposition at a poverty line equal to 50 percent of median income (see Rows C1-C3 of Table 6) is illustrated graphically in Figure 6.

Decomposition 1

The 2.40 percentage point increase in the relative poverty rate (from 10.59 per cent at Point a to 12.99 per cent at Point c) can be decomposed into a 2.98 percentage point fall in absolute poverty (from 10.59 per cent at Point a to 7.61 per cent at Point b) and a 5.38 percentage point increase in relative poverty resulting from the increase in median income (from Point b to Point c).

Decomposition 2

The 2.40 percentage point increase in the relative poverty rate (from 10.59 per cent at Point a to 12.99 per cent at Point c) can be decomposed into a 7.04 percentage point increase in relative poverty resulting from the increase in median income (from 10.59 per cent at Point a to 17.63 per cent at Point d) and a 4.64 percentage point fall in absolute poverty (from Point d to Point c).

Both decompositions demonstrate that the increase in relative poverty of children from 1995-96 to 2002-03, with the poverty line set at 50 per cent of median income of the entire population, can be ascribed to an increase in median income that

more than offset a reduced concentration of children in the lower tail of the income distribution. The same conclusion is reached with poverty lines equal to 30, 40, 60 and 70 per cent of median income.

5. Summary and Conclusions

The years 1995-96 to 2002-03, approximately the first three terms of the Howard government, present a somewhat mixed report card. First, results depend on the type of poverty line used. At a relative poverty line equal to 50 per cent of median income there was an observed rise of 2.7 per cent in the poverty rate for the population in general and 2.4 per cent for children. At an equivalised poverty line of $195 per week, which is equal to half of 1995-96 median income, there was decrease of 2.7 per cent in the absolute poverty rate of the entire population and 3.1 per cent for children. The decomposition of relative poverty-rate changes presented in this paper reconciles these diverse results: the increase in poverty resulting from an increase in median income more than offset the reduction in absolute poverty that occurred over this time period. The methodological transparency of the decomposition should assist the interpretation of poverty-rate changes.

The second lesson to be learned from this study is that inter-temporal changes in poverty rates that are calculated with sample data need to be tested for statistical significance before any firm conclusion is drawn about whether poverty has increased or decreased. We find that observed increases in relative poverty for the entire population were statistically significant only at poverty lines between 48 and 56 per cent per cent of median income. In the case of children, the range was even narrower: 50 to 52 per cent of median income. Observed decreases in absolute poverty were statistically significant over a wider range of poverty lines: approximately $150 to

$400 per week, for both children and for the entire population. However, the smaller standard errors in the case of absolute poverty are partially explained by the fact that relative poverty lines are subject to sampling error whereas absolute poverty lines are not.

Finally, the poverty-rate profiles presented in this paper show the sensitivity of poverty rates to where the poverty line – relative or absolute – is set. Our results show that at poverty lines below 40 per cent of median income the poverty rate is low and unresponsive to increases in the poverty line. The poverty rate doubles when the poverty line increases from 40 per cent to 50 per cent of median income, and doubles again with an increase in the poverty line from 50 per cent to 60 per cent of median income. Empirical studies are typically based on one or other of these the poverty lines; our results show the importance of reporting all three.

Appendix

Computations Based on *Financial-Year (rather than Current Weekly)* Equivalised, Household, Disposable Income

This section uses data on financial-year, household, disposable income, extracted from the 1996-97 SIH and 2002-03 SIH, equivalised using the modified OECD equivalence scale, and adjusted for changes in the cost of living between 1995-96 and 2001-02 using the CPI. The resulting real, annual, equivalised, household, disposable incomes, and a methodology that is otherwise identical to that described in Section 2 of the main paper, were used to calculate relative and absolute poverty rates for 1995-96 and 2001-02, along with their changes over the six year period, and standard errors of the changes. The results are compared with those found using "current" weekly, equivalised, household, disposable income in order to determine the sensitivity of the results to the choice of income measurement. We conclude that our main findings are not sensitive to the use of current weekly income over annual income, although some noteworthy differences do exist.

This appendix is organised as follows. The results of our analysis of poverty-rate changes for the population as a whole, based on annual income are reported in Section A1. Changes in child poverty rates based on annual income are examined in Section A2. Some comments on the sensitivity of poverty rates to the use of annual income versus current weekly income are offered in Section A3.

A1. Poverty Rates and Poverty-Rate Changes

Relative poverty-rate profiles for 1995-96 and 2001-02 are presented in Figure A1a of this appendix. Figure A1b graphs the change in the poverty rate between

1995-96 and 2001-02, together with its 95 percent confidence interval, as a function of the poverty line. Table A1 displays five points on the poverty-rate profiles that appear in the figures.

Several features of Figure A1 and Table A1 are of interest. First, at low thresholds, the poverty rate is small and changes little as the threshold increases. But as the threshold becomes larger the poverty rate becomes sensitive to the choice of relative poverty line. At a poverty line equal to 40 percent of median income, the poverty rate is 5.08 per cent in 1995-96 and 6.45 percent in 2001-02. It doubles to 10.33 per cent (1995-96) or 12.82 percent (2002-03) at a poverty line equal to 50 per cent of median income, and doubles again to 19.35 or 21.51 per cent at a poverty line equal to 60 per cent of median income. Second, at all poverty lines less than or equal to 76 per cent of median income, the 2001-02 poverty-rate profile lies above that of 1995-96, indicating an increase in relative poverty. However, the increase is statistically significant only at poverty lines from 25 through 61 per cent of median income. (It is marginally significant at a few other points.) Third, many of the increases in the relative poverty rate that are statistically significant are large enough to be noteworthy. For example, the 2.49 percentage point increase that occurs at 50 per cent of median income constitutes a (2.49/10.33 =) 24 per cent increase in poverty over the six-year period. Finally, the largest inter-temporal changes in relative poverty are observed at poverty thresholds close to half median income.

Absolute poverty-rate profiles for 1995-96 and 2001-02 are presented in Figure A2a. Similar to Figure A1b, Figure A2b graphs the change in the absolute poverty rate between 1995-96 and 2001-02, and its 95 per cent confidence interval, as functions of the real, equivalised poverty line. Six points on the poverty-rate profiles are displayed in Table A2, together with their standard errors, Z-statistics and P-

values. The range of poverty thresholds in Tables A1 and A2 are comparable in magnitude: 30 per cent of median income equals $6,213 in 1995-96 and $6,994 in 2001-02; 70 per cent of median income equals $14,497 in 1995-96 and $16,320 in 2001-02.

There are three salient features of Figure A2 and Table A2. First, as was the case with relative poverty, the choice of absolute poverty line has a considerable influence on the poverty rate. The rate of increase in the absolute poverty rate quickens after $8,000 in 1995-96 and after $9,000 in 2001-02, which are approximately equal to 40 per cent of median income in the two years. Second, in contrast to the relative poverty profiles, the 2001-02 absolute poverty-rate profile lies below that of 1995-96 at poverty lines greater than or equal to $8,400 per year, indicating a decrease in absolute poverty. Furthermore, the poverty-rate reductions are statistically significant at poverty lines from $9,800 through $20,000 per year. Third, the reduction in the absolute poverty rate between 1995-96 and 2001-02 is large and becomes larger as the poverty line increases. For example, at a poverty line of $9,000 the reduction in the poverty rate is 0.48 percentage points; at $12,000 it is 3.7 percentage points; and at $15,000 the reduction in the poverty rate is 5.72 percentage points.

The pictures of poverty painted by Figures A1 and A2 are somewhat different: relative poverty has risen significantly at poverty lines from 25 through 61 per cent of median income; absolute poverty has decreased significantly at poverty lines from $9,800 through $20,000 per year. It is possible to determine how much of a given change in the relative poverty rate can be attributed to (i) a change in the bottom end of the income distribution with the poverty line constant (that is, a change in the absolute poverty rate), and how much can be attributed to (ii) a change in the median

level of current, real, equivalised, disposable income with the bottom end of the distribution of income constant. Figure A3 displays one such decomposition while Table A3 decomposes several relative poverty-rate changes into these two components.

The decomposition of the change in the relative poverty rate can be performed in two ways, which will now be explained using a poverty line equal to 50 percent of median income as an example (see Rows C1-C3 of Table A3). The decomposition is presented graphically in Figure A3, which duplicates Figure A2a but adds vertical lines equal in monetary value to 50 per cent of median income in 1995-96 and 2001-02. Poverty rates at these poverty lines are labelled a, b, c and d.

Decomposition 1 In 1995-96 a poverty line set at 50 percent of median income was equivalent to $10,355 and the poverty rate was 10.33 per cent (see Point a in Figure A3). At that same threshold, the poverty rate in 2001-02 was 8.34 per cent (Point b), a fall of 1.99 percentage points. By 2001-02, 50 per cent of current median income was equivalent to $11,657 at which threshold the poverty rate was 12.82 percent (Point c), which is 4.48 percentage points higher than 8.34 per cent. In other words, the (12.82 – 10.33 =) 2.49 percentage point increase in the relative poverty rate (from Point a to Point c) can be decomposed into a 1.99 percentage point fall in absolute poverty (from Point a to Point b) and a 4.48 percentage point increase in relative poverty resulting from the increase in median income (from Point b to Point c).

Decomposition 2 In 1995-96 a poverty line equal to 50 percent of the median income was equal to $10,355 and the poverty rate was 10.33 per cent (see Point a). Had the poverty line in 1995-96 been set at $11,657, which is 50 percent of 2001-02's median income, the poverty rate would have been 16.72 per cent (Point d), which is

6.39 percentage points higher than 10.33 per cent. At a threshold of $11,657, the poverty rate in 2001-02 was 12.82 per cent (Point c), which is 3.9 percentage points lower than 16.72 per cent. In other words, the (12.82 – 10.33 =) 2.49 percentage point increase in the relative poverty rate (from Point a to Point c) can be decomposed into a 6.39 percentage point increase in relative poverty resulting from the increase in median income between 1995-96 and 2001-02 (from Point a to Point d) and a 3.90 percentage point fall in absolute poverty (from Point d to Point c).

Both decompositions demonstrate that the increase in relative poverty from 1995-96 to 2001-02, with the poverty line set at 50 per cent of median income, can be attributed to an increase in median income that more than offset a reduction in the size of the lower tail of the income distribution. The same conclusion is reached with poverty lines equal to 60 and 70 per cent of median income. However, at poverty lines equal to 30 and 40 per cent of median income, the increase in the poverty line and a small increase in the size of the lower tail of the income distribution both contributed to the increase in relative poverty.

A2. Poverty Rates and Poverty-Rate Changes of Children

In this section we focus on changes in poverty among children younger than 15 years from 1995-96 to 2001-02, the first and sixth years of the Howard-government. Some of our results for child poverty are similar to those relating to poverty in the population as a whole: at poverty lines from 25 through 62 per cent of median income of the entire population, relative poverty rates of children increased over the time period considered (see Figure A4 and Table A4); at poverty lines from $4,000 to $20,000 per year, absolute poverty rates of children decreased (see Figure A5 and Table A5).

