MINISTRY OF SOCIAL DEVELOPMENT
Te Manatū Whakahiato Ora

Household incomes in New Zealand: trends in indicators of inequality and hardship 1982 to 2004

Prepared by Bryan Perry

Ministry of Social Development
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Changes since last report

- This is the first report of the series

Next report

- The next report is scheduled for May-June 2008 and will include an update based on the 2007 Household Economic Survey (HES). (The timing is dependent on the availability of the HES data.)

Acknowledgements

I thank all those who provided comments on earlier drafts – colleagues within the Ministry of Social Development and from other government agencies, academics, and researchers from NGOs. My special thanks to Nadra Zarifeh who prepared the SAS coding for the extraction of the HES data. Responsibility for all the analysis and interpretation in the report (including any errors or omissions) remains mine alone.

Contents

List of Figures and Tables

Section A Introduction

Section B Household incomes in 2004

Section C Trends in key labour market, demographic and social assistance variables

Section D Household incomes and income inequality, 1982 - 2004

Section I Trends in income poverty for older New Zealanders

Section J International comparisons for income poverty

Section K Income-based poverty and hardship findings compared with those from the Living Standards research

Abbreviations

AHC	After (deducting) housing costs
AS	Accommodation Supplement
BDL	Benefit Datum Line
BHC	Before (deducting) housing costs
CV	Constant value (referring to low-income thresholds or 'poverty lines' kept constant in real terms) = 'fixed lines'
DPB	Domestic Purposes Benefit
EFU	Economic family unit
EU	European Union
Eurostat	The Statistical Office of the EU
FT	Full-time (30 hours or more per week)
HES	Household Economic Survey
HH	Household
IB	Invalid's Benefit
NAOTWE	Net average ordinary time weekly earnings
NZPMP	New Zealand Poverty Measurement Project
NZS	New Zealand Superannuation
OECD	Organisation for Economic Co-operation and Development
PMP	Poverty Measurement Project
PT	Part-time (less than 30 hours per week)
REL	Relative-to-contemporary-median (referring to low-income thresholds or 'poverty lines' that are calculated as a proportion of the median for the survey year in question) = 'moving lines'
SB	Sickness Benefit
SP	Sole parent
2P	Two parent
Taxmod	The New Zealand Treasury's tax-benefit microsimulation model
TPG	Total poverty gap
UB	Unemployment Benefit
UNICEF	United Nations Children's Fund (formerly, the United Nations International Children's Emergency Fund)
WFF	Working for Families
WL	Workless (adult or HH)

- 'Dependent children' are all those under 18 years, except for those 16 and 17 year olds who are in receipt of a benefit in their own right or who are employed for 30 hours or more a week.
- When 'child' is used without qualification, it means 'dependent child'.
- A household 'with children' always means a household with at least one dependent child – the household may or may not have adult children or other adults who are not the parents or caregivers.

About this report

This report provides information on the material wellbeing of New Zealanders as indicated by their household incomes over the period 1982 to 2004.

The income measure used is household after-tax cash income for the previous twelve months, adjusted for household size and composition. This is referred to as equivalised disposable household income and is taken as an indicator of a household's access to economic resources and of its (potential) living standards.

The major focus of the report is on trends in income-based indicators of inequality and hardship. These trends are set in the context of a description of the changing overall income distribution in the period. International comparisons are made where possible.

The report is about more than just the numbers. It also provides commentary, contextual information and technical notes to assist with a better understanding of the indicators and the trend figures they produce.

The data source is Statistics New Zealand's Household Economic Survey (HES)[1]. A sample of approximately 3000 households is achieved each survey. Interviews are conducted face to face.[2]

The report is published as part of the Ministry of Social Development's work programme on monitoring social and economic wellbeing.[3] It is designed as a consolidated and accessible resource for use by a wide range of individuals and groups (policy advisors, researchers, politicians, students, academics, community groups, commentators and citizens more generally), to inform policy development and public debate around poverty alleviation and redistribution policies.

Although there is some new material and new ways of presenting the information in this report there are no updated figures as such, as the latest data is still that from the 2004 HES. A key motivation has been to establish a robust and clearly articulated methodology that is in line with international best practice together with a set of standard tables that can simply be updated when the next survey dataset comes available. This report is the first issue of what is intended to be an ongoing series of income reports which will be updated in similar format as new HES datasets become available. The first update with new findings is expected in mid 2008 based on the data from the 2007 HES.

The scope of the report is relatively narrow. Its focus is on the economic wellbeing of New Zealanders as indicated by the equivalised disposable income of their households. Although it has a short section on the extent of re-distribution of households' market

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[1] Access to the HES data was provided by Statistics New Zealand under conditions designed to meet the confidentiality provisions of the Statistics Act 1975. The results presented in this analysis are the work of the Ministry of Social Development except where otherwise stated.

[2] See www.stats.govt.nz/datasets/work-income/household-economic-statistics.htm

[3] This report builds on the Ministry of Social Development's June 2005 release of updates of the income poverty and inequality indicators as used in *The 2005 Social Report*. It also shares many of the assumptions and conventions used in Mary Mowbray's monograph *Distributions and Disparity: New Zealand Household Incomes* published by the Ministry of Social Policy, Wellington, in 2001. However the primary focus of this report (poverty and inequality) is much narrower than Mowbray's, and it takes advantage of the international comparisons that are more readily available now than they were when *Distributions and Disparity* was being prepared. The report also shares many of the assumptions used by the New Zealand Poverty Measurement Project (Stephens et al, 1995; Waldegrave et al, 1996) and by Easton (1995a, 1995b, 1996) in their reporting on poverty trends in New Zealand.

income through taxation and government spending, it does not seek to give an account of how household income comes together from individual market incomes, social assistance paid to benefit units, and New Zealand Superannuation paid to older New Zealanders. Nor does the report seek to give a comprehensive explanation of the reported trends by drawing on the usual mix of labour market, demographic and macro-economic and geo-political factors, and on changes in tax and social assistance policy settings. Some limited context is given to point to macro-level changes that impact on household income, but the report is essentially descriptive.

The report has several Appendices which provide more detail on some of the concepts, definitions and assumptions used in the report, and how these impact on the reported levels and trends in inequality and poverty.

The report is designed as a reference document and does not lend itself to a Summary or Overview version. The Table of Contents and the List of Figures and Tables provide comprehensive navigational assistance.

Note that summary inequality figures are available on pp41-46, and trends in income poverty for the whole population and dependent children are on pp59-65.

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Copies of the report are available on the Ministry of Social Development's website at: www.msd.govt.nz

Excel sheets for all HES-based Figures and Tables in this report are being prepared and are scheduled to be available by 30 November 2007 on the Ministry's website.

Feedback on the report is welcomed, especially any suggestions for possible additional information or for the clarification or better presentation of what is already included.

For feedback and enquiries, contact Bryan Perry at: bryan.perry001@msd.govt.nz

Section A
Introduction

This introduction outlines the core concepts and assumptions used in the report. More detail is provided on selected issues in the Appendices as indicated. The matters covered in this section are:

- gross and disposable household income
- equivalised disposable household income and (potential) living standards
- equivalisation
- the income sharing unit and the unit of analysis for the presentation of results
- the bottom income decile: income not a reliable indicator of economic wellbeing
- housing costs
- data source: the Household Economic Survey (HES)
- convention for naming HES years
- HES years used in the report
- treatment of negative incomes
- adjusting for inflation
- reliability of results.

Gross and disposable household incomes

Gross household income is the total of all income before tax for the previous 12 months from all sources for all household members aged 15 years or over. Gross household income is calculated directly from the income information given by respondents in the survey.[4]

Disposable household income is the total of all after-tax income for all household members. To calculate disposable income Statistics New Zealand uses the Treasury's tax-benefit microsimulation model (Taxmod) to estimate tax liabilities for individuals and benefit units. The resulting personal disposable incomes are summed to give disposable household income. Disposable household income is sometimes referred to as net income or after-tax cash income.

This report provides only limited information on gross household income and (unequivalised) disposable household income.[5]

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[4] In general, income is regarded as all receipts which are received regularly or are of a recurring nature. The sources are wages and salaries, self-employed income (defined as the before-tax profit/loss of the business), social welfare benefits (including Family Support and the Accommodation Supplement and its pre-cursors), New Zealand Superannuation and war pensions, income from investment, and other regular income (such as maintenance and directors' fees). For a business which recorded a loss in its latest balance sheet or profit and loss account, the respondent concerned is allocated a negative amount for self-employment income, the amount being the full loss or, in the case of a partnership, the respondent's share of the loss.

[5] See Statistics New Zealand (forthcoming), *New Zealand Incomes: 1997-2006*, for information on individual incomes. The planned second part of this SNZ report will, among other things, provide information on gross and disposable household income. Give website link www.stats.govt.nz .

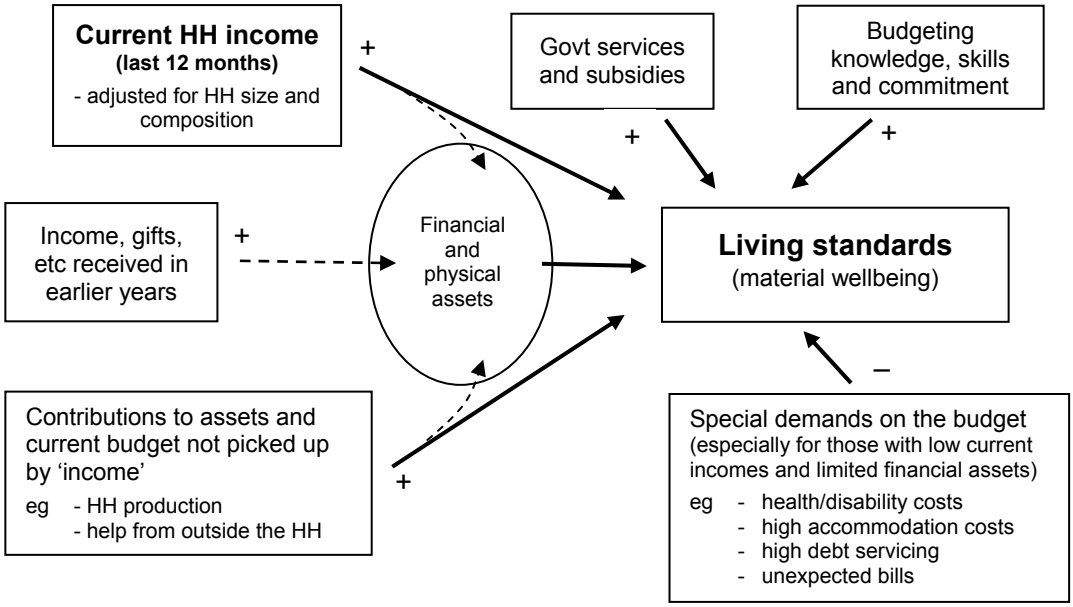
Equivalised disposable household income and (potential) living standards

The primary income measure used in the report is household disposable income for the twelve months prior to interview, adjusted for household size and composition. This is referred to as equivalised disposable household income and is the international standard income measure for reports of this type. The measure is usually taken as an indicator of a household's access to economic resources or of its 'consumption possibilities', and therefore as a proxy measure of a household's material wellbeing or living standards.

While current household income is a very significant contributor to household living standards and material wellbeing, other factors are important too. Some of these, like household size and composition, can be taken account of in the equivalising process, but there are others where a simple compensating adjustment between households is not feasible.

Figure A.1 shows at a high level the different factors that can impact on living standards. The level and quality of financial and physical assets, assistance from support networks and government services, and special demands on the household budget can all have significant positive or negative effects on living standards, over and above the effect of current income. As these factors fall differently across different households, households with the same or similar equivalised incomes can have different living standards. For these reasons, current household income, even when adjusted for household size and composition, can only be a rough indicator of actual household living standards. [6][7]

Figure A.1
Same current income – different living standards (material wellbeing)



[6] While current household income alone cannot be expected to be a fully reliable indicator of material wellbeing, Figure A.1 suggests that differences in income more broadly understood – in terms of past income and gifts (as represented by current wealth), current income, expected future income, HH production, and so on – are much more likely to explain differences in living standards. In this wider sense, it is almost all about income (cf the life-cycle and permanent-income hypotheses for understanding levels of current consumption as current income varies).

[7] The Ministry of Social Development's Living Standards research programme has developed a consumption-based measure of living standards based around what people (want to) have and do. It has published descriptive accounts of the distribution of living standards in New Zealand in 2000 and in 2004. See Jensen et al (2002), Krishnan et al (2002) and Jensen et al (2006) available at : http://www.msd.govt.nz/work-areas/social-research/living-standards/index.html

Another way of looking at the relationship between household income and living standards is to understand equivalised disposable income to be an indicator that allows comparisons of the *potential* living standards of different households – that is, comparison of the relative levels of consumption of goods and services that individuals could attain given the disposable income of the household in which they live, *all else being equal*. This recognises that equivalisation takes account of two major differences between households (size and composition), but not of other special demands on the budget, differences in wealth and assistance from outside the household, and so on. All else is in fact not equal.

Whether understood as a rough but readily available proxy for actual household living standards or as a measure of potential living standards (all else being equal), equivalised household disposable income is an important measure to understand and report on. For modern governments, direct income support is one of the most straightforward policy levers available for poverty alleviation. Changes over time in the overall distribution of household income and in the relative position of subgroups can give insight into changes in the social and economic fabric of the country and inform policy evaluation and development. Income information is regularly collected, easily manipulable and relatively easy to understand.[8]

Equivalisation: comparing incomes across different household and family types

Equivalisation reflects the two common sense notions that:

- a larger household needs more income than a smaller household for the two households to have similar standards of living (all else being equal), and
- there are economies of scale as household size increases.

Most sets of equivalence ratios also assume that children cost less than adults.

Equivalising is a means of standardising household incomes in terms of household size and composition so that the relative material wellbeing of households of different sizes and compositions can be more sensibly compared. The adjustment also makes comparisons over time more realistic because it takes into account the changes over time in the composition and average size of households.

While considerable research has been undertaken to try to estimate appropriate values for equivalence scales, no universally accepted 'correct' set of equivalence ratios has emerged, even when household size and composition are the only factors being considered.[9]

The primary equivalence scale used in the analysis in this paper, the 1988 Revised Jensen Scale, is a mid-range scale. It is very close to what has come to be known as 'the modified OECD scale' which is now used by Eurostat, Australia, the United Kingdom and others. Different equivalence scales are used for the international comparison sections,

[8] See Section J for a comparison and synthesis of poverty and hardship estimates using the incomes-based measures of this report and the ELSI-based analysis from the Ministry's living standards research.

[9] Ideally, equivalence scales would also take into account other factors such as the age of children, the costs of being employed, the extra costs of disability, the differing costs faced by people in different geographical locations, the different ratios needed for households of the same type but of different incomes, and so on. Such considerations further complicate an already fraught estimation process and the common practice is to settle for simpler scales as a rough-and-ready but better-than-nothing approximation.

in line with the conventions of the sources. Further discussion of the effect of the choice of equivalence scale is provided in **Appendix 3**.

This paper uses the single person household as the reference household – ie a single person unit has an equivalence scale value of 1.0. A couple household (2,0) is rated at 1.54, meaning that such a household is considered to have 1.54 equivalent adults. A two adult, two child household is rated as 2.17. This means that this household type (2,2) is rated as having 2.17 equivalent adults: it requires 2.17 times the income of a single person household to have the same purchasing power or to achieve a comparable material wellbeing, all else being equal. [10]

Table A.1 provides a look-up chart to convert equivalised dollars (dollars per equivalent adult) to ordinary dollars and vice versa for selected households.

The first row of figures identifies the family or household type: (1,2) is a one adult, two child household, and so on. The second row gives the values of the equivalence ratios used. The body of the table indicates, for example, that a (2,2) household needs around $28,000 to have the same purchasing power as a (1,1) household with an income of around $18,000. Each has an equivalised income of $13,000 (or, to put it another way, each household has an income of $13,000 per equivalent adult).

Table A.1
Conversion of equivalised dollars to ordinary dollars for low-to-middle-income households

Equiv income	Income for families and households of various types in 'ordinary dollars'									
	(1,0)	**(1,1)**	**(1,2)**	**(1,3)**	**(2,0)**	**(2,1)**	**(2,2)**	**(2,3)**	**(2,4)**	**(3,0)**
	1.00	1.40	1.75	2.06	1.54	1.86	2.17	2.43	2.69	1.98
$10,000	10,000	14,000	17,500	20,600	15,400	18,600	21,700	24,300	26,900	19,800
$11,000	11,000	15,400	19,300	22,700	16,900	20,500	23,900	26,730	29,600	21,800
$12,000	12,000	16,800	21,000	24,700	18,500	22,300	26,000	29,160	32,300	23,800
$13,000	13,000	18,200	22,800	26,800	20,000	24,200	28,200	31,600	35,000	25,800
$14,000	14,000	19,600	24,500	28,800	21,600	26,000	30,400	34,000	37,700	27,700
$15,000	15,000	21,000	26,300	30,900	23,100	27,900	32,600	36,500	40,400	29,700
$20,000	20,000	28,000	35,000	41,200	30,800	37,200	43,400	48,600	53,800	39,600
$25,000	25,000	35,000	43,800	51,500	38,500	46,500	54,300	60,800	67,300	49,500
$30,000	30,000	42,000	52,500	61,800	46,200	55,800	65,100	72,900	80,700	59,400

Note: This table uses the 1988 Revised Jensen equivalence scale, as does the rest of the report, except where explicitly mentioned otherwise.

[10] Other commonly used reference HHs are the couple, the couple with one child and the couple with two children. The choice of reference HH affects the numerical value of equivalised income but makes no difference to any of the distributional, inequality and hardship analysis that follows.

Income sharing unit and the unit of analysis for the presentation of results

The household is used as the income sharing unit (or unit of income aggregation). All individuals in the household are assumed to benefit reasonably equally from the combined income of the household and to share a similar standard of living. Clearly this is not always the case but it is "defensible as [an approximation] to a very complicated reality of intra- and inter-household patterns of sharing" (Bradbury, 2003:25).

The use of the household as the income sharing unit is in line with international standard practice.[11]

The unit of analysis for reporting purposes is the individual. The household's equivalised disposable income is attributed to each household member as an indicator of the individual's (potential) living standards and is used for ranking purposes.[12]

For subgroup analysis individuals are grouped by their own characteristics (eg age), or by the characteristics of their household or family type (eg two parent, 'workless', and so on). In all cases the individual is ranked or classified according to the income of their household as this gives the best income-based indication of their economic wellbeing, in line with the central purpose of this report.

A key subgroup in this report is dependent children. Dependent children are all those under 18 years, except for those 16 and 17 year olds who are in receipt of a benefit in their own right or who are employed for 30 hours or more a week.