There are, however, some additional points of interest. The first involves comparisons of top two sections of Table A4 with those of Table A1, and of Table A5 with Table A2. The poverty rate of children exceeds that of the entire population at all poverty lines reported in Tables A4 and A5[10] but by a smaller amount in 2001-02 than in 1995-96. For example, at a relative poverty line equal to 50 per cent of median income in 2001-02 the poverty rate of children is (14.85 – 12.82 =) 2.03 percentage points higher than that of the whole population; in 1995-96, the corresponding differential is (13.11 – 10.33 =) 2.79 percentage points. Thus we see a tendency for the relative poverty rate of children to become more like that of the entire population over the time period considered.

Second, although at relative poverty lines from 25 through 62 per cent of median income the poverty rates of children increase from 1995-96 to 2001-02, the increase is not statistically significant except at poverty lines equal to 47 to 48 per cent of median income – a much narrower range than that which applies to the whole population (compare Figure A4b with Figure A1b). In contrast, poverty rates of children decrease from 1995-96 to 2001-02 at all absolute poverty lines, and the reduction is statistically significant for poverty lines from $10,100 through $20,000 per year, which is almost the same as the corresponding range for the whole population (compare Figure A5b with Figure A2b).

How much of the change in the relative poverty rate of children can be attributed to a change in the real value of the poverty line, and how much to a change in the concentration of children at the bottom end of the income distribution? Table A6 follows the same decomposition procedure for children's poverty rates as Table A3 does for the entire population. The decomposition at a poverty line equal to 50

[10] This is true at poverty lines in excess of 9 per cent of median income ($2,000 per week) in 1995-96, and in excess of 25 per cent of median income ($5,900 per week) in 2001-02.

percent of median income (see Rows C1-C3 of Table A6) is illustrated graphically in Figure A6.

Decomposition 1

The 1.74 percentage point increase in the relative poverty rate (from 13.11 per cent at Point a to 14.85 per cent at Point c) can be decomposed into a 2.51 percentage point fall in absolute poverty (from 13.11 per cent at Point a to 10.6 per cent at Point b) and a 4.25 percentage point increase in relative poverty resulting from the increase in median income (from Point b to Point c).

Decomposition 2

The 1.74 percentage point increase in the relative poverty rate (from 13.11 per cent at Point a to 14.85 per cent at Point c) can be decomposed into a 7.07 percentage point increase in relative poverty resulting from the increase in median income (from 13.11 per cent at Point a to 20.19 per cent at Point d) and a 5.34 percentage point fall in absolute poverty (from Point d to Point c).

Both decompositions demonstrate that the increase in relative poverty of children from 1995-96 to 2001-02, with the poverty line set at 50 per cent of median income of the entire population, can be ascribed to an increase in median income that more than offset a reduced concentration of children in the lower tail of the income distribution. The same conclusion is reached with poverty lines equal to 30, 40 and 60 per cent of median income. At a poverty line equal to 70 per cent of median income, the increase in the poverty line is more than offset by a reduced concentration of children in the lower tail of the income distribution, resulting in a small decrease in the relative poverty rate of children.

A3. Sensitivity of Results to Choice of Income Measure

The size of poverty rates

At all relative poverty lines reported in this paper, the use of annual income produced a higher rate of relative poverty than that based on current income. This is true for the first and last year of the study[11], for the population as a whole (see Table 1 and Table A1) and for children (see Table 4 and Table A4).

To compare absolute poverty rates based on the two income measures we converted current weekly income to an annual basis and expressed all financial values in 2002-03 dollars. At poverty lines in excess of $9,000 per year, the poverty rate in 1995-96 was greater when using (annualised) current income than when using financial-year income. At smaller poverty lines the two poverty rates were approximately equal. The same was observed for children, although the critical poverty line was higher (approximately $12,200). In the final year of the study poverty rates based on financial-year incomes and (annualised) current incomes are approximately the same at all poverty lines observed. This is true for the entire population and for children.

The size and statistical significance of poverty-rate changes

The use of both annual and current income indicates an increase in the relative poverty rate for the population as a whole, except at very high relative poverty lines.[12] Furthermore, the size of the increase is approximately the same no matter what income measure is used. The largest discrepancy occurs at a poverty line equal to 40 per cent of median income, where a 1.37 percentage point increase is observed using annual income and a 0.35 percentage point increase is observed using current income. However, the range of poverty lines over which the relative poverty-rate increase is

[11] Comparisons are not strictly valid in the last year of the study because annual data apply to 2001-02 and current weekly data apply to 2002-03.
[12] Compare the bottom section of Table 1 with that of Table A1.

statistically significant is larger when annual income is used (25 through 61 per cent of median income) than when current income is used (48 through 56 per cent of median income).

At most relative poverty lines reported in this paper, both annual and current income indicate an increase in the relative poverty rate for children.[13] Again, the increase in the poverty rate is comparable in size: for example, at a poverty line equal to 50 per cent of median income, a 1.74 percentage point increase is observed using annual income and a 2.39 percentage point increase is observed using current income. Although the range of relative poverty lines over which an increase occurs is wider for annual income than for current income,[14] the range of relative poverty lines over which the increase is statistically significant is narrow in both cases: 47 to 48 per cent of median income for annual income, and 50 to 52 per cent for current income.

Both income measures indicate a decline in the rate of absolute poverty for the population as a whole between the two years, except at very low poverty thresholds.[15] The decrease was more pronounced when current income was used. Furthermore, the range of absolute poverty lines over which the poverty-rate reduction is statistically significant is wide in both cases: at least ($150 x 52 =) $7,800 per year and at least $9,700 per year when current and annual income, respectively, are used. The same is true in the case of children, although the range of absolute poverty lines over which the poverty-rate reduction is statistically significant is narrower: at least ($160 x 52 =) $8,320 per year and at least $10,100 per year.[16]

[13] Compare the bottom section of Table 4 with that of Table A4.
[14] For annual income the poverty rate increases at poverty lines equal to 25 through 61 per cent of median income. For current income the poverty rate increases at poverty lines up to 67 per cent of median income.
[15] Compare the bottom section of Table 2 with that of Table A2.
[16] Compare the bottom section of Table 5 with that of Table A5.

The decomposition of relative poverty-rate changes

At most poverty lines, the decomposition of relative poverty-rate changes into a component due to a change in the concentration of incomes in the bottom end of the income distribution (with the poverty line constant in real terms) and a component due to a change in the relative poverty line (with the bottom end of the distribution constant) showed similar results regardless of the income measure used.[17]

In general, the observed increase in relative poverty over the time period considered can be attributed to an increase in median income that more than offset a reduction in the size of the lower tail of the income distribution. The only exception is at a poverty line equal to 30 percent of median *annual* income where the increase is the poverty line is accompanied by a small increase in absolute poverty.

[17] For the population as a whole, compare Table 3 with those of Table A3. For children younger than 15 years, compare the top two sections of Table 6 with those of Table A6.

References

Australian Bureau of Statistics (ABS) (2004), *Household Income and Income Distribution Australia.* ABS Cat. No. 6523.0, ABS, Canberra, ACT.

Australian Bureau of Statistics (ABS) (2005), *Survey of Income and Housing - Basic and Expanded Confidentialised Unit Record Files: Technical Paper, Australia 2002-03 (reissue).* ABS Cat. No. 6541.0, ABS, Canberra, ACT.

Australian Bureau of Statistics (ABS) (various issues), *Year Book, Australia*. ABS Cat. No. 1301.0, ABS, Canberra, ACT.

Australian Bureau of Statistics ABS (2007), *Information Paper: Survey of Income and Housing, User Guide, Australia, 2005-06,* ABS Cat. No. 6553.0, ABS, Canberra, ACT.

Australian Bureau of Statistics (ABS) (2007), *Consumer Price Index, Australia*. ABS Cat. No. 6401.0, ABS, (downloaded April 2008) http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/6401.0Dec%202007?OpenDocument

ABS (2008) personal communication.

Harding, A., Lloyd, R. and Greenwell, H. (2001), '*Financial Disadvantage in Australia 1990 to 2000: The Persistence of Poverty in a Decade of Growth*,' Report commissioned from The National Centre for Social and Economic Modelling by The Smith Family.

Harding, A. and Mitchell, D. (1992), 'The Efficiency and Effectiveness of the Tax-Transfer System in the 1980s.' *Australian Tax Forum, 9*(3), pp. 277-303.

Harding, A. and Szukalska, A. (2000), '*Financial Disadvantage in Australia - 1999. The Unlucky Australians*,' Report commissioned from The National Centre for Social and Economic Modelling by The Smith Family.

Headey, Bruce; Marks, Gary and Wooden, Mark (2005). 'The Dynamics of Income Poverty in Australia: Evidence from the First Three Waves of the Hilda Survey.' *Australian Journal of Social Issues, 40*(4), pp. 541-52.

Howard, J. (2008) 'Sharing our Common Values', Irving Kristol Lecture, Delivered to the American Enterprise Institute Gala Dinner Washington, DC, 5th March 2008, printed in The Australian on 6th March 2008.

Hughes, H. (2001), 'The Politics of Envy: Poverty and Income Distribution.' *Policy*, 17(2), pp. 13-18.

Mitchell, D. and Harding, A. (1993), 'The Efficiency and Effectiveness of the Tax-Transfer System in the 1980s: A Rejoinder.' *Australian Tax Forum*, 10(3), pp. 403-16.

Saunders, P. (CIS). (2002), '*Poor Statistics. Getting the Facts Right About Poverty in Australia*,' Sydney: Centre for Independent Studies, Issue Analysis, No. 23.

Saunders, P. (SPRC). (2002), '*Getting Poverty Back onto the Policy Agenda*,' Sydney: The Smith Family (and the Social Policy Research Centre), Briefing Paper No. 10.

Saunders, P. (SPRC). (2005), *The Poverty Wars: Reconnecting Research with Reality*. Sydney: UNSW Press.

Saunders, P. (SPRC) and Bradbury, B. (2006), 'Monitoring Trends in Poverty and Income Distribution: Data, Methodology and Measurement.' *The Economic Record*, 82(258), pp. 341-64.

Saunders, P. and Matheson, G. (1993), 'The Efficiency and Effectiveness of the Tax-Transfer System in the 1980s: A Comment.' *Australian Tax Forum*, 10(3), pp. 385-402.

Siminski, P., Saunders, P.(SPRC) and Bradbury, B. (2003a), 'Reviewing the Inter-Temporal Consistency of ABS Household Income Data through Comparisons with External Aggrgates.' *Australian Economic Review*, 36(3), pp. 333-49.

Siminski, P., Saunders, P. (SPRC), Waseem, S. and Bradbury, B. (2003b), '*Assessing the Quality and Inter-Temporal Comparability of ABS Household Income Distribution Survey Data*,' Sydney: Social Policy Research Centre, Discussion Paper 123.

Smith, A. (1776), *An Inquiry Into the Nature and Causes of the Wealth of Nations*, (1982 ed.), London: Routledge.

Tsumori, K., Saunders, P. (CIS) and Hughes, H. (2002), '*Poor Arguments. A Response to the Smith Family Report on Poverty in Australia*,' Sydney: Centre for Independent Studies, Issue Analysis, no. 21.

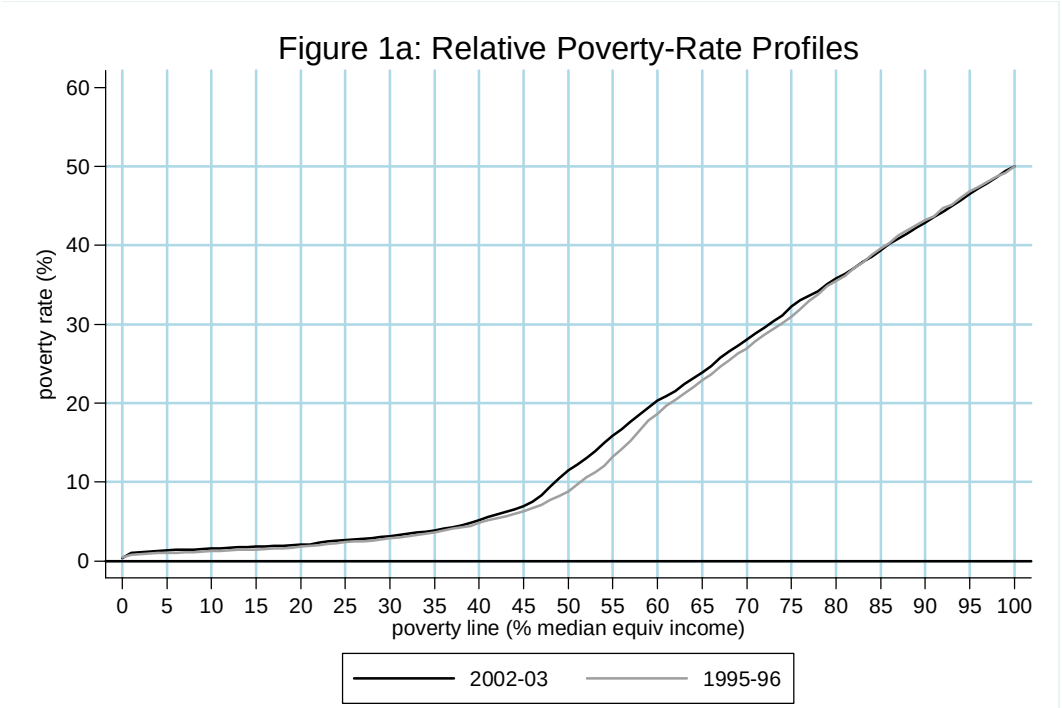


Figure 1a: Relative Poverty-Rate Profiles
poverty rate (%)
0
10
20
30
40
50
60
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
poverty line (% median equiv income)
2002-03
1995-96
Data: ABS, SIH-CURF, 1995-96 and 2002-03

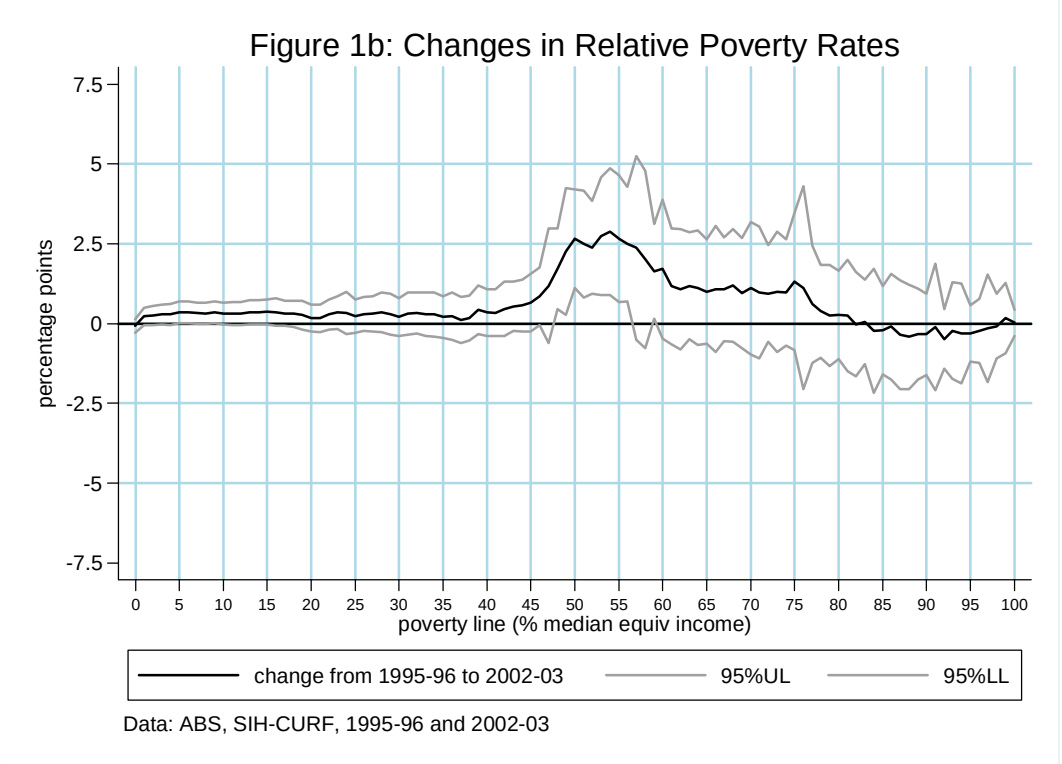


Figure 1b: Changes in Relative Poverty Rates
percentage points
-7.5
-5
-2.5
0
2.5
5
7.5
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
poverty line (% median equiv income)
change from 1995-96 to 2002-03
95%UL
95%LL
Data: ABS, SIH-CURF, 1995-96 and 2002-03

Table 1: Relative Poverty-Rate Profiles and their Changes, 1995-96 to 2002-03

1995-96 median equivalent income = $389 standard error = $5.18

Poverty line (% median income)	Poverty rate (%)	Jackknifed SE (%)
30%	2.92	0.15
40%	4.80	0.27
50%	8.80	0.64
60%	18.63	0.95
70%	26.90	0.90

2002-03 median equivalent income = $449 standard error = $2.97

Poverty line (% median income)	Poverty rate (%)	Jackknifed SE (%)
30%	3.13	0.26
40%	5.15	0.26
50%	11.46	0.45
60%	20.34	0.58
70%	28.02	0.56

1995-96 to 2002-03 Δ in median = $60 SE (Δ in median) = $5.97

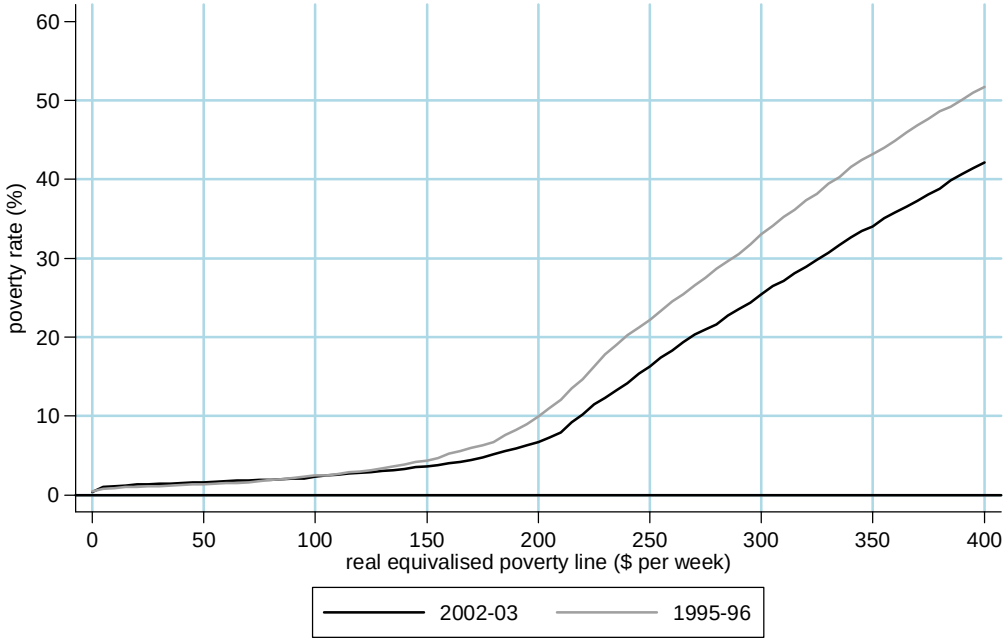
Poverty line (% median income)	Δ in poverty rate	SE of Δ in poverty rate	Z-stat	P-value (two-tailed)
30%	0.21	0.30	0.70	0.4819
40%	0.35	0.37	0.93	0.3500
50%	2.66	0.79	3.38	0.0007
60%	1.71	1.11	1.54	0.1245
70%	1.11	1.06	1.05	0.2925

Note 1: All monetary values are in 2002-03 dollars.

Note 2: Relative Poverty Lines are calculated as a percentage of median equivalised disposable (current weekly) income.

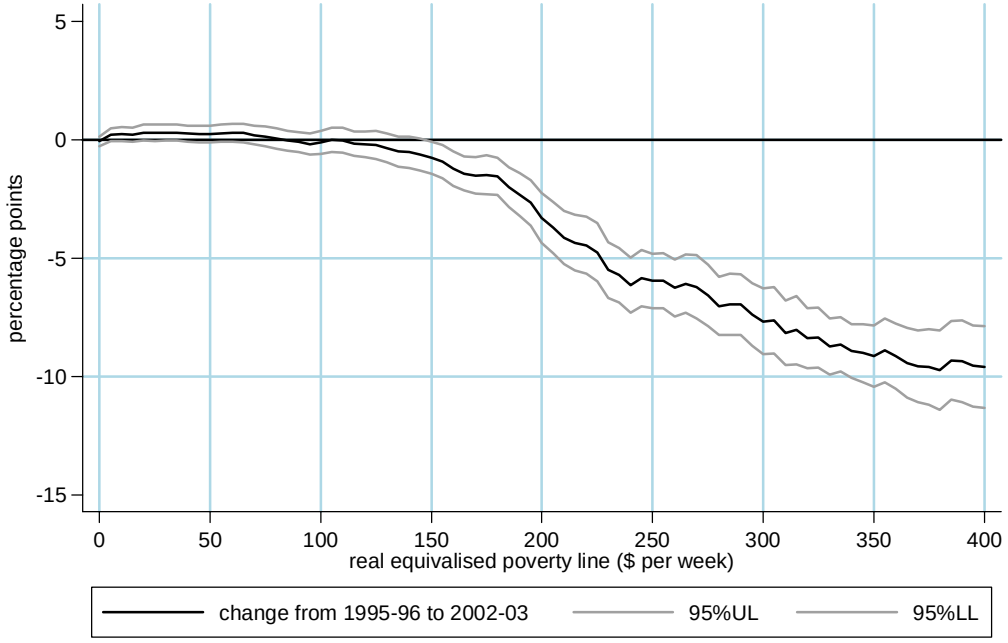
Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1995-96 and 2002-03, confidentialised unit record files.