For international comparisons, children are taken as all those under 18 years. The use of '0 to17 years' rather than 'dependent children' makes virtually no difference to the reported results.

<u>The economic family unit (EFU)</u>

An alternative income sharing unit that has sometimes been used is the benefit eligibility unit, often referred to in New Zealand as the economic family unit or EFU. The EFU approach allows for only three ways to group individuals when it comes to income sharing: couple only, couple with dependent children, and sole parent with dependent children. All other individuals are treated as if they are 'on their own' even when they share (to varying degrees) in the general resources of a larger household. The Ministry of Social Development has used the EFU approach in incomes analysis in recent years but is now reverting to the household approach as fewer anomalies are created by the this approach, and to come into line with international practice.

See **Appendix 2** for further discussion on the choice of income sharing unit.

[11] Expert [Canberra] Group on Household Income Statistics (2001).

[12] This is sometimes referred to as a person-weighted approach, in contrast to a household-weighted approach. The latter reports the proportion of households below various thresholds, income inequality across households, and so on. The person-weighted approach is the international standard for the sort of analysis reported in this paper.

The bottom income decile: income not a reliable indicator of material wellbeing

While household income is far from perfect as a measure of material wellbeing it is generally a useful enough indicator. There are however some households for whom it would clearly be very misleading to take their incomes as even a rough and ready indicator of their material living standards. This assessment is based on comparisons with information beyond the incomes reported in the survey: some households have implausibly low incomes, well below the minimum social support levels; some have reported expenditures well above their reported incomes.

Some of these households will be declaring income from self-employment which can legitimately be much lower than reported expenditure – the declared income may even be negative. Others will have accurately reported their incomes but will have had access to loans, gifts or 'savings' in one form or other which have been used for purchasing goods and services. Others will have intentionally or unintentionally under-reported their incomes.

Households with implausibly low incomes *per se* are of course found only in the bottom decile (bottom 10th of the income distribution). The reported incomes of many at the bottom are less than the incomes provided by government cash benefits or New Zealand Superannuation. This points to mis-reporting or data entry errors.

Those reporting expenditure much higher than reported income are found in most parts of the income distribution but the bulk of them are found in the bottom decile. For example, of all those in households reporting expenditure which is more than three times their income, around 75% to 80% are in the bottom income decile in any survey year.

This noise in the lower end of the income distribution has only a limited impact on most of the indicators used in this report. For example, it does not impact greatly on the medians as the bulk of households in question would remain below the median even if their expenditures were taken as better estimates of their actual income than what was reported as such. Nor does it impact significantly on trends over time for either poverty or inequality indicators.

In general the impact is significant where the indicator is highly dependent on the incomes of those in the bottom decile or a little above it. This means, for example, that point-in-time poverty levels are noticeably affected when poverty lines are set below 50% of the median. In addition, the level and trend of the P10 (10th percentile) line and measures of poverty depth (see Section E) are also significantly affected.

As appropriate, the report makes comment on the likely impact of the noise at the bottom end of the income distribution in the text associated with affected indicators.

Appendix 7 provides a fuller discussion of the issue.

Housing costs

The report provides information based on household income both before deducting housing costs (BHC) and after deducting housing costs (AHC).[13]

Housing costs include all mortgage outgoings (principal and interest) together with rent and rates for all household members.[14] Repairs and maintenance and dwelling insurance are not included. Any housing-related cash assistance from the state (eg Accommodation Supplement) is included in household income. These housing costs make up on average around a quarter of the budget for working age low-income households. For many with low incomes, housing costs make up much more than a quarter of the budget.

For reporting on overall trends in household income and on income inequality, there is value in seeing the similarities and differences between the two measures (BHC and AHC) and in understanding the differing stories they tell. For reporting on trends in income poverty over time and for comparing hardship across subgroups of the population, the report recommends the use of AHC measures although both BHC and AHC are reported.

The use of BHC measures is generally taken as the self-evident starting point. They are important for assessing the adequacy of market and social assistance incomes for delivering a minimum acceptable standard of living. Their use also ensures that the material wellbeing of those on low incomes who choose to live where accommodation is less expensive (eg some rural areas) or who live in 'cheap' substandard accommodation is not left overstated (relatively) as the use of an AHC approach on its own can do.

The rationale for the report's position that AHC analysis should also be reported, and that the AHC approach is preferable for subgroup comparisons in New Zealand is that:

- First, variations in housing costs do not necessarily correspond to similar variations in housing quality. This is most significant when comparing the material wellbeing of age groups. Many older individuals are in households that have good accommodation and relatively low housing costs (eg those living in mortgage-free homes). Many in an earlier part of the life cycle have a similar standard of accommodation but relatively high accommodation costs. Ideally, the value of imputed rent for homeowners would be added to income to even up the comparisons (ie the BHC approach has limitations in this regard), but the practical difficulties are considerable. As an approximation for the purposes of comparing material wellbeing, the AHC approach deducts housing costs from after-tax cash income for all households.
- Once a household is committed to a particular residence, outgoings on housing costs cannot easily be adjusted or put off in 'tight times' as they can for other expenses like entertainment and recreation, and even to some degree for basics like food and clothing. When the primary focus is on trends in income poverty and hardship, it is important to understand trends in 'residual income', taking housing costs as a given fixed cost in effect. Housing costs represent a very significant proportion of the total spending for many low-income households.

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[13] BHC income is the same as disposable or after-tax cash income. AHC income is sometimes referred to as 'income adjusted for housing costs', 'disposable income net-of-housing-costs' or 'residual income'.

[14] There is an argument for excluding repayment of mortgage principal from housing costs on the grounds that it is simply a form of near-compulsory saving. This report includes repayment of principal in housing costs on the grounds that for most mortgages there is little scope for adjusting principal repayments to help cope with 'tight times'. it is in effect income not available to households in the short to medium term for other uses.

- Third, a unique characteristic of the New Zealand BHC income distribution is the very large 'pensioner spike' at around the value of New Zealand Superannuation. This occurs close to a 60% of median poverty line (BHC) and can lead to large variations in reported poverty rates for the 65+ group over time, leaving the misleading impression that there are significant changes in material wellbeing occurring for this group. In addition, the same issue can lead to similarly misleading comparisons with the relative wellbeing of other age groups. An AHC approach avoids these issues and is more suitable as the primary measure (for New Zealand at least). This is further discussed in Section I.

Further discussion on the relative merits of the BHC and AHC approaches can be found in **Appendix 4.**

Data source: the Household Economic Survey (HES)

The report draws on data from Statistics New Zealand's Household Economic Survey (HES). A sample of approximately 3000 households is achieved each survey. Interviews are conducted face to face. Contact with each participating household extends for a period of just over two weeks. During that time, each household member aged 15 years or over keeps an expenditure diary for 14 consecutive days, recalls major purchases made in the previous 12 months, and provides income and employment data. The income information is also for the 12 months prior to interview.

The target population for the HES is New Zealand resident private households living in permanent dwellings. This means, for example, that those in institutions and those in non-permanent dwellings are not included.

The HES was an annual survey from 1982 to 1998. Since then it has been run every three years, with the latest results being available for the 2003-2004 June year. The next survey is for the 2006-2007 year, with incomes data available annually thereafter through the new HES Incomes Survey.

It is expected that future updates of this report will also draw on Statistics New Zealand's longitudinal Survey of Families, Income and Employment (SoFIE) to report on income dynamics and poverty persistence.[15]

Convention for naming HES years

The report adopts a common short-hand convention for describing HES years. For example, 'the 2004 HES' is short for 'the 2003-2004 HES'. The survey is for the year ending 30 June 2004 with its midpoint in December 2003. For the 1998 HES and earlier ones the survey period was for March years. The 1998 HES therefore has a midpoint of September 1997. All the data is synchronised to the middle of the survey year.

The income values, inequality figures, poverty rates, and so on for specified HES years are best interpreted as being for the middle of the respective survey years unless noted otherwise.[16]

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[15] Disposable income is not yet available for SoFIE. The Ministry of Social Development is developing BeTSiM, a new micro-simulation tax-benefit model based on SoFIE. One of the planned capabilities of the model is the production of disposable income estimates for respondents.

[16] Care is required in establishing which survey year will pick up the implications of policy changes when changes occur during a survey year.

HES years used in the report

The tables and graphs report for each second HES year from 1982 to 1998 and every three years after that. Key changes in the income distribution occurred in the years from 1988 and again from 1994 so the loss of information that arises from using every second year only does not impact on the overall trends reported, as these key years are included in the reporting.

The points on the graphs are all joined by straight or smoothed lines. This is done for presentational purposes only to give the general trends, and should not be taken to mean that the points in the intervening years would all lie on the interpolated lines.

Treatment of negative incomes

In each HES survey there are a few records showing negative incomes. For this report these negative incomes are re-assigned a value of zero before analysis is undertaken. This is done to reasonably approximate the treatment of negatives asked for by the OECD in the data sent to them by statistical agencies such as Statistics New Zealand and it therefore assists with international comparisons. This treatment of negatives has no effect on medians, no impact on reported trends over time for the approaches used in this report, nor on poverty rates at any point in time, nor on the composition of the poor. It has a very small impact on means and income shares for quintiles.

Note that negatives are deleted for calculating the Gini coefficient to maintain consistency with the approach taken by Statistics New Zealand. This adjustment has no impact on trends and only a very minor impact on the figure for a particular survey.

Adjusting for inflation

Household incomes and low-income thresholds are adjusted for inflation at various places in the report. Household incomes are converted to 2004 dollars for reporting on income trends in real terms. For the reporting on trends in income poverty based on a 'fixed line' approach, thresholds are based on proportions of the 1998 median and are held constant in real terms over other years.[17]

The adjustments for inflation are carried out using CPI full-year averages for a March year up to and including the 1998 survey and a June year from 2001. For BHC incomes Statistics New Zealand's CPYA.SE9AM and CPYA.SE9AJ series are used for the respective periods. AHC incomes and thresholds from 1989 are adjusted using the index from the 'All Groups less Housing' series (CPIQ.SE9NS1010) for the survey's midpoint quarter. For 1982 to 1988 the AHC adjustments are based on the author's extrapolation of the series. The reported trends in AHC incomes and the size of low-income populations are not sensitive to different assumptions within a plausible range for the index in the 1982 to 1988 period. See **Appendix 6** for the indices used.

[17] There is nothing particularly significant about the use of the 1998 HES as the reference or base year. It was simply a convenient base for the incomes analysis carried out by the Ministry of Social Policy in 2000 to 2002 and the convention has been followed since. See pp 53f for further discussion on the choice of 'base year'.

Ethnicity

Ethnicity of individuals aged 15 and over is as reported by the individual. Children under 15 are attributed with the ethnicity of the survey respondent. No analysis is carried out based on household or family ethnicity as ethnicity is a characteristic of individuals.

If a respondent reports more than one ethnicity, the ethnicity attributed is determined according to a hierarchical classification of Māori, Pacific Island, Other and then European/Pākehā.

Household and family types

The report uses the following household types for subgroup analysis.

Household type	Definition
One person HH, 65+	one person aged 65+
Couple HH, 65+	at least one partner is 65+
One person HH, under 65	one person aged under 65
Couple HH, under 65	both partners are under 65
SP with children	SP with children, at least one of whom is dependent
2P with children	2P with children, at least one of whom is dependent
Other family HHs with children	Family HHs (other than SP or 2P HHs) where there is at least one dependent child
Other family HHs, adults only	Family HHs (other than couples) where there are no dependent children
Non-family HHs	Unrelated individuals

For family types, the report uses the 'economic family unit' (EFU). There are four types of EFU:

- one parent with dependent children
- two parents with dependent children
- couple only
- everyone else (ie unattached individuals who are not dependent children).

In each case the unit may be living in a separate household or with others in a wider household:

Note that the household is always used as the income sharing unit. Individuals are attributed with their household's equivalised income, then assigned to a particular household or family type, carrying their household's equivalised income with them as an indicator of economic wellbeing.

Reliability of results

As the figures in this report are estimates taken from a sample survey, they are subject to variation as a result of both sampling error and bias due to non-sampling error, especially non-response. In addition, there are assumptions made in the use of equivalised income as an indicator of (potential) living standards and in constructing the measures of inequality and hardship. All these factors raise the question of the reliability of the results.

Sampling error

The sampling error is larger the greater is the degree of disaggregation at which results are presented. Special care is therefore needed when interpreting results applying to smaller subgroups. Care is also needed when comparing estimates from one survey to the next as both estimates are subject to sampling error.

Non-response

The reliability of the results reported are also affected by any bias due to differential non-response from households chosen for interview. To go some way to correct for this, when weights are being assigned to households to produce population estimates, those households that are under-represented in the sample are given larger weights to compensate. The weights are chosen so that grossed-up population estimates accord with key control variables such as the age, gender and household type distributions from the latest census or census-based projections. However, there is no guarantee that such weighting procedures will deliver accurate population estimates for all variables of interest. One area where this is an issue affecting reliability of results using the HES is in the estimates of the number of beneficiaries. In 2001, for example, the HES underestimated beneficiary numbers by around one-third.[18] A related example is that in 2001 and 2004 the total value of the Accommodation Supplement (AS) reported in the HES was around half of that recorded in the Ministry of Social Development's administrative data. This may not necessarily mean that half the AS income is missed, as some of the 'missing' amount may be counted in the reported benefit income. Nevertheless it is such a large difference that some doubt must remain.

Income as an indicator of material wellbeing

There is a general question as to how well income performs as an indicator of access to resources or as a proxy for living standards, but the most pressing issue, as noted above (p8f), is that there are particular problems in the bottom decile where the incomes of many households cannot be taken even as a rough and ready indication of resources. Where the noise in the bottom decile significantly impacts on reported results, the associated text notes and describes the impact. This issue is further discussed in **Appendix 7**.

Avoiding unwarranted impressions of precision

The use of too many significant figures or decimal places in reporting results can imply a spurious precision that is inconsistent with the considerations noted above. This applies particularly to poverty rates, and especially for figures relating to subgroups of the whole

[18] See Creedy and Tuckwell (2003) for an account of a HES re-weighting exercise carried out by the New Zealand Treasury for tax-benefit microsimulation modelling purposes using TAXMOD, and Perry (2004) for a practical application of TAXMOD in poverty analysis using both the Statistics New Zealand and Treasury (TAXMOD) weights.

population. Poverty rates and poverty structure are therefore generally reported to the nearest whole number rather than to one decimal place as is common elsewhere.[19]

Longer-term trends over several surveys and significant differences between subgroups within a year can be counted as providing robust and reliable information. Smaller changes between surveys and small differences between subgroups in the one survey year should not be used to support definitive conclusions about change or differences.

Summary of key measures used for reporting on income inequality and poverty

The table below gives a high-level outline of the measures used in the report for the inequality and poverty analysis. Issues around each decision point are discussed in the main sections that follow and in the appendices.

Decision point	Option used in this report
income sharing unit	household (HH)
income concept	equivalised disposable HH income (ie after-tax cash income, adjusted for HH size and composition) - before deducting housing costs (BHC) - after deducting housing costs (AHC)
equivalence scale	revised Jensen 1988
inequality measures	percentile ratios (90/10 and 80/20) Gini coefficient
types of low-income thresholds or 'poverty lines'	'moving line' thresholds – set relative to the median for the survey year (REL) 'fixed line' thresholds – set in a base year (1998) and kept at a constant value in real terms (CV)
setting of low-income thresholds or 'poverty lines'	REL thresholds set at 50% and 60% of the median HH income (BHC) CV thresholds set at 50% and 60% of the 1998 median HH income (BHC), and adjusted forward and back by the CPI AHC thresholds are set at 25% less than the corresponding BHC threshold, as an allowance for average housing costs
primary measure for income poverty	AHC 'fixed line' (60%) – the rationale for this is given in the body of the report

[19] One potential disadvantage of rounding to the nearest whole number is that differences between two relatively close results can look quite different in the more and less heavily rounded formats. For example, on a rounded basis, the difference between 45.49 and 42.51 would be '2' (45-43), whereas the difference between 45.51 and 42.49 would be '4' (46-42). In the rare cases where this is an issue the associated text draws attention to it.

Section B
Household incomes in 2004

This section provides general information on the distribution of household income using the 2004 HES. The following are reported:

- means and medians for gross, disposable and equivalised disposable income
- medians for different household types
- graphs of the income distribution for the whole population
- a table to assist households to identify where they fall in the distribution
- distribution of individuals across household income quintiles by various household and individual characteristics
- income shares for income deciles
- the extent of re-distribution of market income through taxes and cash benefits.

Means and medians

Table B.1 reports median and mean household incomes on gross, disposable (after-tax), and equivalised disposable bases using the 2004 HES, and the changes in real terms from the 2001 HES.

Table B.1
Gross, disposable and equivalised disposable household incomes: annual medians and means (HES 2004)

	Median		Mean	
	2004	**Real change from 2001**	**2004**	**Real change from 2001**
Gross	$56,300	+7%	$68,900	+6%
Disposable (BHC)	$45,100	+4%	$53,300	+5%
Disposable (AHC)	$36,000	+6%	$43,900	+5%
Equivalised disposable (BHC)	**$23,000**	**+7%**	**$27,000**	**+4%**
Equivalised disposable (AHC)	**$18,500**	**+8%**	**$22,100**	**+3%**

Note: The equivalised income rows in the table use the one person household as the reference. The unit is 'dollars per equivalent adult'.

Medians are calculated by assigning individuals their household's income, ranking the individuals and finding the middle one. This person-weighted approach is different from the household-weighted approach which simply ranks households by their income and finds the middle household. The person-weighted approach is the international standard for the sort of analysis carried out for this report.

Mean incomes are higher than median incomes because of the skew of the income distribution towards the lower end. The relatively few households with incomes at the very upper ranges of the income distribution have a disproportionately large upward impact on the mean compared with their impact on the median, and therefore pull the mean up above the median. The number of very high income households in a particular survey can also lead to the mean being less stable than the median.

Medians for households of different types

The overall median BHC disposable income in 2004 was $45,100 (ordinary dollars). In equivalised terms this is 23,000 dollars per equivalent adult.

Different household types have different median incomes, some above and some below the overall median. For example, the median household income for households comprising a couple plus one dependent child is $55,600 which is $29,900 in equivalised terms (ie 29,900 dollars per equivalent adult).[20]

Table B.2 shows the median disposable incomes of different household types (BHC) using both ordinary dollars and dollars per equivalent adult ('equivalised dollars').

Table B.3 shows the same information for AHC incomes.

Tables B.2 and B.3 show that the median equivalised household incomes for older one-person and couple households, sole-parent households, larger two-parent households and for other family households with children are all below the overall median. This means that these households are all more concentrated in the lower half of the equivalised income distribution.

On the other hand, 'working age' couple-only households, smaller two parent with dependent children households and family households with no dependent children have equivalised medians above the overall median and are therefore more concentrated in the upper half of the equivalised income distribution.