Figure 2a: Absolute Poverty-Rate Profiles



Data: ABS, SIH-CURF, 1995-96 and 2002-03

Figure 2b: Changes in Absolute Poverty Rates



Data: ABS, SIH-CURF, 1995-96 and 2002-03

Table 2: Absolute Poverty-Rate Profiles and their Changes, 1995-96 to 2002-03

1995-96

Poverty line ($ per week)	Poverty rate (%)	Jackknifed SE (%)
$100	2.45	0.15
$150	4.37	0.24
$200	9.97	0.46
$250	22.22	0.42
$300	33.07	0.50
$350	43.19	0.50

2002-03

Poverty line ($ per week)	Poverty rate (%)	Jackknifed SE (%)
$100	2.32	0.20
$150	3.61	0.25
$200	6.67	0.29
$250	16.26	0.41
$300	25.40	0.51
$350	34.05	0.43

1995-96 to 2002-03

Poverty line ($ per week)	Δ in poverty rate	SE of Δ in poverty rate	Z-stat	P-value (two-tailed)
$100	-0.12	0.25	-0.50	0.6141
$150	-0.76	0.35	-2.18	0.0290
$200	-3.30	0.54	-6.09	0.0000
$250	-5.96	0.59	-10.13	0.0000
$300	-7.68	0.71	-10.79	0.0000
$350	-9.14	0.66	-13.89	0.0000

Note 1: All monetary values are in 2002-03 dollars.

Note 2: Absolute poverty lines are expressed in (current weekly) equivalised disposable income.

Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1995-96 and 2002-03, confidentialised unit record files.

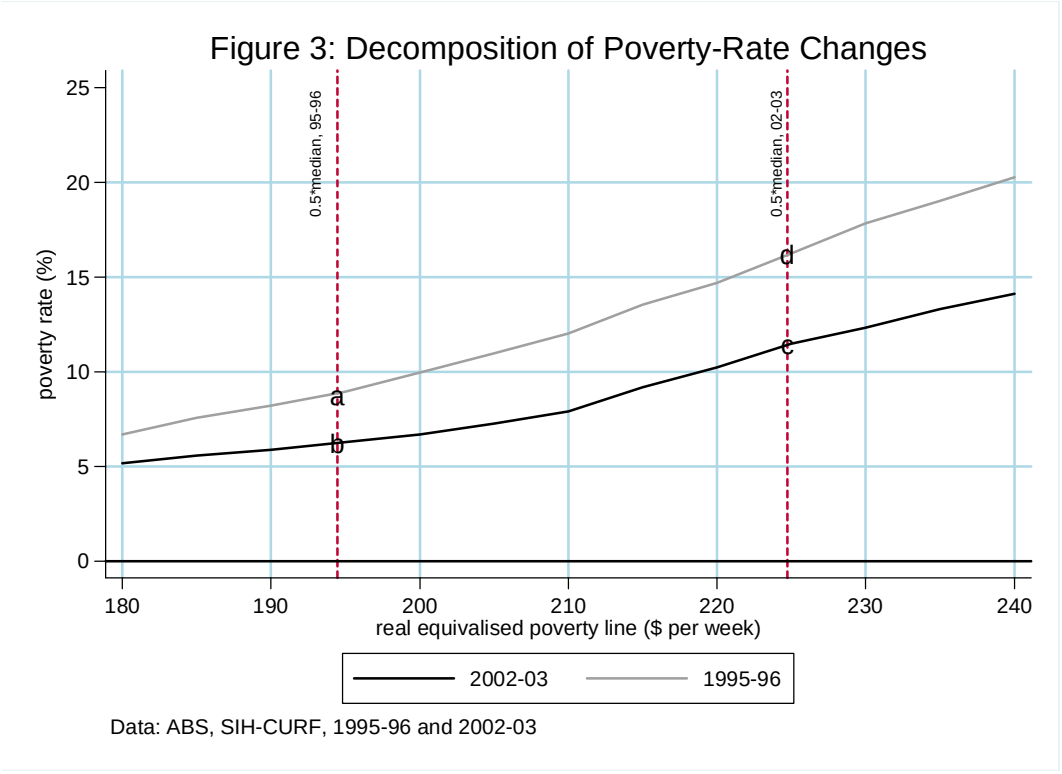


Figure 3: Decomposition of Poverty-Rate Changes
poverty rate (%)
25
20
15
10
5
0
0.5*median, 95-96
0.5*median, 02-03
a
b
c
d
180
190
200
210
220
230
240
real equivalised poverty line ($ per week)
2002-03
1995-96
Data: ABS, SIH-CURF, 1995-96 and 2002-03

Table 3: Decomposition of the Change in Relative Poverty Rates

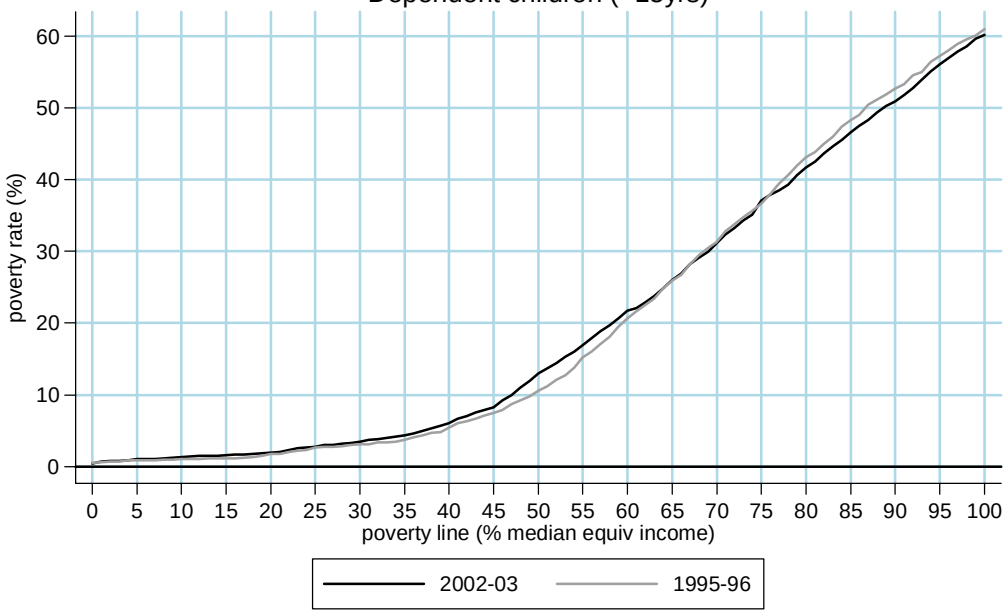
Type of poverty line (1)	Value of poverty line (2)	Poverty rate (%) 1995-96 (3)	Poverty rate (%) 2002-03 (4)	Change in absolute poverty rate 1995-96 to 2002-03 (5)	Change in relative poverty rate 1995-96 to 2002-03 (6)
A1. 30% of median income, 1995-96	$117	**2.92**	2.75	-0.17	
A2. 30% of median income, 2002-03	$135	3.64	**3.13**	*-0.51*	
A3. Change due to a change of median	$18	*0.72*	0.38		**0.21**
B1. 40% of median income, 1995-96	$156	**4.80**	3.80	-1.00	
B2. 40% of median income, 2002-03	$180	6.69	**5.15**	*-1.54*	
B3. Change due to a change of median	$24	*1.89*	1.35		**0.35**
C1. 50% of median income, 1995-96	$194	**8.80**	6.26	-2.54	
C2. 50% of median income, 2002-03	$225	16.21	**11.46**	*-4.75*	
C3. Change due to a change of median	$31	*7.41*	5.20		**2.66**
D1. 60% of median income, 1995-96	$233	**18.63**	12.91	-5.72	
D2. 60% of median income, 2002-03	$270	26.48	**20.34**	*-6.14*	
D3. Change due to a change of median	$37	*7.85*	7.43		**1.71**
E1. 70% of median income, 1995-96	$272	**26.90**	20.61	-6.29	
E2. 70% of median income, 2002-03	$315	35.99	**28.02**	*-7.97*	
E3. Change due to a change of median	$43	*9.09*	7.41		**1.12**

Note 1: All monetary values are in 2002-03 dollars.

Note 2: Relative poverty lines are calculated as a percentage of median equiivalised disposable (current weekly) income.

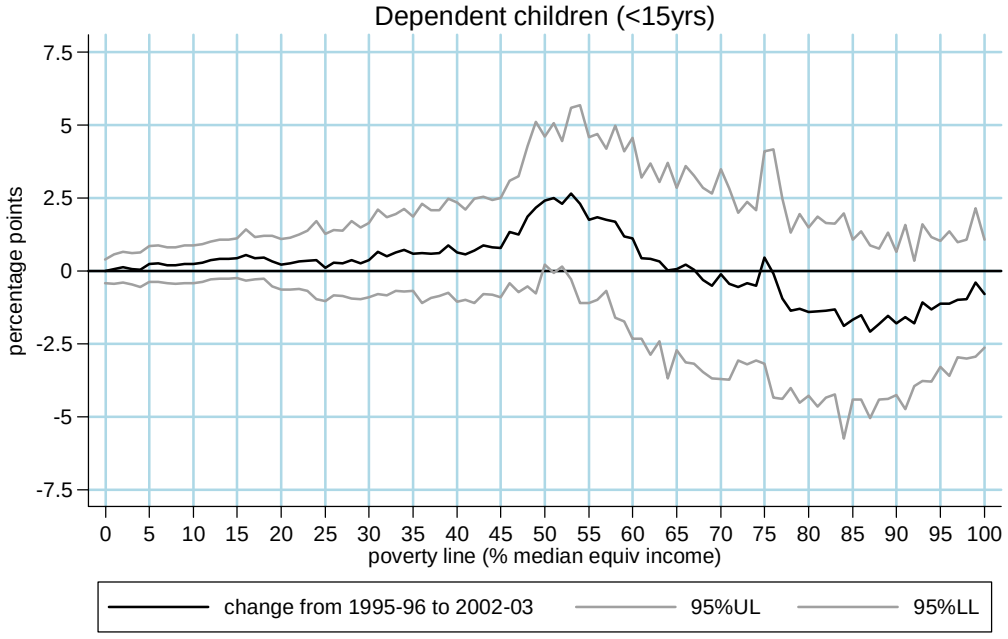
Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1995-96 and 2002-03, confidentialised unit record files.

Figure 4a: Relative Poverty-Rate Profiles



Data: ABS, SIH-CURF, 1995-96 and 2002-03

Figure 4b: Changes in Relative Poverty Rates



Data: ABS, SIH-CURF, 1995-96 and 2002-03

Table 4: Relative Poverty-Rate Profiles and their Changes, 1995-96 to 2002-03
Dependent Children (<15yrs)

1995-96 median equivalent income = $389 standard error = $5.18

Poverty line (% median income)	Poverty rate (%)	Jackknifed SE (%)
30%	3.07	0.42
40%	5.44	0.70
50%	10.59	0.77
60%	20.63	1.45
70%	31.27	1.40

2002-03 median equivalent income = $449 standard error = $2.97

Poverty line (% median income)	Poverty rate (%)	Jackknifed SE (%)
30%	3.42	0.50
40%	6.08	0.51
50%	12.99	0.81
60%	21.74	0.98
70%	31.16	1.19

1995-96 to 2002-03 Δ in median = $60 SE (Δ in median) = $5.97

Poverty line (% median income)	Δ in poverty rate	SE of Δ in poverty rate	Z-stat	P-value (two-tailed)
30%	0.36	0.65	0.55	0.5838
40%	0.64	0.87	0.74	0.4617
50%	2.39	1.12	2.14	0.0324
60%	1.11	1.75	0.63	0.5260
70%	-0.12	1.84	-0.06	0.9487

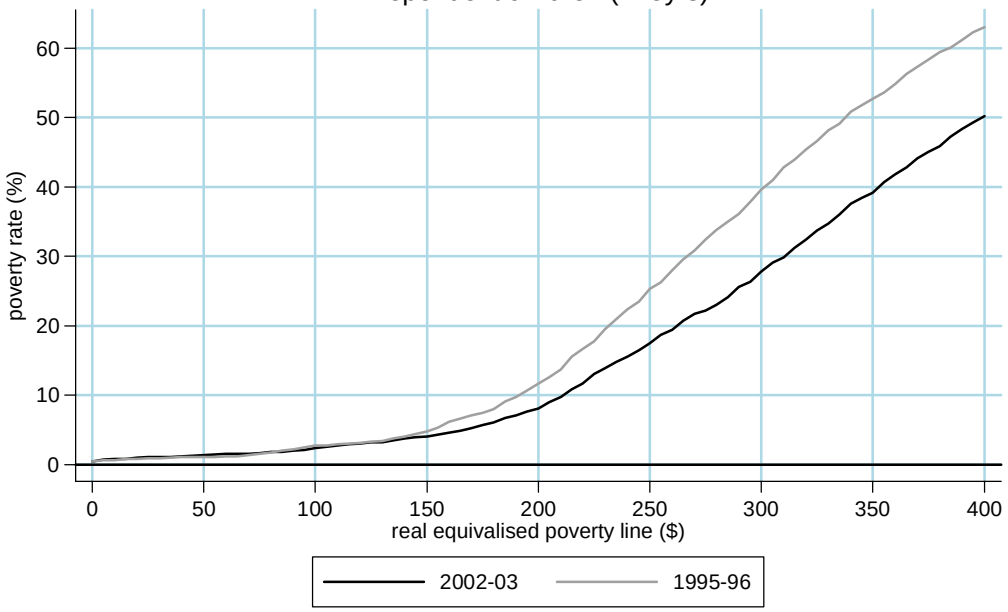
Note 1: All monetary values are in 2002-03 dollars.

Note 2: Relative Poverty Lines are calculated as a percentage of median equivalised disposable (current weekly) income.

Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1995-96 and 2002-03, confidentialised unit record files.

Figure 5a: Absolute Poverty-Rate Profiles

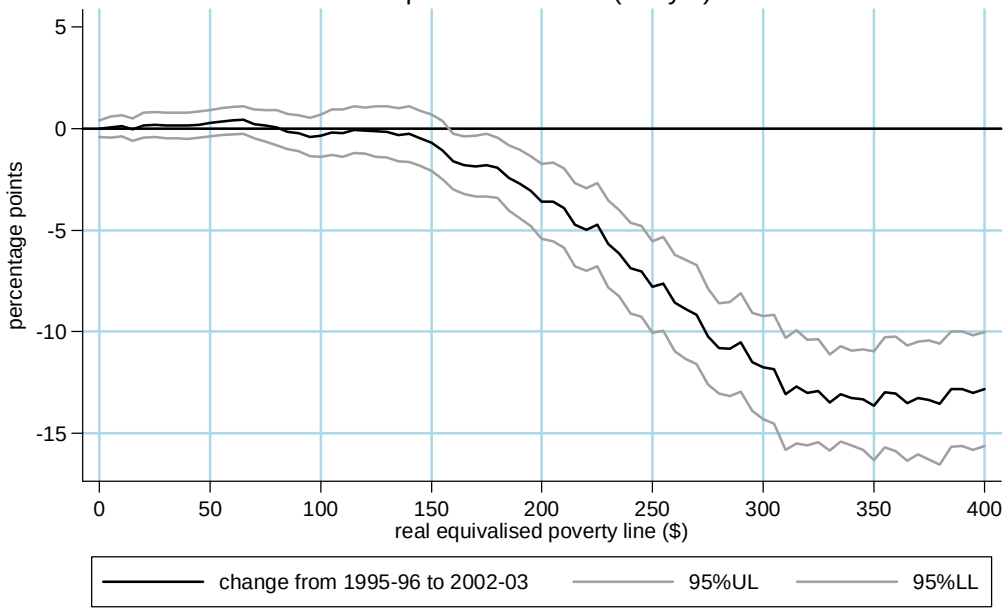
Dependent children (<15yrs)



Data: ABS, SIH-CURF, 1995-96 and 2002-03

Figure 5b: Changes in Absolute Poverty Rates

Dependent children (<15yrs)



Data: ABS, SIH-CURF, 1995-96 and 2002-03

Table 5: Absolute Poverty-Rate Profiles and their Changes, 1995-96 to 2002-03
Dependent Children (<15yrs)

1995-96

Poverty line ($ per week)	Poverty rate (%)	Jackknifed SE (%)
$100	2.67	0.39
$150	4.74	0.50
$200	11.66	0.74
$250	25.27	0.80
$300	39.59	0.75
$350	52.74	0.86

2002-03

Poverty line ($ per week)	Poverty rate (%)	Jackknifed SE (%)
$100	2.32	0.36
$150	4.04	0.50
$200	8.08	0.56
$250	17.48	0.83
$300	27.83	1.05
$350	39.11	1.06

1995-96 to 2002-03

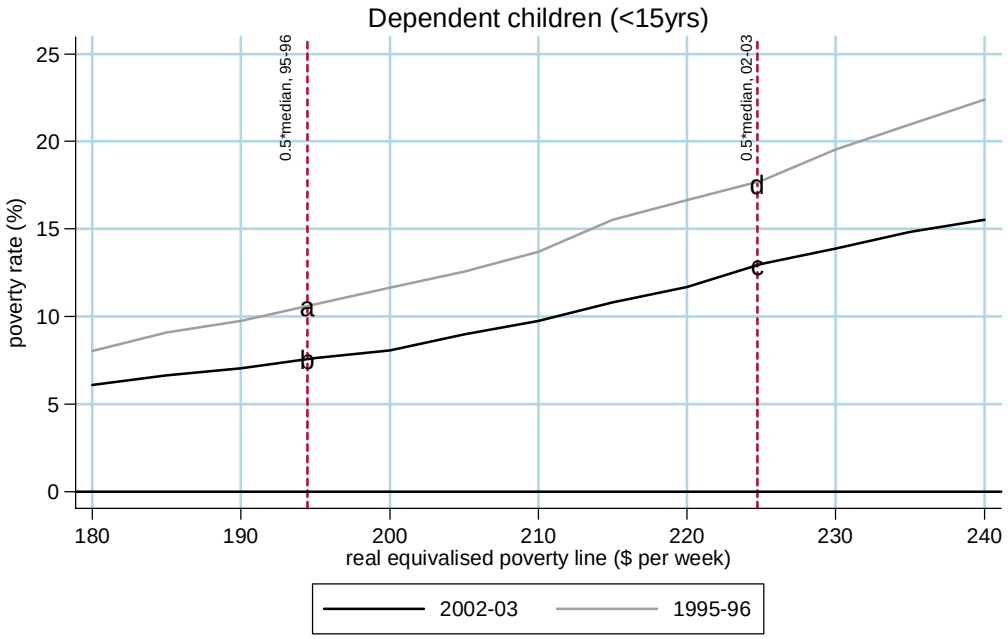
Poverty line ($ per week)	Δ in poverty rate	SE of Δ in poverty rate	Z-stat	P-value (two-tailed)
$100	-0.37	0.53	-070	0.4858
$150	-0.70	0.71	-0.99	0.3232
$200	-3.58	0.93	-3.84	0.0001
$250	-7.79	1.15	-6.77	0.0000
$300	-11.76	1.29	-9.11	0.0000
$350	-13.63	1.37	-9.98	0.0000

Note 1: All monetary values are in 2002-03 dollars.

Note 2: Absolute poverty lines are expressed in (current weekly) equivalised disposable income.

Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1995-96 and 2002-03, confidentialised unit record files.

Figure 6: Decomposition of Poverty-Rate Changes



Data: ABS, SIH-CURF, 1995-96 and 2002-03

Table 6: Decomposition of the Change in Relative Poverty Rates
Dependent Children (<15yrs)