[20] Recall that this report uses the one person household as the reference for the equivalising process. The unit is dollars per equivalent adult. To convert ordinary disposable income to equivalised incomes for a particular household type, the ordinary incomes need to be divided by the appropriate equivalence ratio listed in Table A.1 in the Introduction. For example for a (2,1) household, divide by 1.86.

Table B.2
Median disposable income (BHC) for different household types (HES 2004) in ordinary and equivalised dollars

HH type	Median disposable income for the HH type (ordinary $)	Median disposable income for the HH type ($ per equivalent adult)
One person, 65+	14,100	14,100
Couple, 65+	24,400	15,800
One person, under 65	23,600	23,600
Couple, under 65	52,700	34,300
SP, 1 child	20,600	14,100
SP, 2 children	23,100	13,100
SP, 3 or more children	25,700	11,900
2P, 1 child	55,600	27,400
2P, 2 children	53,400	24,700
2P, 3 or more children	44,300	17,800
Other family HHs with children	52,700	20,650
Family HHs – no children	59,700	29,600
Whole population	**45,100**	**23,000**

Table B.3
Median disposable income (AHC) for different household types (HES 2004) in ordinary and equivalised dollars

HH type	Median disposable income for the HH type (ordinary $)	Median disposable income for the HH type ($ per equivalent adult)
One person, 65+	12,600	12,600
Couple, 65+	22,600	14,700
One person, under 65	17,400	17,400
Couple, under 65	44,000	28,600
SP, 1 child	14,700	10,500
SP, 2 children	15,300	8,700
SP, 3 or more children	17,600	8,500
2P, 1 child	43,200	23,200
2P, 2 children	42,700	19,700
2P, 3 or more children	36,100	15,000
Other family HHs with children	45,700	18,100
Family HHs – no children	52,400	25,100
Whole population	**36,000**	**18,500**

Income distribution for the whole population, HES 2004

Figures B.1 and B.2 (next page) show the general shape of the income distribution for the whole population, with the 65+ age-group distinguished from the rest.

The graphs also show the two main low-income thresholds ('poverty lines') that are used later in the report: 50% and 60% of the contemporary median for BHC incomes, and these less 25% for AHC incomes.

Apart from the skew to the left with a long right-hand tail, the distinctive feature of the distribution is the strong bunching of individuals from households with BHC incomes in the $12,000 to $15,000 range (from just over 50% to around 65% of the median).

This bunching reflects the fact that levels of social assistance generally fall within the range noted. The strong spike within the bunching arises because of the high concentration of incomes for those aged 65 and over in the area. This is a distinctive feature of the New Zealand income distribution.[21] It arises because:

- New Zealand has a universal pension for those aged 65 and over that is neither income nor asset tested (New Zealand Superannuation (NZS))
- there is no mandatory second tier employment-related component
- around 60% of those aged 65+ report incomes of less than $20pw from sources other than NZS, and
- the value of NZS was 56% of the BHC median in 2004 (and between 56% and 67% from 1988-2004).

This bunching of incomes in the 50% to 65% range has implications for the assessment of poverty rates when the thresholds or poverty lines are within this range, especially for the 65+. When using thresholds set as a proportion of the current median, a small shift in the median from one year to the next can lead to a very large change in reported income poverty for the 65+ even though there has been little or no change in their income or living standards.

For the AHC distribution, the bunching is broader though still significant. The most important difference for the central purposes of this paper is that the 65+ spike is above both the thresholds used for AHC incomes. This happens because of the high proportion of older New Zealanders with mortgage-free homes and very low housing costs. Small shifts in the median or the threshold do not therefore have the same disproportionate and misleading effects on (trends in) poverty rates as they do when using BHC incomes. In addition, differing housing costs among some lower-income 65+ households spread their AHC incomes over a wider range than their BHC incomes. These two factors combined mean that using AHC incomes is more useful (at least) for monitoring trends for older New Zealanders and comparisons with the rest of the population.

[21] There is often a bunching in the income distributions in other countries but they tend not to have the spike that New Zealand does because of the different retirement income regimes. For example, see Figure 3.3 in Brewer et al (2004) for the UK.

Figure B.1
BHC household income distribution for all individuals: HES 2004

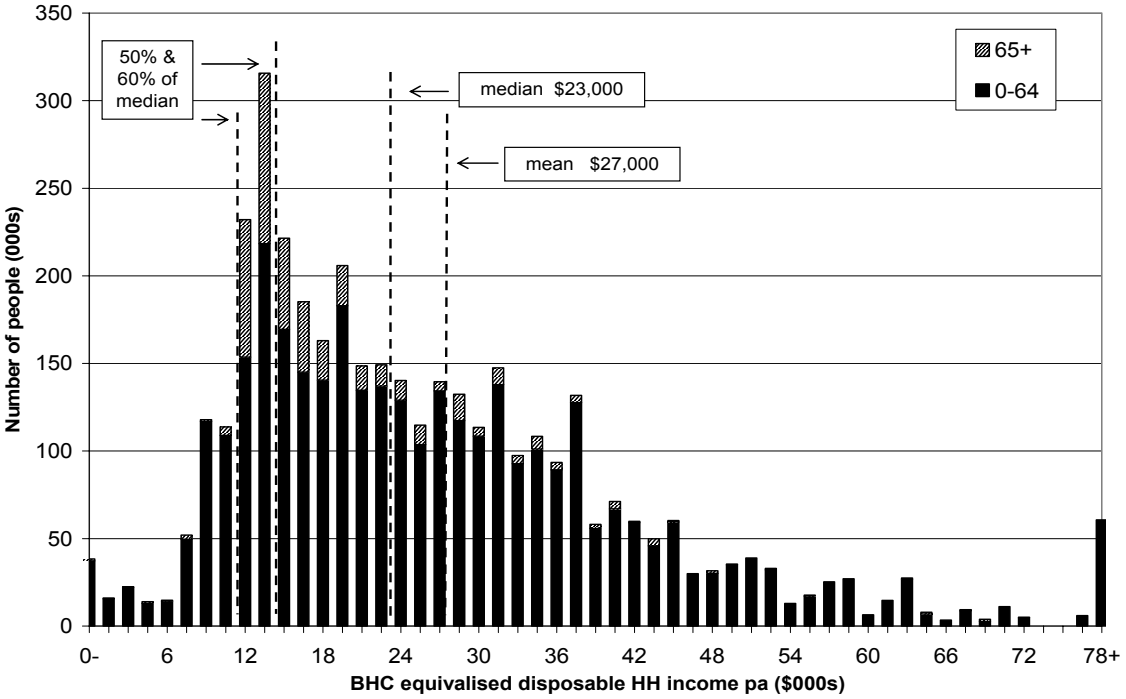
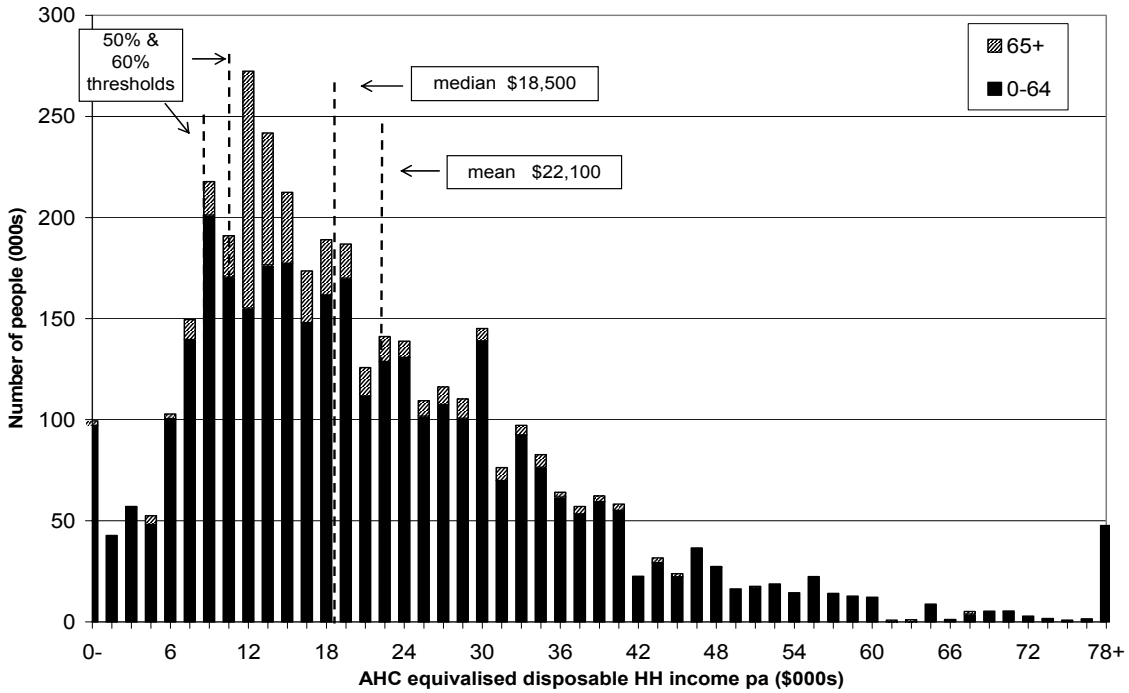


Figure B.2
AHC household income distribution for all individuals: HES 2004



Notes: 1 The purpose of the above graphs is to give a general idea of the shape of the distribution and the number of people in different income bands, and to draw attention to the pensioner spike in the BHC distribution. For both graphs, households are grouped by incomes in multiples of $1500 pa ($30 pw). A more refined analysis which smoothes the distribution is used in the next section.

2 The AHC low-income thresholds ('poverty lines') are set at the 50% and 60% BHC thresholds, less 25% to allow for housing costs. See Appendix 5.

Where does your household fit?

Many people do not have an accurate idea as to where they (and their household) fit in the income distribution.[22] **Table B.4** gives the annual (unequivalised) disposable income levels (BHC) of some different household types in each (equivalised) income decile. From this table, many people will be able to locate where they and their households fit on the income distribution. To calculate decile ranges for other household types, the equivalence ratios listed in Table A.1 can be used.[23]

To use this table, select the column heading that best describes your household or family situation. Go down the column until you find your household's disposable income range (ie annual after-tax income, including all social assistance from the state). The row gives the equivalised income decile for your household income. For example, a household comprising a couple with two children with a disposable income of $51,000 pa is in decile 6.[24]

Table B.4
Where does your household fit in the overall household income distribution (BHC)?
HES 2004

Equivalised income decile	One person, no children (reference HH)	Sole parent, one child	Couple or 2 adults sharing	Couple, one child	Couple, two children
Bottom decile	< $11,300	< $15,900	< $17,400	< $21,000	< $24,600
Decile 2	11,300 - 13,600	15,900 - 19,100	17,400 - 21,000	21,000 – 25,300	24,600 - 29,500
Decile 3	13,600 - 16,000	19,100 - 22,400	21,000 - 24,600	25,300 – 29,800	29,500 - 34,700
Decile 4	16,000 - 19,100	22,400 - 26,700	24,600 - 29,400	29,800 – 35,500	34,700 - 41,400
Decile 5	19,100 - 23,000	26,700 - 32,200	29,400 - 35,400	35,500 – 42,800	41,400 - 49,900
Decile 6	23,000 - 27,500	32,200 - 38,500	35,400 - 42,300	42,800 – 51,100	49,900 - 59,600
Decile 7	27,500 - 32,000	38,500 - 44,700	42,300 - 49,200	51,100 – 59,500	59,600 - 69,300
Decile 8	32,000 - 37,400	44,700 - 52,300	49,200 - 57,500	59,500 – 69,000	69,300 - 81,100
Decile 9	37,400 - 47,300	52,300 - 66,200	57,500 - 72,800	69,000 – 88,000	81,100 - 103,000
Top decile	> $47,300	> $66,200	> $72,800	> $88,000	> $103,000

[22] For example, a survey conducted in 1999 by the Social Policy Research Centre (University of New South Wales, Sydney) showed that the vast majority of Australians thought that their household incomes placed them in the middle of the distribution. For example, around half thought they were in either the 4th or 5th deciles and virtually none thought they were in the top quintile (Saunders, 1999). A similar perception is likely to hold in New Zealand too.

[23] Decile locations for households not included in Table B.4 can be calculated using the equivalence scale information in Table A.1. For example, a three adult household has an equivalence ratio of 1.98 (see Table A.1). To be in the top decile a household of this type would need an after-tax annual income of more than $94,000 (1.98 x 47,300).

[24] The calculations in the table assume that any children are aged around 8 to 10 years, but the figures are close enough if the children are younger or older.

Distribution of individuals across income quintiles by various household and individual characteristics

When the population is ranked on their household incomes and divided into five equal groups, each group is called a quintile. A quintile contains 20% of the population.

Table B.5 shows the position of groups of individuals in the income distribution (BHC) according to various household and individual characteristics. The proportions sum to 100% across the quintiles.

The numbers in each quintile can be obtained by using the information in the right-hand column which gives the number of individuals in the various subgroups. For example, in the lowest quintile (Q1), there are around 136,000 individuals in sole-parent households where there are dependent children (57% of 238,000), and 255,000 in two-parent households with dependent children (17% of 1,505,000).

Table B.6 shows the composition of each income quintile (BHC) according to various household and individual characteristics. The proportions sum to 100% down the columns for each set of characteristics.

Tables B.7 and B.8 repeat the analysis for AHC incomes.

Table B.5
Distribution of individuals across income quintiles (BHC)
by various household and individual characteristics (%)

(sum to 100% across rows)

HES 2004	Equivalised disposable household income					All individuals (000s)
	Q1	Q2	Q3	Q4	Q5	
Age						
0-17	25	24	21	17	14	1060
18-24	17	16	23	24	21	384
25-44	16	17	21	23	24	1152
45-64	15	14	19	23	29	913
65+	33	36	15	11	5	448
All	20	20	20	20	20	3957
Household type						
One person 65+	44	38	8	7	3	145
Couple 65+	31	36	17	10	6	289
One person under 65	24	14	20	21	21	202
Couple under 65	11	8	15	26	41	531
SP with dependent children	57	31	8	3	1	238
2P with dependent children	17	19	24	21	19	1505
Other family HHs with dependent children	14	30	25	19	12	412
Family HHs with no dependent children	12	12	21	30	26	487
Non-family HHs	20	13	21	17	29	149
All	20	20	20	20	20	3957
Ethnicity						
European/Pākehā	16	18	20	21	25	2756
NZ Māori	21	30	18	21	10	556
Pacific	36	22	20	19	3	256
Other	34	18	24	11	13	389
All	20	20	20	20	20	3957
Children by household type						
Children in SP HHs	59	30	7	2	1	148
Children in 2P HHs	19	20	23	20	18	723
Children in other family HHs	17	33	24	16	11	159
All children	25	23	21	17	14	1030

Table B.6
Composition of income quintiles (BHC)
by various household and individual characteristics (%)

(sum to 100% down columns)

HES 2004	Equivalised disposable household income					Overall composition
	Q1	Q2	Q3	Q4	Q5	
Age						
0-17	33	32	28	22	19	27
18-24	8	8	11	12	10	10
25-44	23	24	30	33	35	29
45-64	17	16	22	27	33	23
65+	19	21	8	6	3	11
All	100	100	100	100	100	100
Household type						
One person 65+	8	7	1	1	1	4
Couple 65+	12	13	6	4	2	7
One person under 65	6	4	5	5	5	5
Couple under 65	8	5	10	17	27	13
SP with dependent children	17	9	2	1	<1	6
2P with dependent children	31	37	46	40	36	38
Other family HHs with dependent children	7	15	13	10	6	10
Family HHs with no dependent children	7	8	13	18	16	12
Non-family HHs	4	2	4	3	6	4
All	100	100	100	100	100	100
Ethnicity						
European/Pākehā	57	63	69	73	85	70
NZ Māori	14	21	13	15	7	14
Pacific	12	7	7	6	1	6
Other	17	9	12	6	6	10
All	100	100	100	100	100	100
Children by household type						
Children in SP HHs	35	18	5	2	1	14
Children in 2P HHs	55	60	77	84	87	70
Children in other family HHs	10	22	18	15	12	15
All children	100	100	100	100	100	100

Table B.7
Distribution of individuals across income quintiles (AHC)
by various household and individual characteristics (%)

(sum to 100% across rows)

HES 2004	Equivalised disposable household income					All individuals (000s)
	Q1	Q2	Q3	Q4	Q5	
Age						
0-17	28	21	21	16	14	1060
18-24	23	13	20	23	22	384
25-44	20	15	21	23	22	1152
45-64	15	13	18	24	30	913
65+	10	50	21	12	7	448
All	20	20	20	20	20	3957
Household type						
One person 65+	19	56	13	8	5	145
Couple 65+	5	50	24	13	8	289
One person under 65	30	14	21	19	17	202
Couple under 65	13	7	14	26	39	531
SP with dependent children	66	26	6	2	0	238
2P with dependent children	20	19	23	20	18	1505
Other family HHs with dependent children	17	21	29	19	14	412
Family HHs with no dependent children	12	11	17	30	31	487
Non-family HHs	26	11	19	20	24	149
All	20	20	20	20	20	3957
Ethnicity						
European/Pākehā	15	20	19	22	24	2756
NZ Māori	25	21	22	19	12	556
Pacific	32	25	19	19	5	256
Other	41	15	23	9	12	389
All	20	20	20	20	20	3957
Children by household type						
Children in SP HHs	67	25	5	2	<1	148
Children in 2P HHs	22	20	22	19	17	723
Children in other family HHs	21	22	30	15	12	159
All children	28	21	21	16	14	1030

Table B.8
Composition of income quintiles (AHC)
by various household and individual characteristics (%)

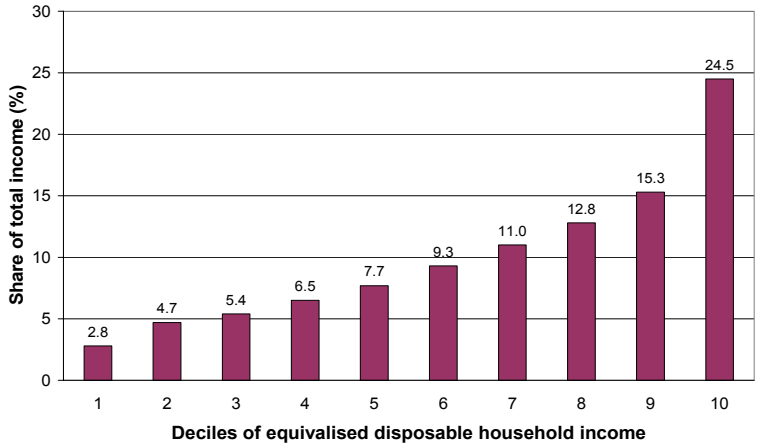
(sum to 100% down columns)

HES 2004	Equivalised disposable household income					Overall composition
	Q1	Q2	Q3	Q4	Q5	
Age						
0-17	37	29	28	22	19	27
18-24	11	6	10	11	11	10
25-44	29	22	30	33	32	29
45-64	18	15	21	28	35	23
65+	5	28	12	7	4	11
All	100	100	100	100	100	100
Household type						
One person 65+	3	10	2	2	1	4
Couple 65+	2	18	9	5	3	7
One person under 65	8	3	5	5	4	5
Couple under 65	9	5	10	18	26	13
SP with dependent children	20	8	2	1	<1	6
2P with dependent children	37	36	43	39	35	38
Family HHs with dependent children	9	11	15	10	7	10
Other family HHs with no dependent children	8	7	10	18	19	12
Non-family HHs	5	2	4	4	5	4
All	100	100	100	100	100	100
Ethnicity						
European/Pākehā	52	70	67	76	84	70
NZ Māori	18	15	16	13	9	14
Pacific	10	8	6	6	2	6
Other	20	8	11	5	6	10
All	100	100	100	100	100	100
Children by household type						
Children in SP HHs	35	17	4	2	1	14
Children in 2P HHs	54	66	74	84	86	70
Children in other family HHs	12	16	22	14	13	15
All children	100	100	100	100	100	100

Income shares across the distribution

Figures B.1 and B.2 above show that income is not distributed evenly across the population even after taxes and transfers have been taken into account. **Figure B.3** presents the same information in a different way by showing the share of the total income that is received by the different income deciles (BHC).[25] Because the income concept is *equivalised* household disposable income, the interpretation of the information in the graph can be understood in terms of comparisons of the consumption capabilities for those in the various deciles, having adjusted for household size and composition.[26]

Figure B.3
Shares of total income by deciles: HES 2004



The top 10% receive a quarter and the top 30% receive just over a half of the total population income.