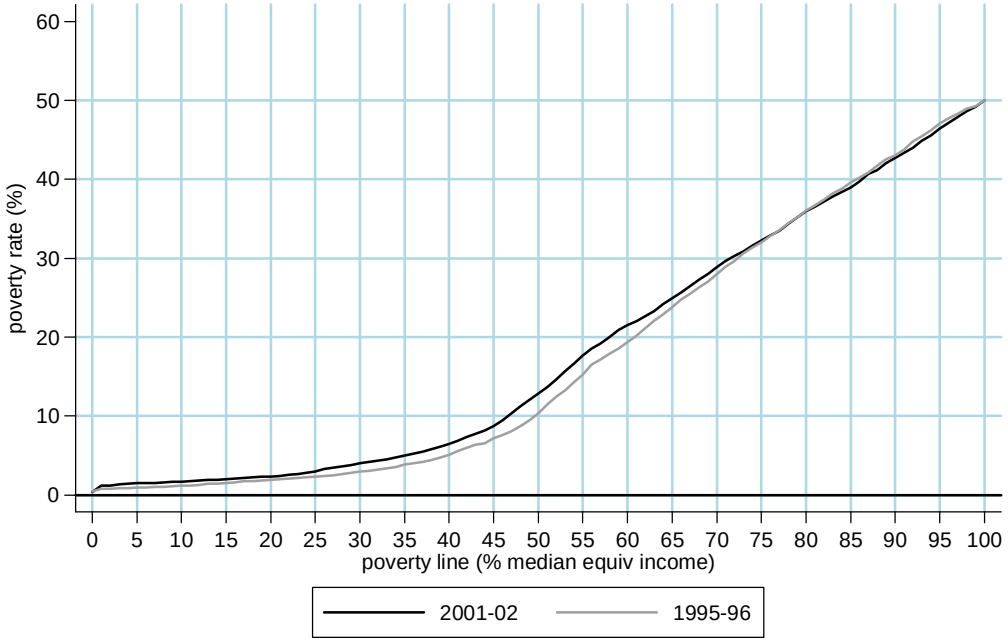
Type of poverty line (1)	Value of poverty line (2)	Poverty rate (%) 1995-96 (3)	Poverty rate (%) 2002-03 (4)	Change in absolute poverty rate 1995-96 to 2002-03 (5)	Change in relative poverty rate 1995-96 to 2002-03 (6)
A1. 30% of median income, 1995-96	$117	**3.07**	2.97	-0.10	
A2. 30% of median income, 2002-03	$135	3.73	**3.42**	*-0.31*	
A3. Change due to a change of median	$18	*0.66*	0.45		**0.35**
B1. 40% of median income, 1995-96	$156	**5.44**	4.32	-1.12	
B2. 40% of median income, 2002-03	$180	8.01	**6.08**	*-1.93*	
B3. Change due to a change of median	$24	*2.57*	1.76		**0.64**
C1. 50% of median income, 1995-96	$194	**10.59**	7.61	-2.98	
C2. 50% of median income, 2002-03	$225	17.63	**12.99**	*-4.64*	
C3. Change due to a change of median	$31	*7.04*	5.38		**2.40**
D1. 60% of median income, 1995-96	$233	**20.63**	14.39	-6.24	
D2. 60% of median income, 2002-03	$270	30.81	**21.74**	*-9.07*	
D3. Change due to a change of median	$37	*10.18*	7.35		**1.11**
E1. 70% of median income, 1995-96	$272	**31.27**	21.94	-9.33	
E2. 70% of median income, 2002-03	$315	43.74	**31.16**	-12.58	
E3. Change due to a change of median	$43	12.47	9.22		**-0.11**

Note 1: All monetary values are in 2002-03 dollars.

Note 2: Relative poverty lines are calculated as a percentage of median equiivalised disposable (current weekly) income.

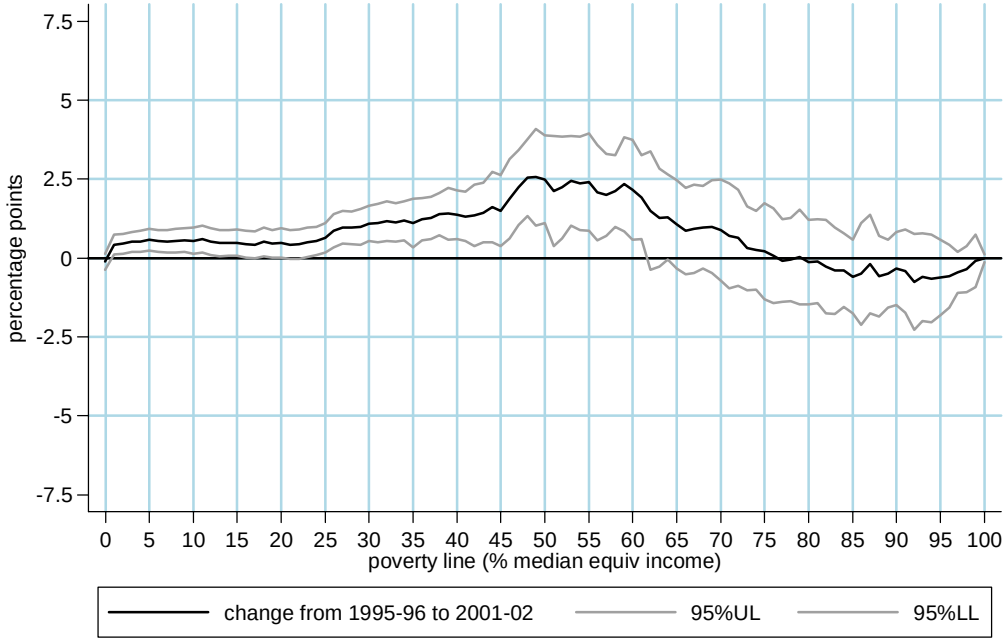
Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1995-96 and 2002-03, confidentialised unit record files.

Figure A1a: Relative Poverty-Rate Profiles



Data: ABS, SIH-CURF, 1996-97 and 2002-03

Figure A1b: Changes in Relative Poverty Rates



Data: ABS, SIH-CURF, 1996-97 and 2002-03

Table A1: Relative Poverty-Rate Profiles and their Changes, 1995-96 to 2001-02
Annual Household Disposable Income

1995-96 median equivalent income = $20,710 standard error = $202

Poverty line (% median income)	Poverty rate (%)	Jackknifed SE (%)
30%	2.93	0.20
40%	5.08	0.22
50%	10.33	0.60
60%	19.35	0.65
70%	27.97	0.68

2001-02 median equivalent income = $23,314 standard error = $211

Poverty line (% median income)	Poverty rate (%)	Jackknifed SE (%)
30%	4.03	0.21
40%	6.45	0.32
50%	12.82	0.37
60%	21.51	0.47
70%	28.85	0.45

1995-96 to 2001-02 Δ in median = $2,604 SE (Δ in median) = $292

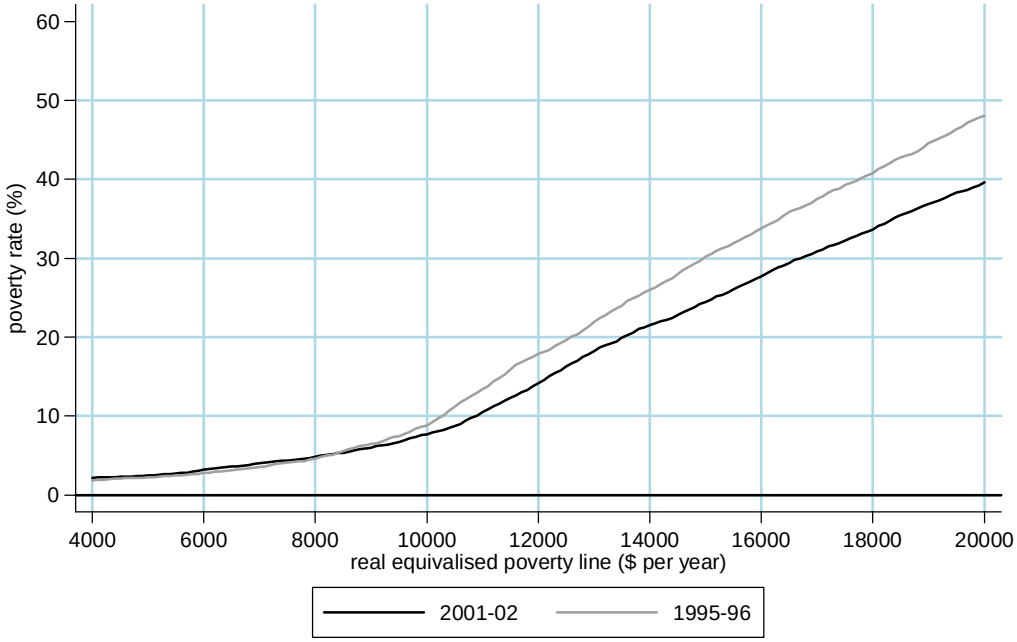
Poverty line (% median income)	Δ in poverty rate	SE of Δ in poverty rate	Z-stat	p-value (two-tailed)
30%	1.10	0.29	3.80	0.0001
40%	1.37	0.39	3.52	0.0004
50%	2.49	0.71	3.52	0.0004
60%	2.16	0.81	2.67	0.0075
70%	0.88	0.82	1.07	0.2832

Note 1: All monetary values are in 2001-02 dollars.

Note 2: Relative Poverty Lines are calculated as a percentage of median equivalised disposable (annual) income

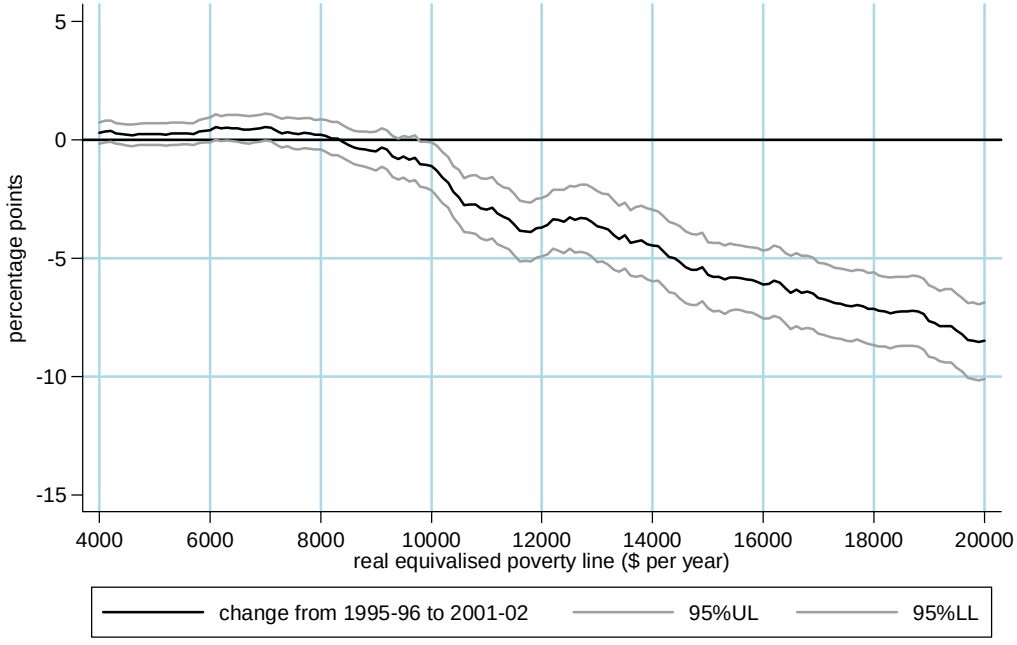
Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1996-97 and 2002-03, confidentialised unit record files.