Table B.9 shows that the distribution of household income in New Zealand is broadly similar to that in the UK, Australia and Canada.

Table B.9
Shares of total income by quintiles of equivalised disposable household income (%): international comparisons for c 2002 to 2004

	Bottom quintile	Q2	Q3	Q4	Top quintile
New Zealand	8	12	17	24	40
UK	8	12	17	22	42
Australia	8	13	18	24	38
Canada	5	11	16	24	44

Sources: UK (Table A3 in DWP (2007) for 2004); Australia (Table 1 in ABS (2004) for 2002); Canada (Table 8.5 in Statistics Canada (2006) for 2004 – using disposable HH income, not equivalised). See further in n26 below.

[25] The Introduction (Section A) drew attention to the issue of the incomes of many households in the bottom decile not being reliable indicators of their (potential) living standards. This issue does not compromise the figures in Figure B.3. For example, if all HHs with total expenditure of more than three times their income are deleted from the dataset, the bottom decile share changes from 2.8% to 3.6% and the rest remain almost unchanged.

[26] The relativities between deciles are not changed greatly if actual disposable incomes are used rather than equivalised incomes. For example, in Table B.9 the proportions for New Zealand are 6%, 12%, 17%, 24% and 42% respectively using actual household disposable incomes.

The re-distribution of income: market income, government cash benefits, income tax and consumption tax

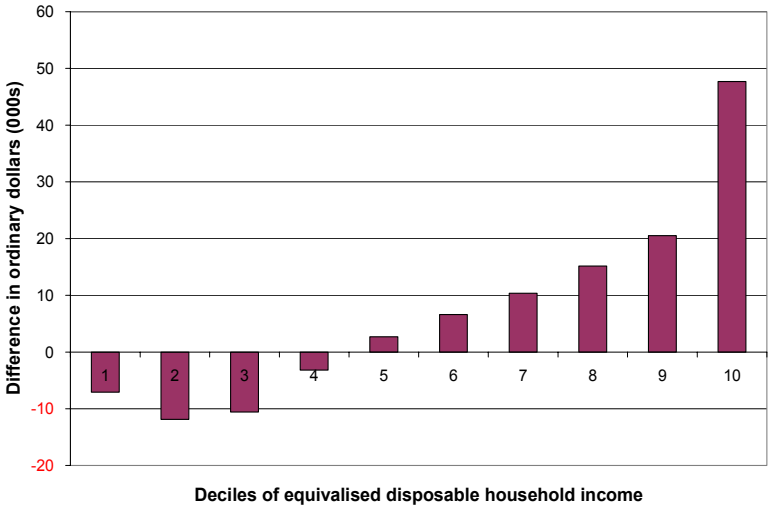
The income that households receive from wages and salaries, from investments and from people running their own businesses (market income) is redistributed through government intervention via taxation and social expenditure. This section provides an indication of the extent of the redistribution.

In interpreting the findings in this section it is important to note that market income is not the counterfactual or 'natural state' that would exist if there was no government intervention. The existence of taxes, government expenditure and the apparatus of the welfare state influences citizens' behaviour in relation to labour market participation, living arrangements, and so on. The analysis can be taken as an indication of the extent of redistribution given that we live in a redistributive welfare state.

In a narrow sense, market income is redistributed across households because high-income households pay more income tax than low-income households, and also receive less in the way of cash benefits from the government.

Figure B.4 shows the difference between income taxes paid and government cash benefits received for households in the different equivalised household disposable income deciles.[27] Government cash benefits on average exceeded income tax paid for households in the bottom four deciles. The relativities across the deciles shown in Figure 5 have been fairly steady since early in the 1990s (cf Figure 4.14 in *Statistics New Zealand 1998*).

Figure B.4
Income tax less government cash transfers: HES 2004



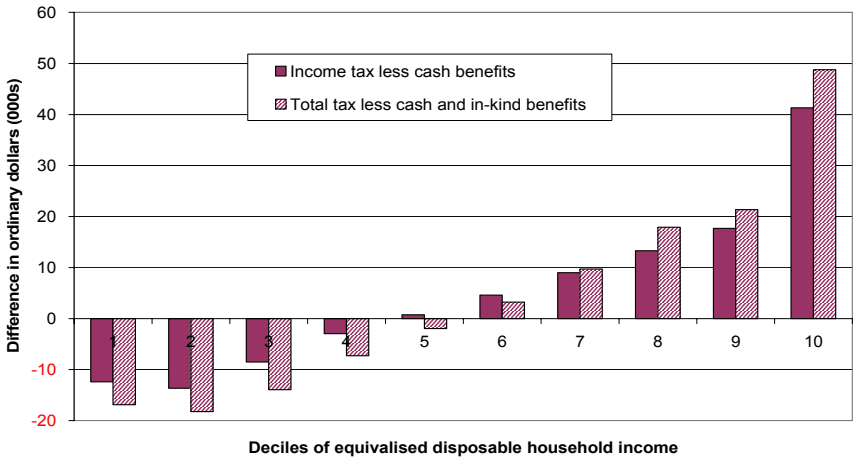
Households however also receive government-funded health and education services which means that they do not have to pay for them directly from their own income. These services can be seen as a form of income or in-kind government benefit to be counted along with any cash benefits received. Households also pay consumption taxes (mainly the goods and services tax (GST)) when they spend money on goods and services.

[27] In Figure B.4 the deciles are deciles of individuals ranked according to their household's equivalised disposable income, as in the rest of the report. The average difference in each decile between income tax paid and government cash transfers received is calculated for the households to which the individuals belong (in ordinary unequivalised dollars).

In this broader framework the concept of 'final household income' is sometimes used as a means of taking into account cash and in-kind income from the market and the government and consumption taxes as well as income taxes. Crawford and Johnston (2004) have shown that, using a 'final household income' approach, there is further redistribution from more well-off households to less well-off households because households in the higher income deciles pay more consumption tax and also receive less in the way of in-kind benefits from education and health spending combined. They conclude that 'final incomes are more equally distributed than disposable incomes' (p29). This finding is illustrated in **Figure B.5** which compares the redistribution using both the narrower and broader frameworks for 1998.[28]

Figure B.5

The redistribution of market income: HES 1998



Source: Crawford and Johnston (2004), Appendix Tables 17-20

It is important to note that Figures B.4 and B.5 are both simply cross-sectional snapshots of income re-distribution across the deciles and do not show how incomes of individuals or households change over time. At one point in time a household may be a net 'receiver' and at another time, a net 'payer'.

[28] The analysis behind the data for Figure B.5 is not able to be simply repeated using HES 2004 data as Crawford and Johnston (2004) used modelled income data for beneficiaries rather than what the respondents reported and is recorded in the standard HES datasets. Crawford and Johnston note that there are some grounds for concern about the accuracy of recall about income by those in receipt of social welfare benefits as their incomes seem to be lower than that recorded in administrative data. For their analysis Crawford and Johnston (2004) used Treasury's TAXMOD tax-benefit model to calculate entitlements rather than simply rely on respondents' recall as regards gross income. This approach gives a slightly different income distribution for the bottom decile or so. This difference is evident when decile 1 is compared for Figures B.4 and B.5. Figure B.5 shows higher net transfers at the bottom end.

Section C
Trends in key labour market, demographic and social assistance variables

This report is essentially descriptive. It does not attempt, for example, to give a detailed explanation of changes in the income distribution by drawing on what we know about the impacts of key labour market, demographic, macro-economic and geo-political factors and of tax and social assistance policy settings. [29]

This section however goes a little beyond description by providing information on trends in some key variables which clearly impact on the income distribution. These trends provide the basis for a high-level account of changes in the middle and at the lower end of the distribution in line with the main themes and focus of this paper.

The trend in median household income is strongly influenced by the incomes of two parent with dependent children households. This group made up just under half of those in the middle quintile from the mid 1990s to 2004 and an even greater proportion during the 1980s. The median income of this household type is very close to the overall median income in the 1982-2004 period.

The two factors that impact the most on the incomes of this household type are average wage rates and the total hours worked by the two parents. The total number of hours worked is in turn related to the overall employment rate and to social norms, especially in relation to labour force participation for mothers of dependent children. This section therefore reports on the employment rate (by sex) and net average ordinary time weekly earnings (NAOTWE). The trend in median household income is strongly influenced by trends in these two factors.

The lower part of the income distribution includes those from households whose main income is from paid employment ('the working poor') and those from households whose main income is from income-tested benefits or New Zealand Superannuation (NZS). Trends in the numbers below typical low-income thresholds (ie trends in poverty rates) are therefore strongly influenced by two sets of factors: (a) average wage levels and employment rates; and (b) (trends in) the levels of social assistance and of the numbers in receipt of social assistance. Social assistance is taken here to refer to the main income-tested benefits for those under 65, together with Family Support (FS) where there are dependent children.

This section therefore also reports on trends in the total number in receipt of a main benefit, the value in real terms of the main benefits plus FS where relevant, and the unemployment rate. The annual percentage changes in GDP per capita are also provided for high-level context.

Incomes around the median

Figure C.1 shows the trend in the proportion of the population aged 15-64 who are in paid employment for at least one hour per week (the 'employment rate'). After falling to a low in 1992 the employment rate rose through to 1996, faltered for two years then rose steadily each year through to 2004. The female employment rate is higher in 2004

[29] For more detailed analysis and explanation see, for example, Easton (1996), Dixon (1998), O'Dea (2000), Hyslop and Maré (2001), Singley and Callister (2003), Hyslop and Yahanpath (2005).

compared with the mid 1980s whereas male employment in 2004 is below what it was in the mid 1980s.

Figure C.2 shows the increasing number of hours being worked by the parents in two parent plus dependent children households, especially since the mid 1990s, and **Figure C.3** shows the trend in average earnings as indicated by the NAOTWE.

Figure C.1
Employment rate for those aged 15-64, 1988 to 2004

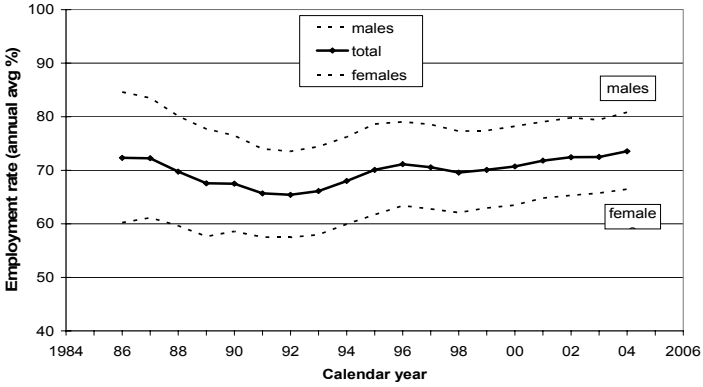


Figure C.2
Proportion in two parent HHs by hours of paid employment by parents (one or more is FT)

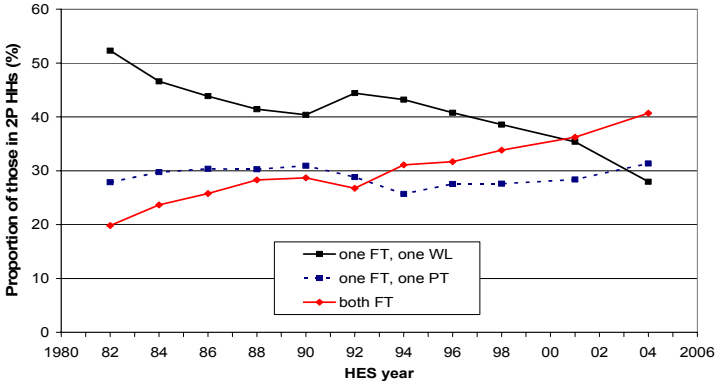
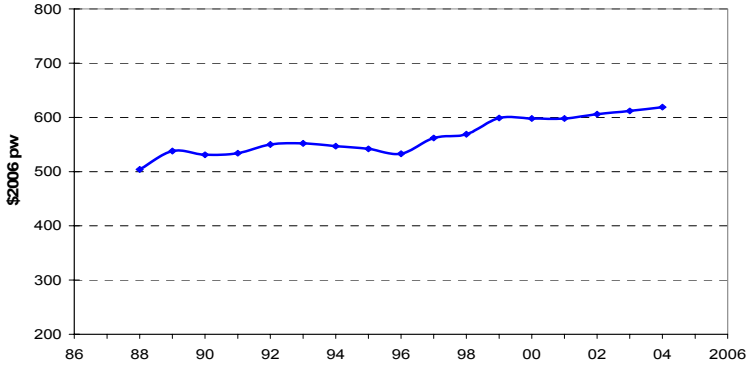


Figure C.3
Net average ordinary time weekly earnings in 2006 dollars



Taken together these three factors point to median household incomes falling away in the early 1990s as employment declined, and rising from the mid 1990s through to 2004, with reasonably strong growth from 2001 to 2004 when all three factors lined up together to

drive up income of two parent with dependent children households. (See Figure D.1 in the next section.)

Incomes at the lower end of the income distribution

Incomes at the lower end of the distribution are significantly affected by trends in benefit levels and in the numbers for whom social assistance income is their primary source of income.

Figure C.4 shows the rise in the total number of people receiving a main benefit through to 1994, the further rise through to 1999 and the steady decline since. Numbers in receipt of the unemployment benefit follow a trend that is a rough mirror image of the employment rate (Figure C.1).

Figure C.4
Numbers in receipt of working age income-tested benefits

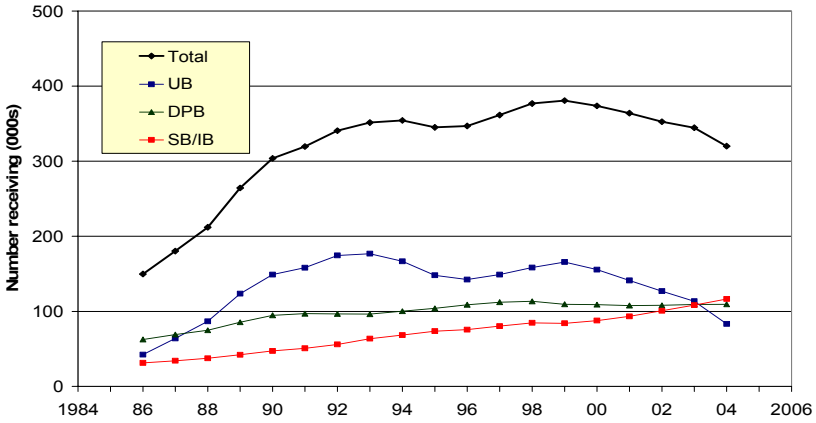
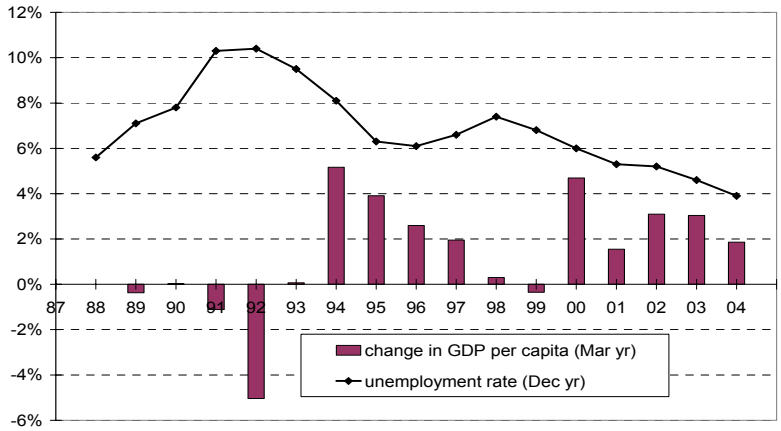


Figure C.5 outlines the pattern of the business cycle over the 1982 to 2004 period in terms of GDP per capita growth and the unemployment rate.