Figure A2a: Absolute Poverty-Rate Profiles



Data: ABS, SIH-CURF, 1996-97 and 2002-03

Figure A2b: Changes in Absolute Poverty Rates



Data: ABS, SIH-CURF, 1996-97 and 2002-03

Table A2: Absolute Poverty-Rate Profiles and their Changes, 1995-96 to 2001-02
Annual Household Disposable Income

1995-96

Poverty line ($ per year)	Poverty rate (%)	Jackknifed SE (%)
$6,000	2.77	0.20
$9,000	6.47	0.28
$12,000	17.88	0.50
$15,000	30.17	0.54
$18,000	40.79	0.63

2001-02

Poverty line ($ per year)	Poverty rate (%)	Jackknifed SE (%)
$6,000	3.18	0.18
$9,000	5.99	0.30
$12,000	14.18	0.38
$15,000	24.46	0.46
$18,000	33.63	0.47

1995-96 to 2001-02

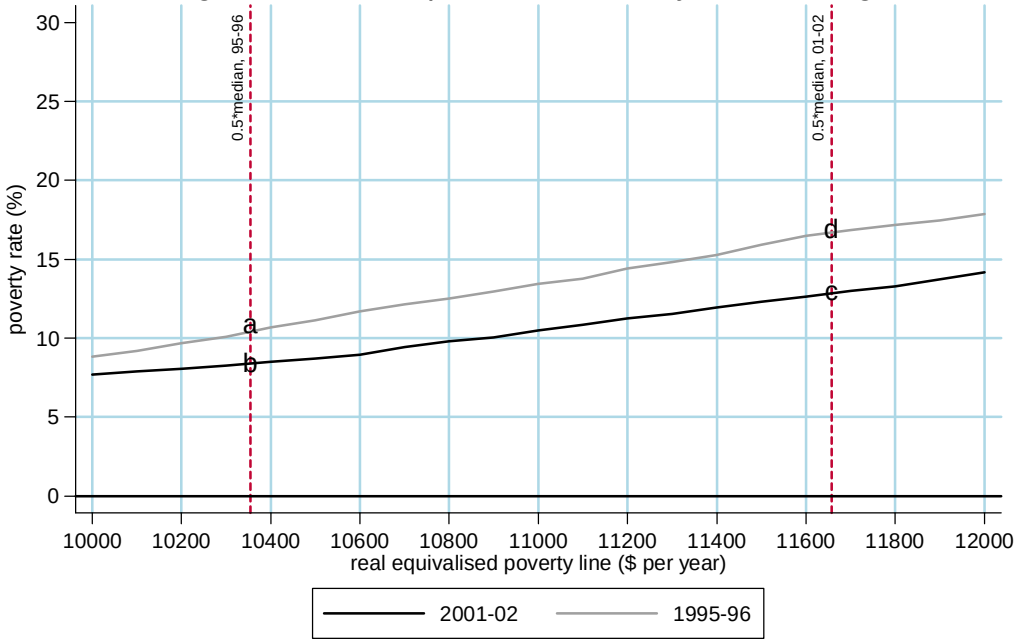
Poverty line ($ per year)	Δ in poverty rate	SE of Δ in poverty rate	Z-stat	p-value (two-tailed)
$6,000	0.41	0.27	1.52	0.1294
$9,000	-0.48	0.42	-1.16	0.2441
$12,000	-3.70	0.63	-5.85	0.0268
$15,000	-5.72	0.71	-8.06	0.0001
$18,000	-7.15	0.79	-9.10	0.0001

Note 1: All monetary values are in 2001-02 dollars.

Note 2: Absolute poverty lines are expressed in (annual) equivalised disposable income.

Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1996-97 and 2002-03, confidentialised unit record files.

Figure A3: Decomposition of Poverty-Rate Changes



Data: ABS, SIH-CURF, 1996-97 and 2002-03

Table A3: Decomposition of the Change in Relative Poverty Rates
Annual Household Disposable Income

Type of poverty line (1)	Value of poverty line (2)	Poverty rate (%) 1995-96 (3)	2001-02 (4)	Change in absolute poverty rate 1995-96 to 2001-02 (5)	Change in relative poverty rate 1995-96 to 2001-02 (6)
A1. 30% of median income, 1995-96	$6,213	**2.93**	3.40	0.47	
A2. 30% of median income, 2001-02	$6,994	3.49	**4.03**	*0.54*	
A3. Change due to a change of median	$781	*0.56*	0.63		**1.10**
B1. 40% of median income, 1995-96	$8,284	**5.08**	5.13	0.04	
B2. 40% of median income, 2001-02	$9,326	7.22	**6.45**	*-0.76*	
B3. Change due to a change of median	$1,041	*2.13*	1.33		**1.37**
C1. 50% of median income, 1995-96	$10,355	**10.33**	8.34	-1.99	
C2. 50% of median income, 2001-02	$11,657	16.72	**12.82**	*-3.90*	
C3. Change due to a change of median	$1,302	*6.39*	4.48		**2.49**
D1. 60% of median income, 1995-96	$12,426	**19.35**	15.90	-3.45	
D2. 60% of median income, 2001-02	$13,988	26.02	**21.51**	*-4.50*	
D3. Change due to a change of median	$1,562	*6.66*	5.61		**2.16**
E1. 70% of median income, 1995-96	$14,497	**27.97**	22.80	-5.17	
E2. 70% of median income, 2001-02	$16,320	34.88	**28.85**	*-6.03*	
E3. Change due to a change of median	$1,823	*6.91*	6.05		**0.88**

Note 1: All monetary values are in 2001-02 dollars.

Note 2: Relative poverty lines are calculated as a percentage of median equivalised disposable (annual) income.

Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1996-97 and 2002-03, confidentialised unit record files.

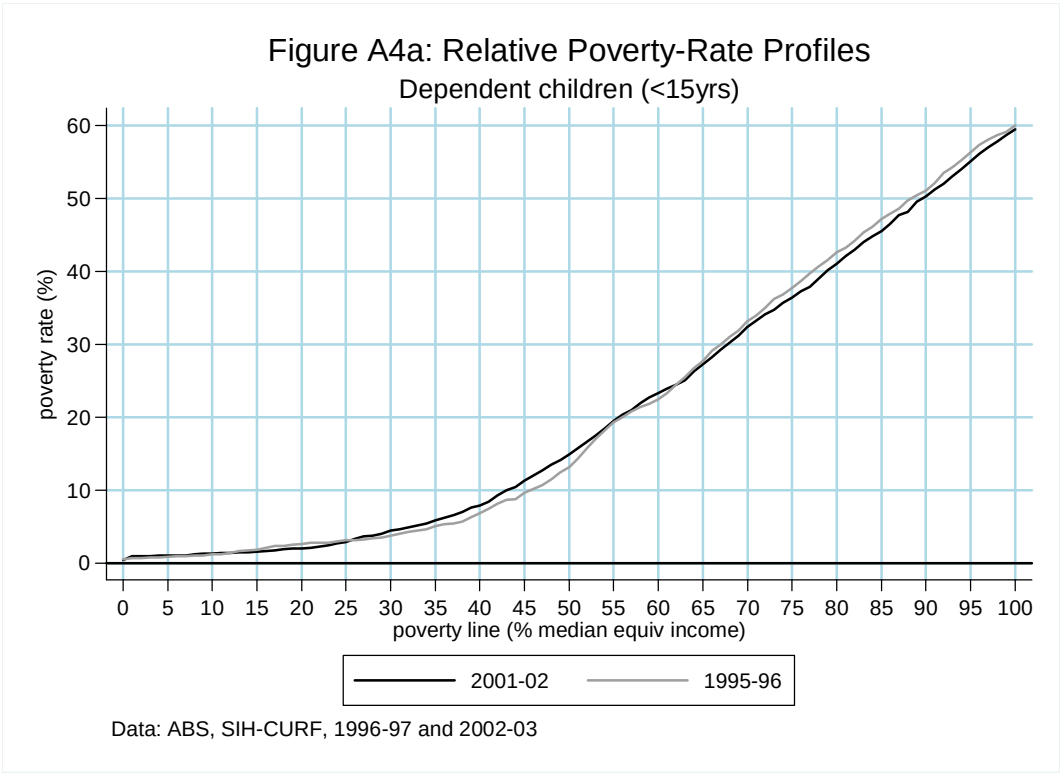


Figure A4a: Relative Poverty-Rate Profiles
Dependent children (<15yrs)
poverty rate (%)
0
10
20
30
40
50
60
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
poverty line (% median equiv income)
2001-02
1995-96
Data: ABS, SIH-CURF, 1996-97 and 2002-03

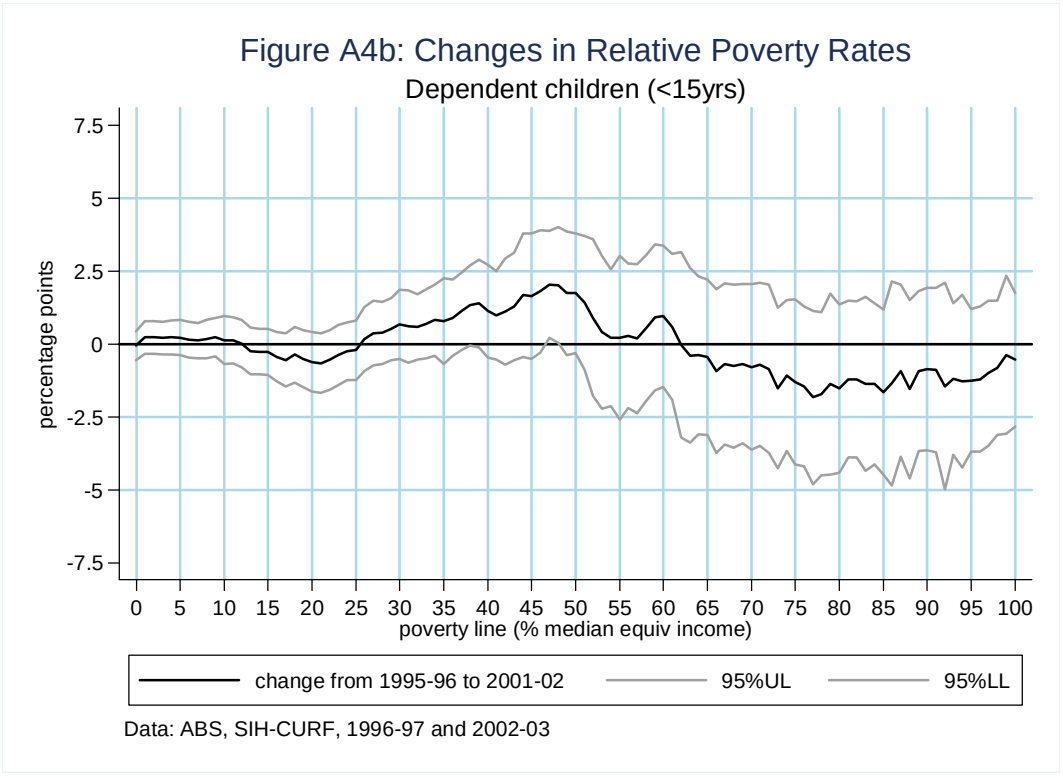


Figure A4b: Changes in Relative Poverty Rates
Dependent children (<15yrs)
percentage points
-7.5
-5
-2.5
0
2.5
5
7.5
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
poverty line (% median equiv income)
change from 1995-96 to 2001-02
95%UL
95%LL
Data: ABS, SIH-CURF, 1996-97 and 2002-03

Table A4: Relative Poverty-Rate Profiles and their Changes, 1995-96 to 2001-02
Dependent Children (<15yrs)
Annual Household Disposable Income

1995-96 median equivalent income = $20,710 standard error = $202

Poverty line (% median income)	Poverty rate (%)	Jackknifed SE (%)
30%	3.74	0.49
40%	6.77	0.51
50%	13.11	0.79
60%	22.38	0.94
70%	33.09	1.07