Figure C.5
Real GDP per capita annual changes and unemployment rates, 1988 to 2004



Source: Statistics New Zealand

Figure C.6 shows the trend in real terms of average earnings and of income-tested benefits for the period, and **Figure C.7** uses the same data to show how benefit levels have moved relative to average earnings. The earnings measure is net average ordinary time weekly earnings (NAOTWE) and the income-tested benefit measure is the value of the main benefit plus any 'Family Support' for which the respective families are eligible in relation to the dependent children in their care.[30] In Figures C.6 and C.7:

IB+2 means: a couple in receipt of the Invalid's Benefit, with two children
UB+2 means: a couple in receipt of the Unemployment Benefit, with two children
DPB+2 means: a sole parent in receipt of the Domestic Purposes Benefit, with two children
DPB+1 means: a sole parent in receipt of the Domestic Purposes Benefit, with one child

Figure C.6
Income-tested benefits and average earnings in real terms for selected HH types

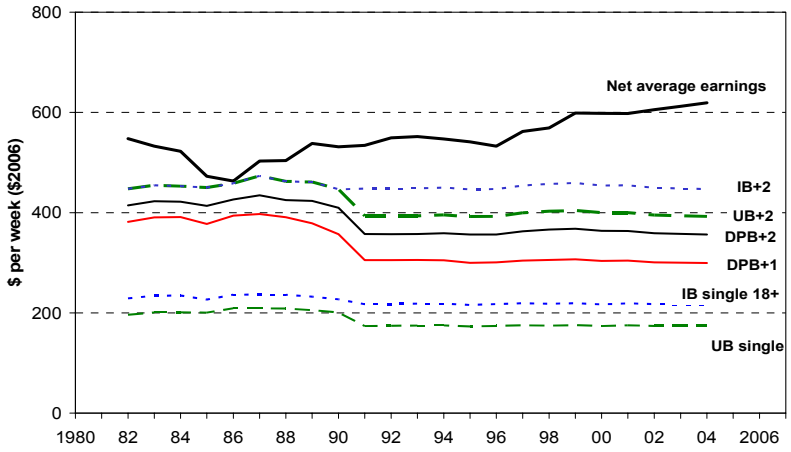
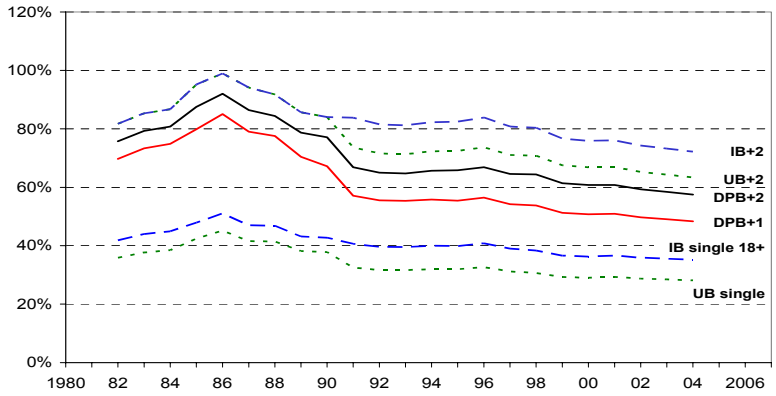


Figure C.7
Benefits relative to average earnings



Source for Figures C.6 and C.7: Information and Monitoring Unit, MSD

Taken together, the trends in the three key factors of numbers in receipt of a benefit, the real value of benefits and employment rates point to a rising poverty rate in the late 1980s through to the mid 1990s, using a 'fixed line' threshold. From 1994, the improved opportunities for employment and from 1998 the reduction in benefit numbers while benefit levels stayed reasonably steady in real terms together point to a reducing poverty rate from the mid 1990s through to 2004. (See Section F.)

[30] Note that if the household incomes derived from social assistance were equivalised, there would be much less of a difference in income between the different household and benefit types used in the graphs.

Section D
Household incomes and income inequality, 1982 - 2004

This section reports on:

- changes in equivalised household incomes overall
- changes in medians for different household types
- changes for different parts of the distribution
- the changing shape of the household income distribution
- trends in inequality using percentile ratios and the Gini coefficient
- international comparisons of income inequality.

Income changes in real terms, 1982 to 2004

Whole population, overall trends

Figure D.1 and Table D.1 show the trends in real equivalised household disposable income (BHC and AHC) from 1982 to 2004.

Households around the median in 2004 are only slightly better off than their counterparts two decades ago in 1982 (6%). The steady rise from the mid 1990s to 2004 (27%) has for the first time (2004) restored incomes at the middle to what they were before the decline that began in the late 1980s.

The mean and median generally move in the same direction.

The most notable exception is for the period 1988 to 1990 during which the mean rose but the median fell. In this period, average incomes for households in the top quintile of the income distribution rose in real terms but those in the other four quintiles fell (see Figure D.3). This lowered the median but raised the mean as the impact of the rises of those with higher incomes was the dominant effect.

Figure D.1
Real equivalised household incomes, 1982 to 2004 (2004 dollars)

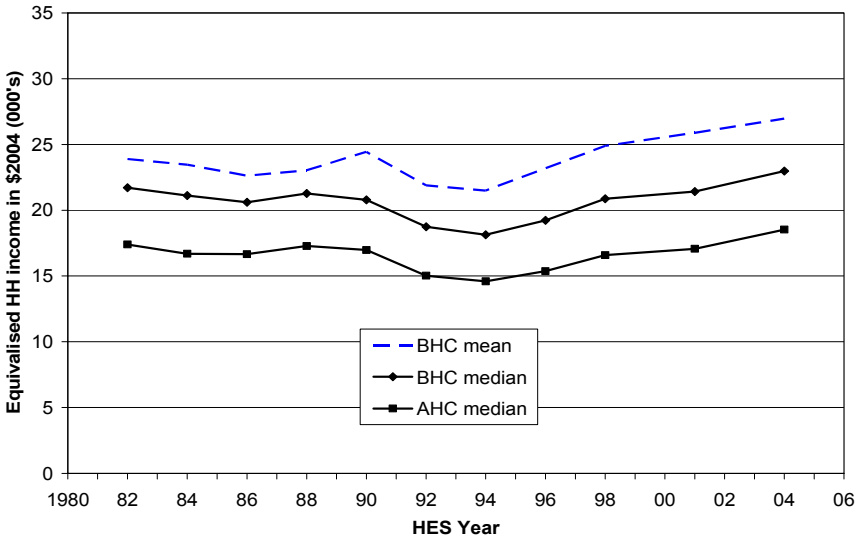


Table D.1
Real equivalised household incomes, 1982 to 2004 (2004 dollars)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
BHC mean	23,900	23,500	22,600	23,000	24,400	21,900	21,500	23,200	24,900	25,900	27,000
BHC median	21,700	21,100	20,600	21,300	20,800	18,700	18,100	19,200	20,900	21,400	23,000
AHC median	17,400	16,700	17,700	17,300	17,000	15,000	14,600	15,400	16,600	17,100	18,500

Trends for different household types

Figure D.2 and Table D.2 show the trends in real equivalised household disposable income (BHC) from 1982 to 2004 for selected household types.

Note that real median equivalised incomes for those in 65+ couple households remained steady in the period at around $15,000 to $16,000 pa. Median incomes for those in one person 65+ households also remained relatively steady at around $13,000 to $14,000 pa. These are omitted from the graph to avoid clutter.

Figure D.2
Real equivalised household incomes for selected household types, 1982 to 2004

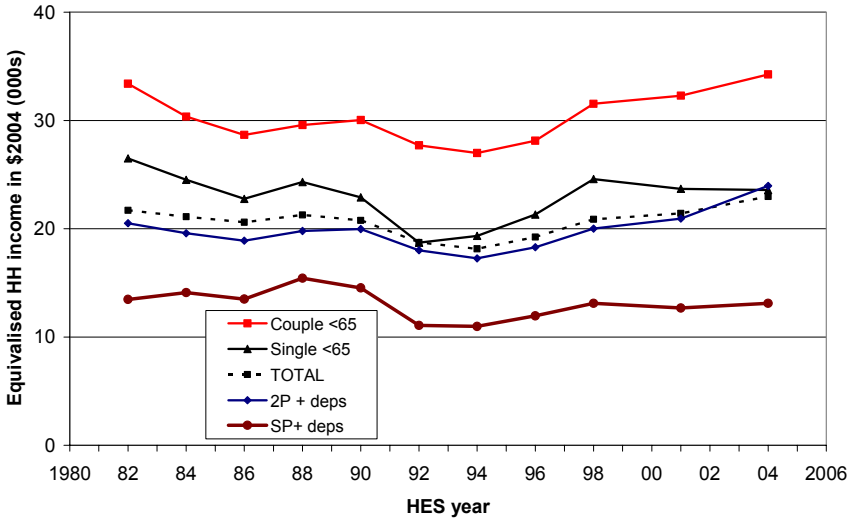


Table D.2
Real equivalised household incomes for selected household types, 1982 to 2004 ($2004)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
Couple < 65	33,400	30,400	28,700	29,600	30,000	27,700	27,000	28,000	31,500	32,300	34,300
Single < 65	26,500	24,500	22,800	24,300	22,900	18,700	19,300	21,300	24,600	23,700	23,600
TOTAL	21,700	21,100	20,600	21,300	20,800	18,700	18,100	19,200	20,900	21,400	23,000
Two parent	20,500	19,600	18,900	19,800	20,000	18,016	17,300	18,300	20,000	20,900	24,000
Sole parent	13,500	14,100	13,500	15,400	14,500	11,100	11,000	12,000	13,100	12,700	13,100
Couple 65+	16,200	16,200	16,000	16,100	16,600	15,400	14,800	15,300	15,100	15,100	15,800
Single 65+	13,500	13,700	12,900	13,000	12,400	12,700	12,600	13,400	13,600	14,200	14,100

Differing trends for different parts of the distribution (BHC)

Reporting on trends in the overall median or mean household income provides useful high-level summaries, but they tell only a part of the story as different parts of the income distribution (can) show quite different relative movements over time.

Figure D.3 and Table D.3 divide the population into ten equal groups (deciles) and show the trends in real incomes (BHC) for the top of each decile.[31] In 2004 the incomes of the bottom 40% of the population were around the same in real terms as their counterparts were over two decades earlier in 1982. On the other hand there were real gains in the period for the top half of the distribution. The income distribution is therefore much more dispersed in 2004 than in 1982.[32]

Figure D.3
Real equivalised household incomes (BHC): decile boundaries

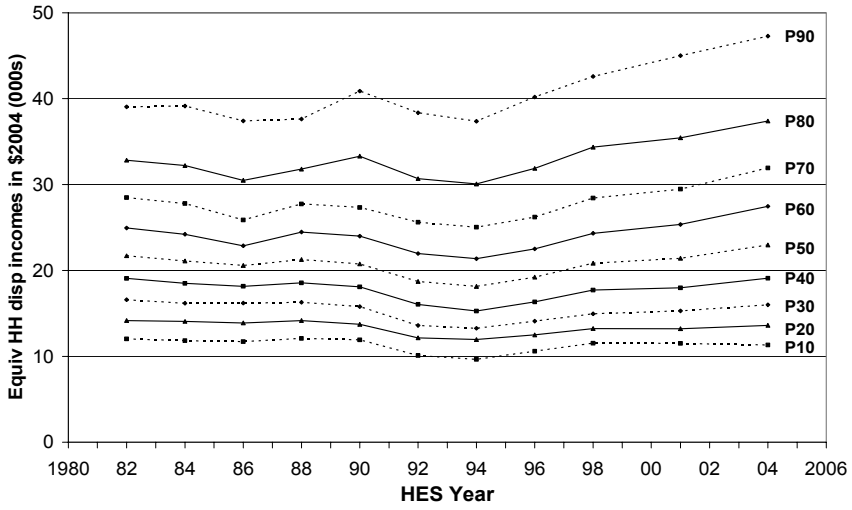


Table D.3
Real equivalised household incomes (BHC): decile boundaries (2004 dollars)

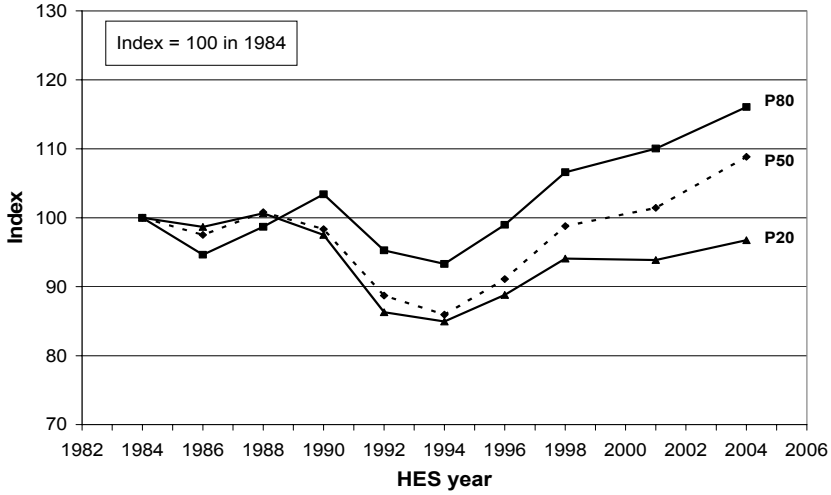
	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
P90	39,100	39,100	37,400	37,600	40,900	38,400	37,400	40,200	42,600	45,000	47,300
P80	32,800	32,200	30,500	31,800	33,300	30,700	30,100	31,900	34,400	35,500	37,400
P70	28,500	27,800	25,900	27,700	27,300	25,600	25,000	26,200	28,400	29,500	32,000
P60	25,000	24,200	22,900	24,500	24,000	22,000	21,400	22,500	24,300	25,400	27,500
P50	21,711	21,100	20,600	21,300	20,800	18,700	18,100	19,200	20,800	21,400	23,000
P40	19,100	18,500	18,200	18,600	18,100	16,100	15,300	16,400	17,700	18,000	19,100
P30	16,600	16,200	16,200	16,300	15,800	13,600	13,300	14,100	15,000	15,300	16,000
P20	14,200	14,100	13,900	14,200	13,700	12,100	12,000	12,500	13,200	13,200	13,600
P10	12,000	11,800	11,700	12,100	11,900	10,100	9,700	10,600	11,500	11,500	11,300

[31] When the income distribution is divided into 100 equal groups each group is called a percentile (P). The top of the first decile is labelled P10 as it is also the top of the 10th percentile.

[32] Changes from one survey to the next for the P10 line can be significantly influenced by the presence of varying numbers of households reporting implausibly low incomes from survey to survey. The P20 line is more robust. See Appendix 7 for discussion on the 'noise' in the income distribution at the lower end.

Another useful way of summarising the relative changes in various parts of the income distribution is to index all parts to a common base. **Figure D.4** illustrates how the upper, middle and lower parts of the distribution changed in the two decades from 1984 to 2004.

Figure D.4
Relative changes for different parts of the BHC income distribution (1984 base)



Summary reports of relative changes over time can depend significantly on the base year chosen. **Table D.4** shows the relative changes for the deciles using base years of 1984, 1994 (the time when HH incomes were lowest in real terms) and 1998 (for more recent trends).

Table D.4
Real equivalised household incomes (BHC) in 2004 relative to selected base years: index = 100 in base year

base year	period	P10	P20	P30	P40	P50	P60	P70	P80	P90
1984	1984 - 2004	96	97	99	103	109	113	115	116	121
1994	1994 - 2004	117	114	121	125	127	129	128	124	127
1998	1998 - 2004	98	103	107	108	110	113	112	109	111

Note: P10 = top of decile 1, and so on.

The 1984 base underlines the general points made in relation to Figure D.3: no improvement for the bottom four deciles in the two decades to 2004 plus increasing dispersion driven by increases for the top half of the distribution.

The 1994 base shows that there have been gains right across the distribution since that low point, with the gains being more modest at the lower end.

The 1998 base indicates that more recently there have been next to no gains for the bottom two deciles and reasonably similar improvements for each of the top five or six deciles.

Differing trends for different parts of the distribution (AHC)

Figure D.5 and Table D.5 divide the population into ten equal groups (deciles) and show the trends in real incomes (AHC) for the top of each decile.[33] In 2004 the incomes of the bottom 40% of the population were around the same in real terms as their counterparts were over two decades earlier in 1982. On the other hand there were real gains in the period for the top half of the distribution. The income distribution is therefore much more dispersed in 2004 than in 1982.[34]

Figure D.5
Real equivalised household incomes (AHC): decile boundaries

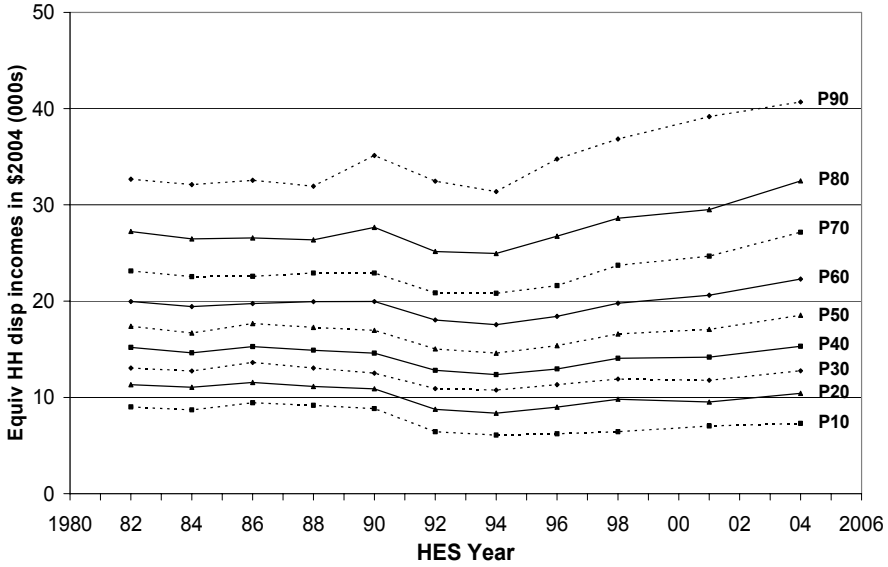


Table D.5
Real equivalised household incomes (AHC): decile boundaries (2004 dollars)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
P90	32,700	32,100	32,600	31,900	35,100	32,500	31,400	34,800	36,800	39,200	40,700
P80	27,200	26,500	26,600	26,400	27,700	25,200	25,000	26,800	28,600	29,500	32,500
P70	23,100	22,500	22,600	22,900	22,900	20,900	20,800	21,600	23,700	24,700	27,200
P60	20,000	19,400	19,700	19,900	20,000	18,000	17,600	18,400	19,800	20,600	22,300
P50	17,400	16,700	17,700	17,300	17,000	15,000	14,600	15,400	16,600	17,100	18,500
P40	15,200	14,600	15,300	14,900	14,600	12,800	12,400	13,000	14,100	14,200	15,300
P30	13,100	12,700	13,600	13,100	12,500	10,900	10,800	11,300	11,900	11,800	12,800
P20	11,300	11,100	11,500	11,100	10,900	8,800	8,400	9,000	9,800	9,500	10,400
P10	9,000	8,700	9,400	9,200	8,800	6,400	6,100	6,200	6,400	7,000	7,300

[33] When the income distribution is divided into 100 equal groups each group is called a percentile (P). The top of the first decile is labelled P10 as it is also the top of the 10th percentile.

[34] The implausibly low incomes of many in the bottom decile and some in the second decile means that the P10 values should not be relied on to support any strong conclusions based on small changes from survey to survey. The P20 values are much more robust.

The changing overall shape of the household income distribution

The different rates of change for different parts of the household income distribution in the 1982 to 2004 period lead to a changing shape for the overall income distribution.

The changes are shown on the next page in **Figures D.6, D.7 and D.8** for 1984-1994, 1994-2004 and 1984-2004 respectively.

The most significant structural change to the income distribution over the last two decades (Figure D.8) has been a significant hollowing out of the middle parts of the distribution from $12,000 to $30,000 (equivalised) and a corresponding increase in the proportion of the population in higher income households. There has also been a small increase in the proportion of the population in low-income households.

The income distribution is now more dispersed. Inequality is greater in 2004 than it was in 1984.

Constructing the graphs in Figures D.6, D.7 and D.8

To construct the line for the 2004 HES year, individuals are grouped by the equivalised incomes of their households into bands ('bins') of $2000 up to the $36,000 mark, then into $4000 bins in the less dense parts above that. The number in each bin is expressed as a proportion of the whole population. This gives the density at the midpoint of the respective bins.

For 1984 and 1994 the $2000 and $4000 nominal bin-sizes are adjusted downwards using the CPI so that for each year bin-sizes are kept the same size in real terms. The same outcome can be achieved by converting the income of all households to 2004 dollars and using the 2004 nominal bin-sizes.

The total area under the plotted line is therefore forced to be the same for each year as the base length is the same in each case ($70,000) and the sum of the densities = 1 by definition. This approach produces a reasonable smoothing of the lines and enables valid year-on-year comparisons. It is in effect a simple but effective approximation to the more sophisticated adaptive kernel density function technique.

Figure D.6

Household income distribution (BHC): 1984 and 1994

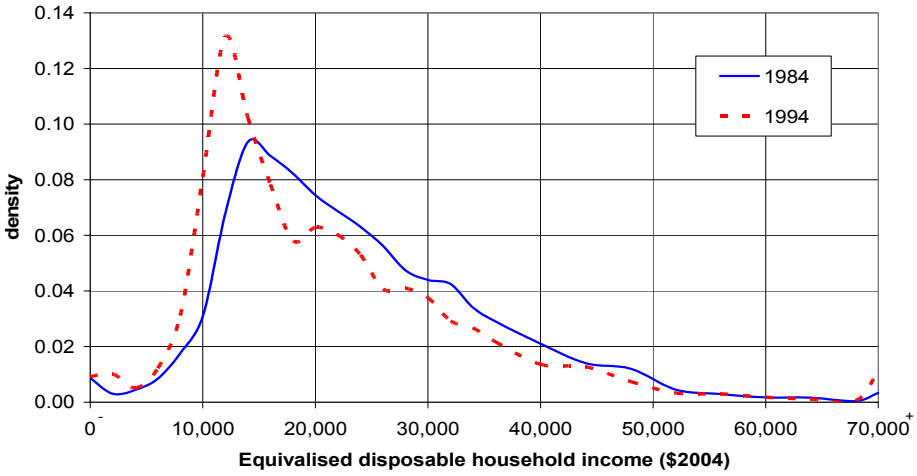


Figure D.7

Household income distribution (BHC): 1994 and 2004

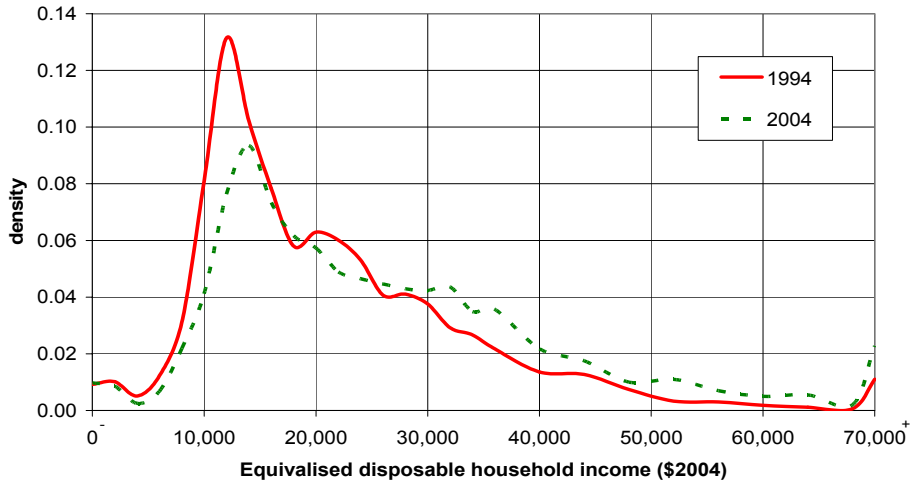
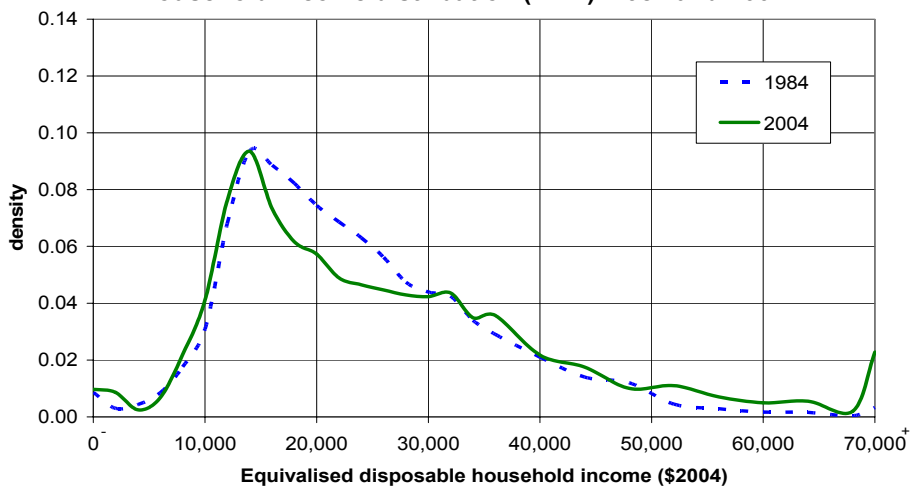


Figure D.8

Household income distribution (BHC): 1984 and 2004



Note: The household income distributions are person-weighted. The graphs show the density of individuals attributed with the equivalised income of their respective households.

Income inequality: summary indicators

Income inequality is about how dispersed the income distribution is.

Figures D.5 to D.8 (above) give a visual impression of how the income distribution has become more dispersed over the two decades to 2004.

There are a range of ways that are used to try to summarise the amount of income dispersion or inequality in a single statistic. No one statistic has emerged as the generally accepted way, mainly because each one captures a different aspect of the way the dispersion of incomes changes over time. It is now common to report on more than one indicator and to compare the trends produced by each. [35]

This report uses two measures: percentile ratios and the Gini coefficient.

Percentile ratios

When individuals are ranked on the equivalised income of their respective households and divided into 100 equal-sized groups, each group is called a percentile. If the ranking starts with the lowest income then the income at the top of the 10th percentile is denoted P10, the median or top of the 50th percentile is P50 and so on. Ratios of values at the top of selected percentiles, such as P80/P20, are often called percentile ratios. Percentile ratios summarise the relative distance between two points in the income distribution.

This report uses four percentile ratios to provide a succinct picture of trends in income inequality.

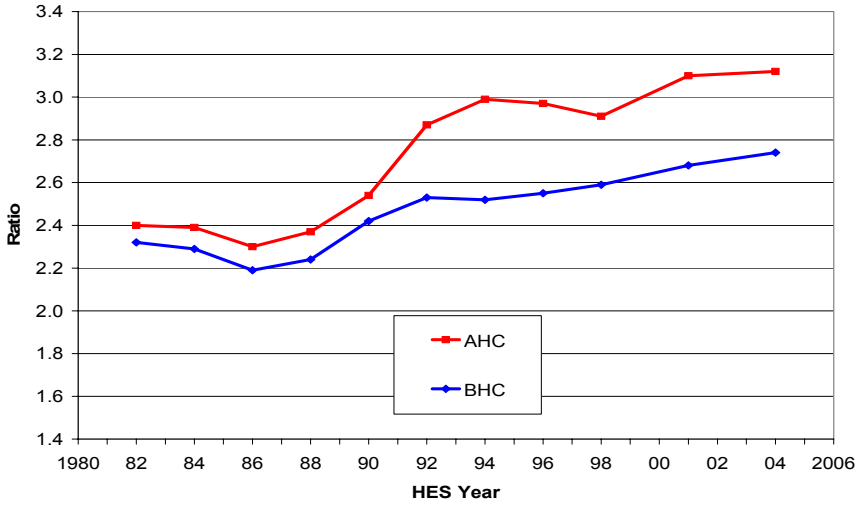
- The P90/P10 ratio provides a good indication of the full spread of the distribution, going as far as possible to the extremes without running the risk of being overly influenced by unrepresentative very high incomes or by the difficulties with bottom decile incomes.
- The P80/P20 ratio gives a better indication of the size of the range within which the majority of the population fall and has less volatility than the P90/P10 ratio.
- The P80/P50 and the P20/P50 ratios give an indication of how higher and lower incomes compare with the midpoint.

For the P90/P10, P80/P20 and P80/P50 indicators, the higher the ratio the greater is the level of inequality. For the P20/P50 indicator, the higher the ratio the lower is the level of inequality in this part of the distribution.

[35] See Australian Bureau of Statistics (2004: pp36ff) for a useful discussion.

Figure D.9 shows the trends for the P80/P20 ratio. Incomes after adjusting for housing costs (AHC) are more dispersed than BHC incomes. The difference between AHC and BHC inequality has been much greater in the decade since 1994 than in the previous decade. The most rapid rises in inequality occurred in the 1988-1992 period. There has been a further net rise in the decade from 1994 to 2004 but the rate of increase was slower.

Figure D.9
Income inequality in New Zealand: the P80/P20 ratio



Tables D.6 and D.7 summarise the trends in all four percentile ratios for the period 1982 to 2004.

Both the P80/P20 and P90/P10 ratios are higher in 2004 than in 1984. The increases are almost entirely due to the relatively large overall rise in the incomes for those around the 80th and 90th percentiles. The overall changes in the period for P20 and P10 were very small (cf Figure D.5).

Table D.6
BHC income inequality in New Zealand: percentile ratios

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
P90/P10	3.25	3.31	3.20	3.11	3.43	3.80	3.87	3.79	3.68	3.91	4.17
P80/P20	2.32	2.29	2.19	2.24	2.42	2.53	2.52	2.55	2.59	2.68	2.74
P80/P50	1.51	1.53	1.48	1.49	1.60	1.64	1.66	1.66	1.65	1.66	1.63
P20/P50	0.65	0.67	0.68	0.67	0.66	0.65	0.66	0.65	0.64	0.62	0.59

Table D.7
AHC income inequality in New Zealand: percentile ratios

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
P90/P10	3.63	3.69	3.46	3.48	3.98	5.04	5.16	5.59	5.74	5.57	5.57
P80/P20	2.40	2.39	2.30	2.37	2.54	2.87	2.99	2.97	2.91	3.10	3.12
P80/P50	1.57	1.59	1.51	1.53	1.63	1.67	1.71	1.74	1.73	1.73	1.75
P20/P50	0.65	0.66	0.65	0.65	0.64	0.58	0.57	0.58	0.59	0.56	0.56

Gini coefficient

In contrast to the percentile ratios the Gini coefficient takes the incomes of all individuals into account. It gives a summary of the income differences between each person in the population and every other person in the population. A difference of, say, $1000 between two high-income people contributes as much to the index as a difference of $1000 between two low-income people.

When comparing changes in income distributions over time, it is important to note that the Gini coefficient is more sensitive to changes in the more dense low-to-middle parts of the distribution than it is to changes more towards the ends of the distribution. The Gini scores (x100) range from 0 to 100 with scores closer to 100 indicating higher inequality and those nearer zero indicating lower inequality (ie greater equality).

The main feature of **Figure D.10** is the steep rise in the Gini coefficient from the late 1980s to the early 1990s for both BHC and AHC incomes. This is a similar trend to that shown by the P80/P20 ratio.

Inequality as measured by the Gini coefficient is greater for AHC incomes then for BHC, as is the case when using percentile ratios. For AHC incomes, the Gini in 2004 has fallen since 2001 to be back to where it was in 1996. Whether this is part of a downward trend or is merely a statistical blip will be clearer once the 2007 HES data is available.

For BHC incomes, the Gini stayed flat from 1998 to 2004 compared with the steady and continued rise in the P80/P20 ratio from the mid 1990s. The latter reflects the greater rise in P80 compared with P20 in the period, whereas the flatness of the Gini reflects the way that incomes in the P40 to P90 range have moved in relative lock-step in the period (cf Figure D.3 and Table D.3). The BHC trends for the Gini and the P80/P20 ratio are compared in **Figure D.11** (next page).

Figure D.10
Inequality in New Zealand: the Gini coefficient

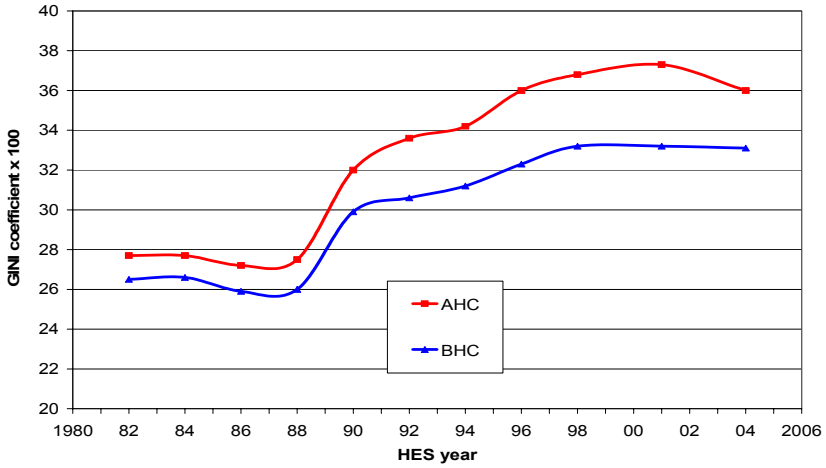
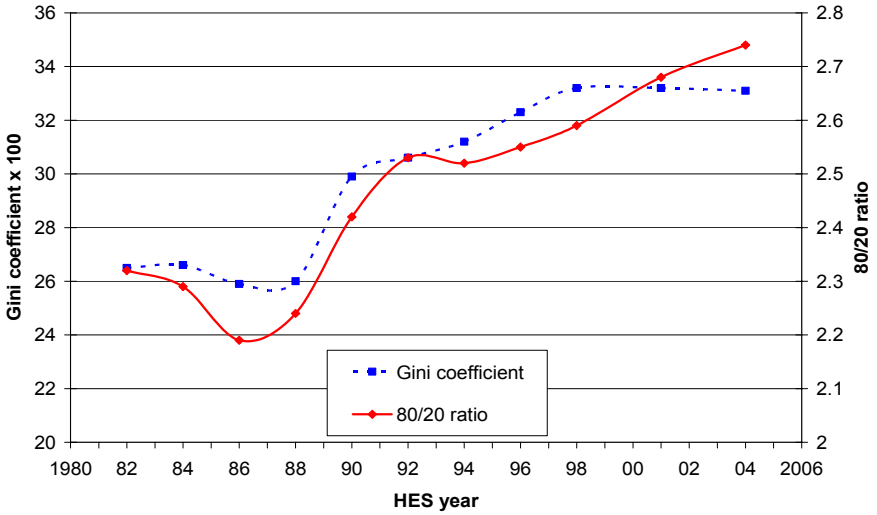


Table D.8
Income inequality in New Zealand: the Gini coefficient (x100)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
BHC	26.5	26.6	25.9	26.0	29.9	30.6	31.2	32.3	33.2	33.2	33.1
AHC	27.7	27.7	27.2	27.5	32.0	33.6	34.2	36.0	36.8	37.3	36.0

Figure D.11
Gini and 80/20 compared (BHC incomes)



Note: to facilitate the comparison, the vertical scales have been adjusted for both indicators compared to what they are in Figures D.9 and D.10.

International comparisons of income inequality

The international information for this section comes from BHC incomes reports provided to the OECD by national experts using national datasets and based on common assumptions and definitions.[36] The only significant difference between the OECD assumptions and definitions and those used in the rest of this report for BHC analysis is that the OECD work uses an equivalence scale that treats children as costing the same as adults. This difference has no impact on trend analysis over time or on any of the key points in this section.[37]

Comparisons for around the year 2000

The latest full set of information available from the OECD is for around the year 2000. New Zealand figures based on the 2004 HES are included in the text below. They show little change from those for the 2001 HES which is the basis for the 'around 2000' figures for New Zealand in the OECD material.

International comparisons are given for the Gini coefficient and the P90/P10 ratio. The OECD sources do not have comparisons for the P80/P20 ratio.

Figure D.12
Income inequality across the OECD: Gini coefficients for around 2000

Figure D.12 shows the OECD median for the Gini coefficient for around the year 2000 was 30.1 and New Zealand's score of 33.9 gave a ranking of 18th out of 25.[38] The New Zealand score was below that of the United States (35.7), similar to the United Kingdom (32.6) and above Australia (30.5), Ireland (30.4) and Canada (30.1). Northern European countries tend to have the lowest income inequality with Gini scores typically in the 24 to 26 range with Denmark having the lowest at 22.5.

There has been no significant change in the Gini for New Zealand from the 2001 HES (33.9) to the 2004 HES (33.5).

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[36] The main syntheses of the national reports are found in Förster and Mira d'Ercole (2005) and in OECD (2005). The New Zealand data and analysis was provided to the OECD by Statistics New Zealand. The New Zealand figures used in this section are generally a little different from those in the OECD sources as they draw on a slightly revised set more recently provided to the OECD by Statistics New Zealand.

[37] See Figure 3.2 in Appendix 3 for a comparison of trends in Gini coefficients for New Zealand using the square root scale used by the OECD and the Revised Jensen Scale.

[38] Information for 2000 was not available for Belgium and Spain.

P90/P10 ratios rank countries in roughly the same order as does the Gini coefficient. New Zealand's ratio of 4.2 in 2001 was below that of the United States (5.4), similar to that of the United Kingdom (4.2) and Australia (4.1), and higher than Canada (3.8). Northern European countries tend to have the lowest P90/P10 ratios in the 2.7 to 3.1 range with Denmark having the lowest at 2.7.

There has been no significant change in the P90/P10 ratio for New Zealand from the 2001 HES (4.2) to the 2004 HES (4.3).