2001-02 median equivalent income = $23,314 standard error = $211

Poverty line (% median income)	Poverty rate (%)	Jackknifed SE (%)
30%	4.42	0.36
40%	7.89	0.63
50%	14.85	0.68
60%	23.33	0.80
70%	32.31	0.98

1995-96 to 2001-02 Δ in median = $2,604 SE (Δ in median) = $292

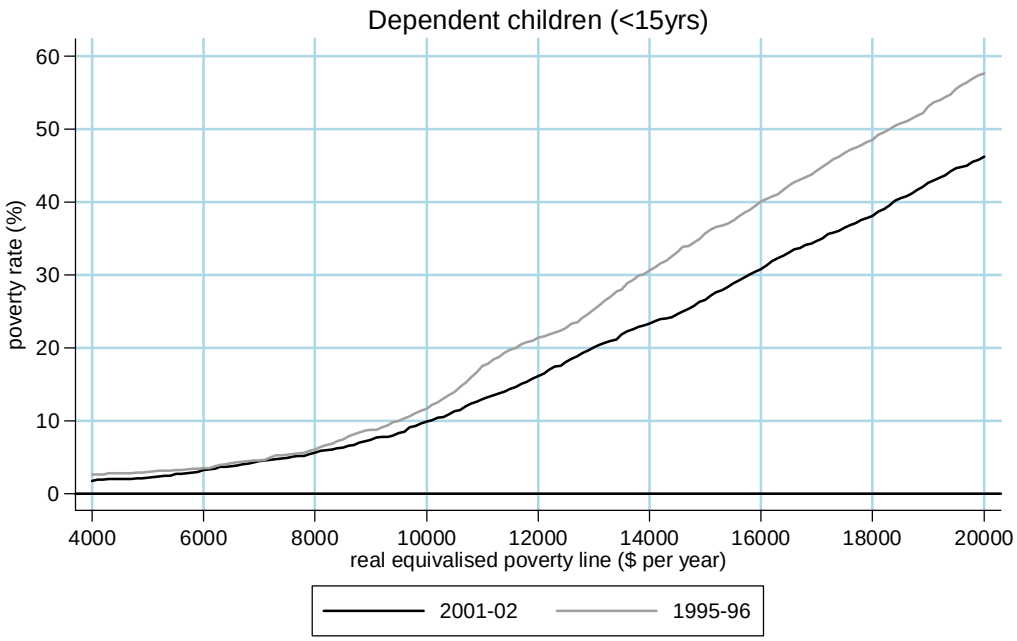
Poverty line (% median income)	Δ in poverty rate	SE of Δ in poverty rate	Z-stat	p-value (two-tailed)
30%	0.68	0.60	1.13	0.2592
40%	1.12	0.82	1.38	0.1683
50%	1.74	1.04	1.67	0.0956
60%	0.95	1.23	0.77	0.4417
70%	-0.79	1.45	-0.54	0.5877

Note 1: All monetary values are in 2001-02 dollars.

Note 2: Relative Poverty Lines are calculated as a percentage of median equivalised disposable (annual) income

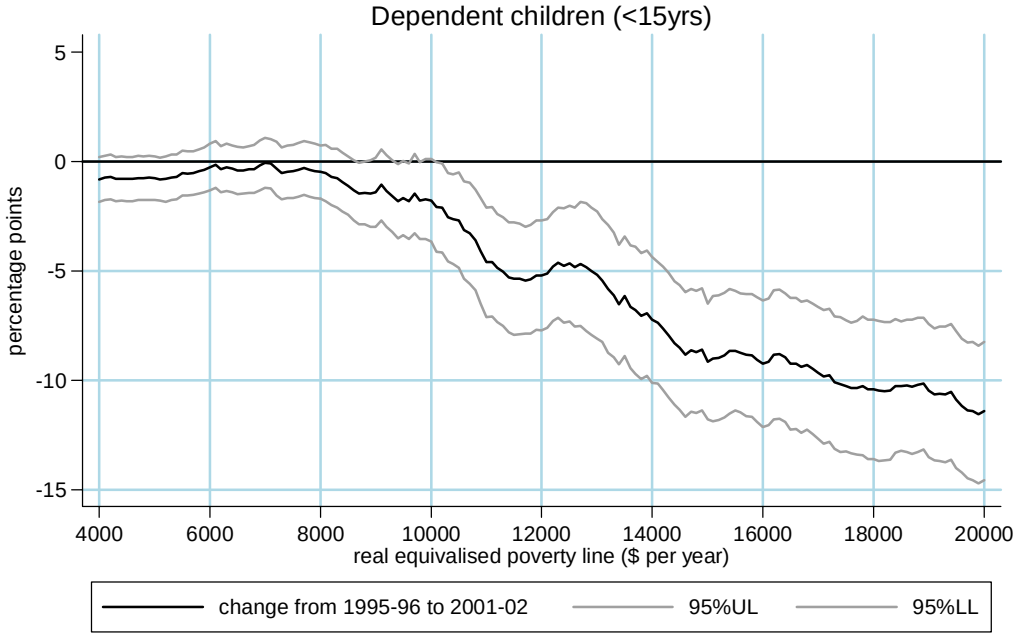
Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1996-97 and 2002-03, confidentialised unit record files.

Figure A5a: Absolute Poverty-Rate Profiles



Data: ABS, SIH-CURF, 1996-97 and 2002-03

Figure A5b: Changes in Absolute Poverty Rates



Data: ABS, SIH-CURF, 1996-97 and 2002-03

Table A5: Absolute Poverty-Rate Profiles and their Changes, 1995-96 to 2001-02
Dependent Children (<15yrs)
Annual Household Disposable Income

1995-96

Poverty line ($ per week)	Poverty rate (%)	Jackknifed SE (%)
$6,000	3.47	0.45
$9,000	8.74	0.56
$12,000	21.33	1.05
$15,000	35.69	1.02
$18,000	48.45	1.17

2001-02

Poverty line ($ per week)	Poverty rate (%)	Jackknifed SE (%)
$6,000	3.21	0.30
$9,000	7.32	0.58
$12,000	16.11	0.74
$15,000	26.54	0.88
$18,000	38.03	1.14

1995-96 to 2001-02

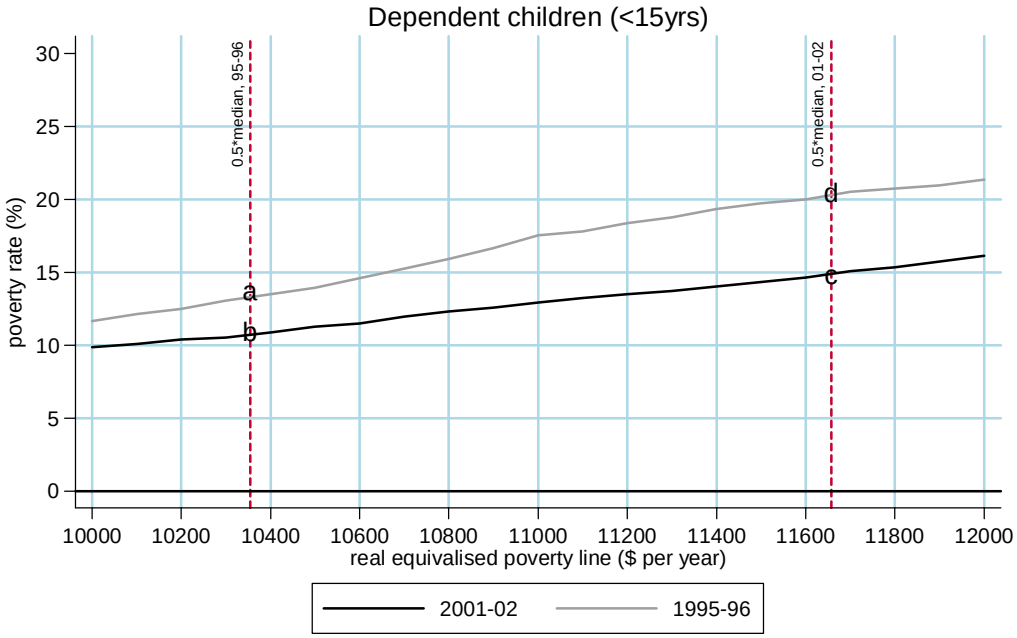
Poverty line ($ per week)	Δ in poverty rate	SE of Δ in poverty rate	Z-stat	p-value (two-tailed)
$6,000	-0.26	0.54	-0.49	0.6272
$9,000	-1.42	0.81	-1.75	0.0795
$12,000	-5.22	1.29	-4.06	0.0001
$15,000	-9.15	1.35	-6.77	0.0001
$18,000	-10.42	1.63	-6.39	0.0001

Note 1: All monetary values are in 2001-02 dollars.

Note 2: Absolute poverty lines are expressed in (annual) equivalised disposable income.

Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1996-97 and 2002-03, confidentialised unit record files.

Figure A6: Decomposition of Relative Poverty-Rate Changes



Data: ABS, SIH-CURF, 1996-97 and 2002-03

Table A6: Decomposition of the Change in Relative Poverty Rates
Annual Household Disposable Income
Dependent Children (<15yrs)

Type of poverty line (1)	Value of poverty line (2)	Poverty rate (%) 1995-96 (3)	2001-02 (4)	Change in absolute poverty rate 1995-96 to 2001-02 (5)	Change in relative poverty rate 1995-96 to 2001-02 (6)
A1. 30% of median income, 1995-96	$6,213	**3.74**	3.39	-0.35	
A2. 30% of median income, 2001-02	$6,994	4.48	**4.42**	*-0.06*	
A3. Change due to a change of median	$781	*0.74*	1.03		**0.68**
B1. 40% of median income, 1995-96	$8,284	**6.77**	6.02	-0.75	
B2. 40% of median income, 2001-02	$9,326	9.61	**7.89**	*-1.72*	
B3. Change due to a change of median	$1,041	*2.84*	1.87		**1.12**
C1. 50% of median income, 1995-96	$10,355	**13.11**	10.60	-2.51	
C2. 50% of median income, 2001-02	$11,657	20.19	**14.85**	*-5.34*	
C3. Change due to a change of median	$1,302	*7.07*	4.25		**1.74**
D1. 60% of median income, 1995-96	$12,426	**22.38**	17.59	-4.79	
D2. 60% of median income, 2001-02	$13,988	30.57	**23.33**	*-7.24*	
D3. Change due to a change of median	$1,562	*8.19*	5.74		**0.95**
E1. 70% of median income, 1995-96	$14,497	**33.09**	24.59	-8.51	
E2. 70% of median income, 2001-02	$16,320	41.10	**32.31**	*-8.79*	
E3. Change due to a change of median	$1,823	*8.00*	7.72		**-0.79**

Note 1: All monetary values are in 2001-02 dollars.

Note 2: Relative poverty lines are calculated as a percentage of median equivalised disposable (annual) income.

Source: Author's computations using the ABS' *Surveys of Income and Housing*, 1996-97 and 2002-03, confidentialised unit record files.