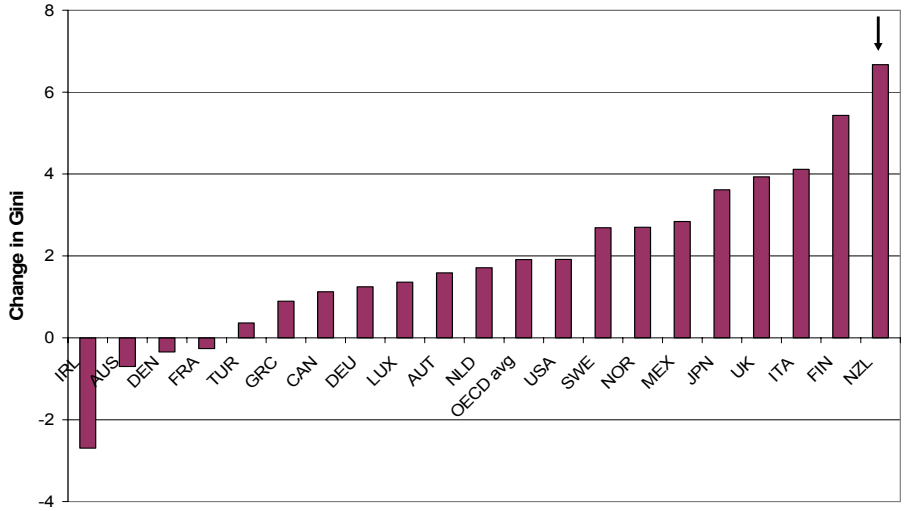
Trends since the mid 1980s

Figure D.17 shows that for 11 of the 20 OECD nations for which data is available for the period from the mid 1980s to around the year 2000, the absolute value of the change in the Gini score was less than 2. Included in this group are Canada, Australia and the United States. In contrast, New Zealand's increase of around 6.5 over the period was very significant and is the largest.

The bulk of the increase in New Zealand occurred from the late 1980s through to the mid 1990s and moved New Zealand from 2 points below the OECD average to 3 points above the average in 2000. The UK had a similar large increase but some of that rise occurred before the mid 1980s so the recorded change shown in Figure D.13 understates the full change from the early 1980s. Ireland's Gini fell significantly in the period, the only one to do so among the 20 OECD countries. For these 20, the average Gini score rose from 29 in the mid 1980s to 31 in around the year 2000, with most of the increase occurring for the decade from the mid 1980s to the mid 1990s.

As for most others, New Zealand's Gini scores did not change significantly in the second half of the 1990s.

Figure D.13
Gini coefficient changes, mid 1980s to 2000:
20 OECD nations



Section E
Low incomes, poverty and material hardship: conceptualisation and measurement issues

For the analysis of trends in poverty and hardship, this report uses low-income thresholds set at 50% and 60% of median household income.

Individuals and groups below such lines can be described in a neutral way as 'low-income populations', but it is now very common practice in New Zealand and internationally for the 50% and 60% thresholds, and others in that general part of the distribution, to be referred to as 'poverty lines' and those below them as 'poor' or 'in poverty' or 'at risk of poverty'.

The growing acceptability of 'poverty' language in more official contexts in the richer nations is reflected in recent OECD and UNICEF publications of international comparisons of poverty rates, and in decisions by the European Union (EU) to regularly publish income-based poverty indicators as part of a wider social reporting by Eurostat.

On the other hand, the positions taken by governments within the OECD have been and are more mixed with respect to a poverty discourse and whether or not to adopt any official measure or measures of poverty. In the United States, the War on Poverty announced in 1964 and the associated establishment of an official poverty line in 1969 have done much to ensure that poverty language has been and still is an accepted part of economic and social policy discourse in the United States. By contrast, in the United Kingdom, a Conservative government in the 1980s and the first half of the 1990s did not approve of poverty language and did not adopt an official measure. Much of this has changed since Tony Blair announced in 1999 that his government was committed to eradicating child poverty within a generation. The UK now has official measures of child poverty, although this has not been carried through to having official measures for the whole population. Canada has an elaborate low income measurement regime using low income cut-offs (LICOs), low income measures (LIMs) and a Market Basket Measure (MBM), but Statistics Canada has consistently noted that these are not poverty lines.

As recently as 1996, the government of the time in New Zealand was openly disapproving of any poverty discourse.[39] However, in 2002, in the context of the Agenda for Children, the government made a commitment to eliminate child poverty, and in her Speech from the Throne in November 2005, the Governor-General described the Working for Families package as "the biggest offensive on child poverty New Zealand has seen for decades". New Zealand does not however have an official poverty measure.

Researchers, advocacy groups and others in all the richer nations have used 'poverty' language and a range of poverty measures for a long time. The growing acceptance of the discourse by governments and their agencies can be seen as helpful to the extent that it represents official recognition that some citizens are experiencing unacceptable material hardship. It can serve to remind us all that behind the statistics are real people who are to varying degrees experiencing the stressful and demoralising exclusion from ordinary life that financial strictures and material hardship bring. Properly understood, "use of the term 'poverty' carries with it an implication and moral imperative that something should be done about it" (Piachaud, 1987:161).

[39] *New Zealand Herald 13 April 1996*.

It is however very easy for such language to be used in a way that ignores the fact that the conceptualisation and measurement of poverty is problematic and contested. For example it has often been said in recent years that 'one in three children in New Zealand are below the poverty line'.[40] This claim is really short-hand for something like 'using an income measure after housing costs have been deducted, around one in three children are below a threshold set at 60% of the median'. If another measure were used, the summary sound bite would be different. For example, on the most common measure used by the OECD, using income without deducting housing costs and a lower threshold of 50% of the median, around one in seven children are 'below the line', less than half the one in three rate that is commonly referred to. This underlines the importance of always being clear as to what measure is being used when reporting poverty rates.

All income poverty measures, even official ones, are constructs requiring judgement calls. These calls have to be made on a range of matters which can at first sight appear to be just technical decisions but which in fact reflect or imply underlying assumptions. There is no clear delineation between the poor and the non-poor that science can identify independent of judgment. This is not to say that any measure will do nor that all measures are equally suspect – some are clearly more defensible and reasonable than others. What is crucial in discussing poverty rates and trends is to identify what measure is being used, and to be aware of the different rationales for and pictures presented by the different measures. One of the goals of this paper is to encourage and contribute to that sort of poverty discourse.

This section and the ones that follow:

- outline key issues involved in conceptualising and measuring poverty and hardship using household incomes
- report on trends in proportions of people below various low-income thresholds, broken down by
  - age group
  - ethnicity
  - household and family type
  - labour market status
- report international comparisons on income poverty
- note future possibilities for reporting on income dynamics and the persistence of income poverty in New Zealand
- provide an integrated account of the findings on poverty and hardship from both an incomes and living standards perspective.

What is meant by 'poverty' in richer nations

The understanding of poverty and the associated measurement approach used in this report is narrowly focused. It is about 'unacceptable material hardship' arising from limited financial resources, and the insights about this that can be gleaned from a large-scale national survey.

This is a legitimate focus, but in pursuing it it is important to be aware that there is much more to 'poverty' than what can be measured (albeit imperfectly) through analysis of data from income or deprivation surveys. These can tell us about the material core ('unacceptable material hardship'), but a different type of research is needed to give insight into how this unacceptable hardship is experienced and understood.

[40] For one of the earliest examples, see *New Zealand Herald 12 April 1996 Section 1(5)*.

> What is at issue here is the non-material as well as the material manifestations of poverty. Poverty has to be understood not just as a disadvantaged and insecure economic *condition* but also as a shameful and corrosive social *relation* … [The non-material aspects include] … lack of voice; disrespect, humiliation and assault on dignity and self-esteem; shame and stigma; powerlessness; denial of rights and diminished citizenship … They stem from people in poverty's everyday interactions with the wider society and from the way they are talked about and treated by politicians, officials, the media and other influential bodies. Lister (2004:7)

Relative disadvantage

When talking about poverty or material hardship in the context of the richer nations, people are usually referring to relative disadvantage.

Relative disadvantage means that, in comparison to others in the population, a person has a day-to-day standard of living or access to resources that falls below a minimum acceptable community standard. In contrast, 'absolute' poverty refers to very basic minimal needs, such as food and shelter, which a person requires just to survive.

> Most of the poor in OECD countries today … would be judged rich by the 'dollar-a-day' definition widely used to measure poverty in the developing world. Similarly, the poor of the OECD today – judged by standards of nutrition, sanitation, water supply, health care, housing, heating, clothing, education and transport – are richer than the wealthiest lord or merchant of the Middle Ages. UNICEF (2005: 6)

In this report poverty is understood as *exclusion from the minimum acceptable way of life in one's own society because of inadequate resources*. The definition is explicitly relative, and includes both resources and outcome elements.[41]

Resources or outcomes?

While this definition (or something similar) is "the most commonly used definition in the industrialised world" (UNICEF 2000:6), it leaves open the question as to which aspect is primary – the inadequate resources or the restricted day-to-day living standards?

The general high-level observation that having inadequate resources leads to exclusion from a minimum acceptable way of life is not in dispute, but there are differing views as to which is the primary conceptualisation of poverty. When the focus is on the outcome (ie low living standards), income measures of limited resources are seen as only indirect measures of poverty. It is on this basis that those in households below conventional income thresholds are referred to not as 'in poverty' but rather 'at risk of poverty' (as in the EU).

On the other hand when the focus is on income and equality of opportunity, low living standards can be seen to be a consequence of income poverty, although other factors may play a part too (recall Figure A.1 above).[42]

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[41] Its prevalence can be traced to the influence of Townsend's definition, which he promoted in the early 1970s:

> Individuals, families and groups in the population can be said to be in poverty when they lack the resources to obtain the type of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged, or approved, in the societies to which they belong. Their resources are so seriously below those commanded by the average individual or family that they are, in effect, excluded from ordinary living patterns, customs and activities. (Townsend 1979:31)

Table E.1 summarises the difference of perspective that comes from emphasising one or the other.

Table E.1
Comparison of the two approaches to poverty conceptualisation and measurement

	Resources or input perspective	**Living standards or outcomes perspective**
The agreed process is that …	lack of resources leads to …	exclusion from a minimum way of life
Primary measure	Current income	Deprivation indicators
If the resource perspective is the focus, then …	'poverty' is about unacceptably low income	and low living standards is seen as the outcome of poverty
If the outcomes perspective is the focus, then …	unacceptably low income is seen as a prime cause of poverty	but 'poverty' is essentially about unacceptably low day-to-day living standards
Policy perspective	(In)equality of opportunity	(In)equality of outcome

Adapted from Perry (2002) Table 4, and Berthoud et al (2006) Figure 1.2.

This paper takes the view that both approaches have their place and that debate about primacy is not helpful as poverty and hardship (even understood more narrowly as being about the 'material core') are multi-dimensional and require a range of indicators to better describe their many aspects, and to help understand their causes and longer-term impacts. Each approach has its limitations. This is not an indecisive dollar-each-way position but one that is deliberately taken both on conceptual grounds and also on empirical grounds.

For example, it is well-established that there is a significant mismatch between poverty measured using a current income approach and poverty measured using deprivation indices or other measures of unacceptably low living standards. The overlap is only of the order of 50%.[43] This is hardly surprising given that day-to-day living standards are determined by much more than current income (see Figure A.1 in the Introduction).

The Ministry of Social Development has developed an Economic Living Standards Index (ELSI) to more directly monitor the living standards of New Zealanders in their day-to-day lives. ELSI-based findings sit alongside the findings from income-based analyses such as in this report and together they give a more textured and comprehensive assessment of the material wellbeing of New Zealand citizens. [44]

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[42] See Atkinson (1989) for further elaboration on these points.

[43] See Perry (2002) for a summary of the international literature and for detailed discussion on the issue, and Iceland and Bauman (2007) for a recent perspective from the US.

[44] The Ministry of Social Development's Living Standards research programme has developed a consumption-based measure of living standards (ELSI) based around what people (want to) have and do. It has published descriptive accounts of the distribution of living standards in New Zealand in 2000 and in 2004. See Jensen et al (2002), Krishnan et al (2002) and Jensen et al (2006) available at http://www.msd.govt.nz/work-areas/social-research/living-standards/index.html .

Constructing measures of income poverty

Reported levels of income poverty and the direction of trends over time depend not only on changes in the economic circumstances of families and households but also on the specific measure used to produce the poverty numbers.

Key decisions in constructing a measure

The general approach to using household incomes to give headcount measures of poverty and hardship is well-established. Each household member is assigned the equivalised disposable income of their household as an indicator of their (potential) living standards and individuals in the population are ranked accordingly. One or more poverty thresholds are decided on, the numbers below these cut-offs are counted and the numbers or proportions 'in poverty' are reported.

Within this general approach there are however a range of decisions on key issues that can make a significant difference to what is reported for levels or trends in poverty numbers, and in the composition of the group identified as poor. Different measures reflect the different decisions at key points on such matters as:

- whether to use incomes before or after adjusting for housing costs (BHC or AHC)
- which equivalence scale to use, reflecting different judgments about factors such as the strength of the economies of scale as household size increases, and the relative weight to be given to children compared with adults
- where to draw thresholds (poverty lines) that are consistent with a minimum acceptable standard of living, all else equal
- how to update the thresholds from one survey to the next.

Different decisions on the first three matters generally lead to different poverty levels being reported at a given time and some difference in the reported composition of those identified as poor. However the general trends over time tend to be not greatly affected by the choices made for these three factors. This paper reports sensitivity analysis for the different choices made on these issues.

One factor that does have a significant effect on the direction of reported trends in income poverty (and the level at a given time) is the decision about how to adjust the low-income threshold(s) over time. There are two common ways in which this adjustment is made and they differ in how they assess whether an improvement has occurred in a household's income circumstances:

- one approach considers that a low-income household has improved its situation when its income rises in real terms, irrespective of what is happening to the incomes of other households - the 'fixed line' or 'constant-value (CV)' approach;
- the other uses the median household as the reference and an improvement is considered to have occurred when a poor household moves closer to the median – the 'moving line' or 'relative (REL)' approach.

These two approaches are discussed below.

Using constant-value (CV) and relative-to-contemporary-median (REL) thresholds

The constant-value (CV) or 'fixed line' approach to adjusting thresholds over time maintains the real value of a chosen poverty line by adjusting it each year with the CPI. On this approach a household's situation is considered to have improved if its income rises in real terms, irrespective of whether its rising income makes it any closer or further away from the middle or average household.

The relative-to-contemporary-median (REL) or 'moving line' approach sets the poverty line as a proportion of the median income from each survey so that the threshold changes in lockstep with the incomes of those in the middle of the income distribution. On this approach the situation of a low-income household is considered to have improved if its income gets closer to that of the median household, irrespective of whether it is better or worse off in real terms.

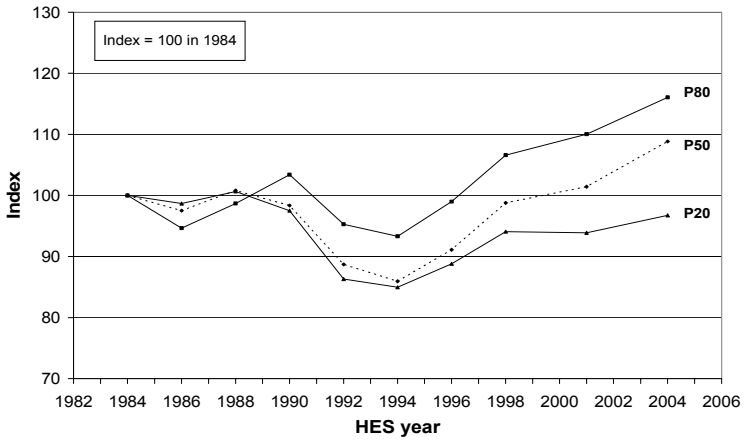
Both approaches reflect the 'relative disadvantage' concept of poverty and hardship. The REL approach is self-evidently a relative approach. The CV approach has to be benchmarked against community standards in some way to start with, then after some years of being kept at the same level in real terms it has to be re-based – again relative to some estimate of community standards.

Both approaches are used in income poverty analysis in OECD-type nations. They each have a valid story to tell about the situation of people in lower-income households.

The CV measure can be seen as the more fundamental measure in the sense that it reveals whether the incomes of low-income households are rising or falling in real terms. Whatever is happening to the incomes of the 'non-poor', if more and more people end up falling below a CV threshold, as happened in New Zealand from the late 1980s through to the mid 1990s, then in the population at large there is likely to be wide concern about increasing poverty.

In times of good economic growth with rising real wages, rising employment and declining unemployment, poverty rates measured on a CV approach can generally be expected to decline, as they have in New Zealand since the mid 1990s. This can be read off the P20 line in **Figure E.1** below, which shows how the incomes of low-income households in each year have risen in real terms since 1994, albeit at a lower rate than for P40 up. There is however a limit to how low even CV rates can fall when there is a large beneficiary population on incomes that do not (often) rise in real terms.

Figure E.1
Relative changes in real incomes (BHC) for different parts of the income distribution



The REL or 'moving line' approach can produce counter-intuitive results over time. For example, in times of good economic growth with rising real wages, rising employment and reducing unemployment, median income (and therefore the poverty lines which are simply a proportion of the median) can rise more quickly than the incomes in the lower parts of the income distribution. In these circumstances a REL measure would report increasing poverty even if those in low-income households were experiencing real income growth.

This counter-intuitive result was observed in Ireland in the 1990s: the poor became 'richer' in real terms, but because the income growth of the middle households was even greater, poverty rates grew considerably as measured using a REL threshold. This has also happened for New Zealand from 2001 to 2004, albeit on a more modest scale.

The reverse is also possible. It was observed in the Czech Republic, Hungary and Poland in the early 1990s when each of these nations experienced large falls in national income. Real incomes fell, but poverty was reported as declining as measured by a REL approach as a result of the falling median and therefore the lowering poverty thresholds. In New Zealand, real incomes for many fell in the period from 1988 to 1994. Using a threshold held fixed in real terms, the CV approach clearly showed the worsening situation for many of the poor. Using a REL approach, poverty rates stayed reasonably constant in the period as both household incomes and the thresholds set as a proportion of the median were falling. (See Section F.)

This report provides trend information using both the CV and REL approaches, but considers the CV approach as the more fundamental measure for the purposes of tracking material wellbeing using household incomes.

Two questions are sometimes raised in relation to updating thresholds over time.

- As median household incomes rise (or fall) in real terms, CV thresholds fall (rise) as a proportion of the contemporary median. How often should the base year be re-set so that the value of the CV thresholds do not move too far from the implied reference level relative to the population as a whole?
- In times of economic growth, can poverty rates ever fall when measured using a REL approach?

These are discussed below.

<u>The base year for measures using CV (or 'fixed') thresholds</u>

One of the matters to be considered when using the CV approach is that as average household incomes rise (or fall) in real terms the CV lines can become unrealistically low (or high). The question therefore arises as to how often to re-set the CV poverty lines. The decision on this depends to a large degree on the rate of change in average incomes: higher rates of change mean that the re-setting needs to occur sooner so that the thresholds do not move too far from (or get too close to) average incomes.

This report uses 1998 as the base or reference year for setting CV thresholds, adjusting back and forward using the CPI. Because of the way average incomes have fallen then risen over the last two decades, CV measures can reasonably be used over the full period from 1982 to 2004. **Figure E.2** and **Table E.2** show that, except for a period in the 1990s and in 2004, the CV threshold set at 60% of the 1998 median generally stayed within a narrow band of 2-3% of 60% of the BHC median. The stronger deviation from

the 60% line in the mid 1990s (8-9% in 1994) also seems acceptable. It shows the value of the CV approach in drawing attention to the degree to which real incomes were falling in the first half of the 1990s when many became worse off in material terms.

If the strong growth in average incomes from 2001 to 2004 continues through to the 2007 HES and beyond, then there would seem to be a good case for re-setting the reference or base year to 2007 for reporting on the 2008 HES and beyond, with the new series overlapping the old for a few years.

Figure E.2
CV threshold set at 60% of the 1998 median
expressed as a proportion of the contemporary median (BHC), 1982 to 2004

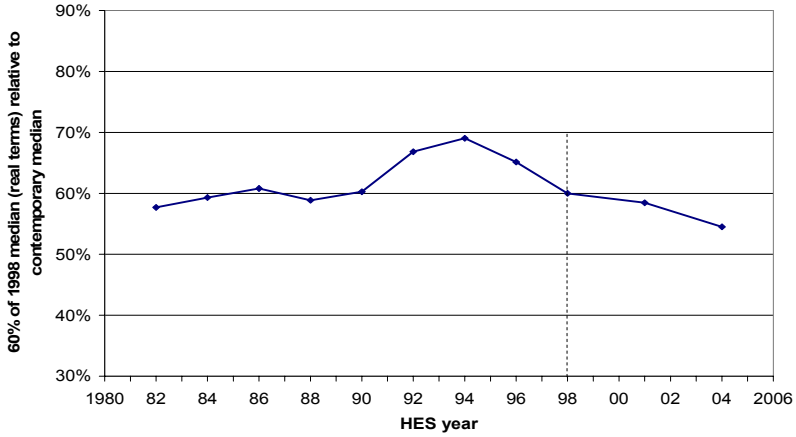


Table E.2
CV threshold set at 60% of the 1998 median
expressed as a proportion of the contemporary median (BHC), 1982 to 2004

1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
58%	59%	61%	59%	60%	67%	69%	65%	60%	58%	55%

Can poverty rates ever fall using a REL or moving threshold approach?

It has often been pointed out that measuring poverty using a REL or moving threshold approach makes it very difficult for poverty rates to decline during periods of sustained economic growth. During such periods, median household incomes are likely to rise, and unless incomes in the bottom decile or two show an equal or greater rise, then poverty rates using a REL approach will be reported as increasing because the poverty line (set as a proportion of the median) will rise more quickly than the incomes of these low-income households.

This means that to achieve a reduction in poverty using a REL approach there has to be a rate of increase in incomes for low-income households that exceeds the rate of increase at the median. In other words, to achieve REL poverty reduction requires a changing of the shape of the lower end of the income distribution such that it gets moved to the right, closer to the median.

The Working for Families (WFF) package, progressively introduced from 2004 to 2007, will put an additional $1.6b per annum mainly into low- to middle- income families once it is fully implemented in 2007. Although a little goes to families at or above the median

(which will raise the median slightly), the bulk goes to families below the median and especially to those well below it. There is therefore a good chance that the WFF intervention will sufficiently alter the shape of the bottom end of the distribution so that REL poverty rates will fall. [45]

Continued strong economic growth may mean that median incomes rise even more than do incomes at the lower end due to the WFF package. In this circumstance, the WFF package will not reduce income poverty measured on a REL basis, but rather will ensure that the poverty rates rose less than they would otherwise have done. On the other hand, poverty rates measured using a CV approach (fixed poverty line) are not affected by a rise in the median and can be expected to show a marked decline.[46]

Reporting levels and trends for older New Zealanders (aged 65+)

Section A drew attention to the pensioner spike as a distinctive feature of New Zealand's BHC income distribution. The spike is a direct consequence of (a) New Zealand having a universal New Zealand Superannuation (NZS) that is neither income nor asset tested, and (b) there being a good proportion of superannuitants with very little other income over and above NZS.

The spike has implications for reporting on income poverty both for the 65+ and more generally. In the period from 1982 to 2004 the value of NZS moved within a range of 56% to 67% of the median household income (BHC). This means that on a BHC basis income poverty rates for the 65+ in the period are reported as near to zero using a 50% threshold. Using a 60% threshold they fall from 25% in 1988 to close to zero in the mid 1990s when the median fell in real terms and NZS was above the 60% threshold, and in 2004 are at 37% as the median has risen in real terms and the NZS value is below the 60% threshold. These features (zero for 50% and very volatile for 60%) mean that a BHC approach for reporting trends in poverty rates for the 65+ is not useful. This is further discussed in Section H.

The AHC distribution still has some strong bunching but the pensioner spike is not as sharp. Furthermore, what remains of the spike is consistently above the 60% of median threshold for AHC incomes. Small shifts in the median or the threshold do not therefore have the same disproportionate and misleading effects on (trends in) poverty rates for the 65+ as they do when using BHC incomes.

This report therefore uses the AHC approach as the primary one for reporting on poverty rates for the 65+ and therefore for all subgroups so that the comparisons are on the same metric (see Appendix 4).

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[45] If poverty lines are set relative to the mean rather than relative to the median, then an intervention such as the WFF package will in its own right raise the mean (and therefore the REL poverty line) on top of any increase coming from economic growth. Thus, when using REL poverty measures based on the mean, it is next to impossible to achieve poverty reduction in times of economic growth.

[46] See Perry (2004) for a detailed account of a modelling exercise designed to estimate the impact of the WFF package on child poverty. Note that the paper was prepared on the basis of a $1.1b WFF package rather than the enhanced $1.6b package which came to be after a further $500m dimension was added to it in September 2005. The extra money went in the main to families above the 60% threshold and below the median. Some went to households around the median and this is likely to raise the median slightly. The enhancement is not therefore expected to impact on child poverty measured using a CV approach and at most a slight upward impact can be expected using a REL approach.

The low-income thresholds or poverty lines used in this report

This report uses low-income thresholds or 'poverty lines' for BHC incomes set at 50% and 60% of the median equivalised household income (BHC), using both 'moving' and 'fixed' thresholds (REL and CV). The thresholds for housing-adjusted incomes (AHC) are set at the BHC thresholds less 25% as an allowance for housing costs. The rationale for the choice of thresholds (BHC and AHC) is outlined in **Appendix 5**.

Tables E.3 and E.4 give the value of these thresholds in ordinary 2004 dollars per week for different household types. To convert to 2007 dollars (approximately), add 10%.

Table E.3
50% and 60% low-income thresholds or 'poverty lines' for various household types (BHC)
(2004 dollars, per week)

		REL ('moving')		**CV** ('fixed')	
Household type	Equiv ratio	50% of 2004 median	60% of 2004 median	50% of 1998 median in $2004	60% of 1998 median in $2004
One-person HH	1.00	220	265	200	240
SP, 1 child	1.40	310	370	280	335
SP, 2 children	1.75	385	465	350	420
SP, 3 children	2.06	455	545	415	495
Couple only	1.54	340	410	310	370
2P, 1 child	1.86	410	495	375	450
2P, 2 children	2.17	480	575	435	525
2P, 3 children	2.43	535	645	490	585
3 adults	1.98	435	525	395	475

Table E.4
50% and 60% low-income thresholds or 'poverty lines' for various household types (AHC)
(2004 dollars, per week)

		REL ('moving')		**CV** ('fixed')	
Household type	Equiv ratio	50% of 2004 median	60% of 2004 median	50% of 1998 median in $04	60% of 1998 median in $04
One-person HH	1.00	165	200	150	180
SP, 1 child	1.40	230	280	210	255
SP, 2 children	1.75	290	350	265	315
SP, 3 children	2.06	340	410	310	370
Couple only	1.54	255	305	230	280
2P, 1 child	1.86	310	370	280	335
2P, 2 children	2.17	360	430	325	390
2P, 3 children	2.43	405	485	365	440
3 adults	1.98	330	395	300	360

Note: AHC thresholds are calculated by deducting 25% from the corresponding BHC threshold as an allowance for housing costs. Each household's AHC income is then assessed against the chosen threshold.

Poverty depth and persistence

Reporting on trends in headcount poverty rates provides valuable information for assessing our progress as a nation and for informing policy development and debate. However, such information tells only a part of the incomes story. Two other insights are needed to round out the picture: trends in the depth of poverty and in the persistence of poverty for individuals over time.

Understanding poverty depth is about knowing what is happening to the incomes of those identified as poor from survey to survey. Are the poor today in the main sitting just below, say, a 50% threshold, or are they on average much poorer than their counterparts in earlier surveys, generally having incomes below, say, a 40% threshold? There are issues around the quality of the data among households with very low incomes, and these present challenges to providing robust information on poverty depth. Subject to these limitations, measures of poverty depth are discussed and trends reported at the end of the next section (Section F).

Secondly, while surveys like the HES are very valuable they give only repeated snapshot information. They cannot tell us, for example, how many of the poor in one survey are still among those counted as poor in the next. A more comprehensive picture needs information from surveys which follow the same people over many years and thus enable information on the persistence of poverty and income mobility to be reported. Statistics New Zealand's longitudinal Survey of Families, Income and Employment (SoFIE) began data collection in 2002-2003 and is now in its fifth wave of data collection, and future analysis of its data will be able to provide this extra dimension. To date, only household gross income is available, and this report requires household disposable income. The Ministry of Social Development is developing BeTSiM, a new micro-simulation tax-benefit model based on SoFIE. One of the planned capabilities of the model is production of disposable income estimates for respondents.[47]

Interpreting and reporting differences and trends in the poverty figures which follow

Four sorts of analyses and comparisons are provided regarding headline trends in Section F and in the more detailed breakdowns in later sections:

- proportions and numbers of people 'in poverty' at a point in time
- changes from one survey to the next
- longer-term trends
- relativities between subgroups and composition of those identified as 'poor'.

The findings and summaries for proportions 'in poverty' depend crucially on the threshold and measure used. Where point-in-time poverty rates are being reported, it is strongly recommended that those using the figures from this report also explicitly state what measure is being used.

Nothing should be read into small changes from one survey to the next, as sampling and non-sampling errors mean that such differences are unlikely to have any significance (see the Introduction, Section A).

[47] See Ballantyne et al (2004) for some shorter-term longitudinal analysis using the Income Supplement to the Household Labour Force Survey.

In contrast, analysis of longer-term trends and relativities between subgroups generally produce robust and uncluttered summary findings. Although there is some variation depending on the measure used, these differences are relatively easy to explain from first principles based on the conceptualisation used for the measures.

Section F
Headline trends in income poverty, 1982 - 2004

This section reports on the trends in headcount poverty rates – the numbers and proportions of individuals who are in households with incomes below selected thresholds ('poverty lines').

Information on poverty trends is presented for both the whole population and for dependent children.

The full range of poverty measures is used, as shown in **Table F.1**.

Table F.1
Poverty measures reported on in Section F

BHC				AHC			
REL ('moving line'		CV98 ('fixed line')		REL ('moving line'		CV98 ('fixed line')	
50	60	50	60	50	60	50	60
✓	✓	✓	✓	✓	✓	✓	✓

Note that the thresholds used for the AHC measures are based on the corresponding BHC measure with 25% deducted. For example, what is referred to as 'the 60% AHC threshold' is equal to the 60% BHC threshold less 25%. This threshold value is applied to the AHC household income distribution and those in households with AHC incomes below the line are counted up. The rationale for this approach is provided in **Appendix 5**.

This section reports on both BHC and AHC measures as each has an important story to tell. However, when it comes to comparing the wellbeing of various subgroups in Sections F, G and H the report recommends the AHC 'fixed line' (CV) measure as the preferred indicator. The rationale for this is provided in **Appendix 4.**

Section F also reports on poverty depth, using three indicators:

- the ratio of the number below a 50% of median line to the number below a 60% line
- mean and median poverty gap ratios
- total poverty gap.

Headline trends for whole population

Before Housing Costs (BHC)

- The standout feature of the income poverty trends (BHC) is the way in which the trends based on a 'fixed line' (CV) and those based on a 'moving line' (REL) have moved in opposite directions since the mid 1990s: from 26% to 13% for the CV measure, and from 15% to 21% for the REL measure (**Figure F.1** and **Table F.2**).

- On the REL measure, poverty is understood in terms of how low-income households are faring relative to those in the middle. REL poverty rates have risen since the mid 1990s because the incomes of households around the middle have risen in real terms whereas those at the lower end have changed very little (see Figures D.3 and D.5).

- On the CV measure, poverty rates decline when fewer households have incomes below a threshold held fixed in real terms, irrespective of what is happening elsewhere in the distribution. Using a 60% threshold, this is what happened from the mid 1990s through to 2004 as a result of improving economic conditions, improving employment rates and reducing unemployment.

- There is a slight rise in the line on the graph for the 50% CV measure from 1998 to 2004. The rise is not great enough however to support any claim that the proportion of poorer poor has risen in that period. What can be asserted is that the fall in poverty rates seen using a 60% threshold is not mimicked when using the 50% measure which shows no change from 1998 to 2004. (See **Appendix 7** for further discussion on the impact of 'noise' at the lower end of the income distribution.)

- On a longer time-scale, CV ('fixed line') poverty rates in 2004 have returned to close to what they were in the 1980s. REL poverty rates are much higher in 2004 than in the 1980s and the 1990s, reflecting the more recent widening of the gap between middle-income and low-income households.

After Housing Costs (AHC)

- The difference in trends since the mid 1990s for poverty rates based on a 'fixed line' (CV) and those based on a 'moving line' (REL) is not as marked for the AHC approach (**Figure F.2** and **Table F.3**).

- The gap between the middle and the lower end of the AHC distribution did not change significantly from the mid 1990s through to 2004, so REL trends were fairly flat. Poverty rates on a CV approach fell in the period, but not as significantly as when using BHC incomes.

- On a longer time scale, AHC poverty rates in 2004 are still significantly above what they were in the 1980s (for both REL and CV). This reflects two factors:
  - BHC incomes for low-income households showed little or no change in the period
  - housing costs (rent, rates and mortgage payments) for low-income households significantly increased as a proportion of their household incomes in the period.

Proportion of all individuals below selected thresholds (BHC)

Figure F.1
Proportion of whole population below selected thresholds (BHC): fixed line (CV) and moving line (REL) approaches compared

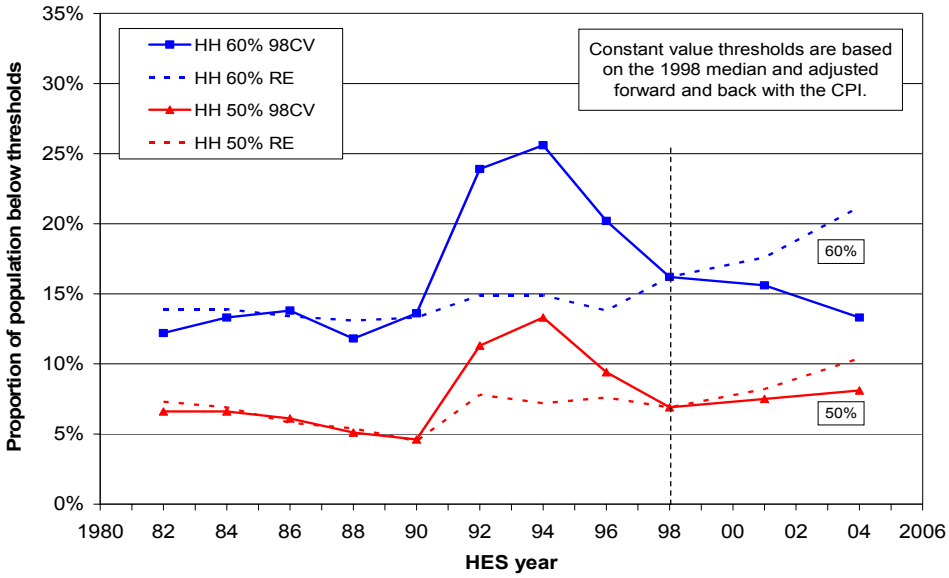


Table F.2
Percentage of whole population below selected thresholds (BHC)

Threshold type	Constant value		Relative to contemporary median		Population (million)
	50% 1998 median	60% 1998 median	50% contemp median	60% contemp median	
1982	7	12	7	14	3.03
1984	7	13	7	14	3.06
1986	6	14	6	13	3.07
1988	5	12	5	13	3.11
1990	5	14	5	13	3.15
1992	11	24	8	15	3.23
1994	13	26	7	15	3.32
1996	9	20	8	14	3.43
1998	7	16	7	16	3.54
2001	8	16	8	18	3.80
2004	8	13	10	21	3.96

Proportion of all individuals below selected thresholds (AHC)

Figure F.2
Proportion of whole population below selected thresholds (AHC): fixed line (CV) and moving line (REL) approaches compared

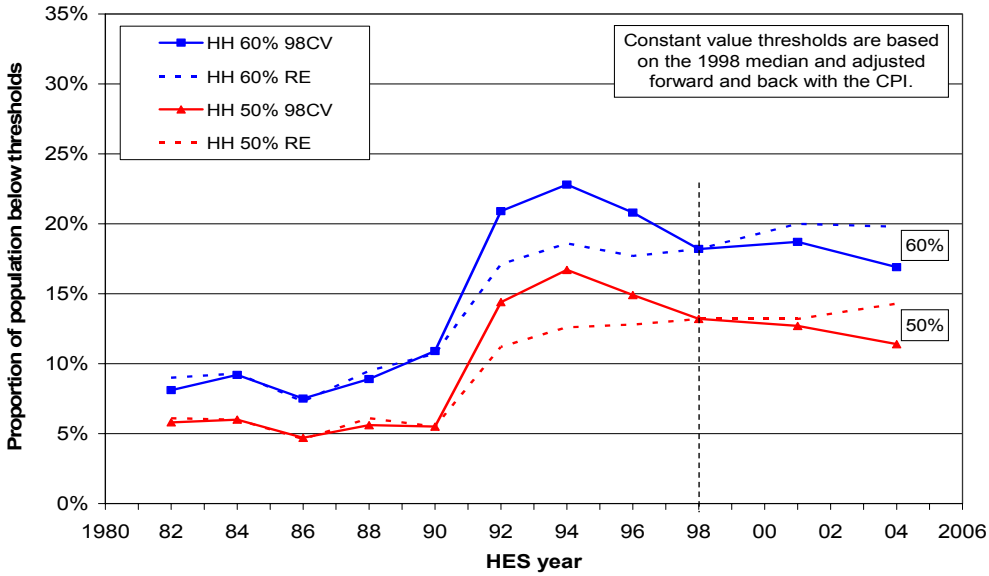


Table F.3
Percentage of whole population below selected thresholds (AHC)

Threshold type	Constant value		Relative to contemporary median		Population (million)
	50% 1998 median	60% 1998 median	50% contemp median	60% contemp median	
1982	6	8	6	9	3.03
1984	6	9	6	9	3.06
1986	5	8	5	7	3.07
1988	6	9	6	10	3.11
1990	6	11	6	11	3.15
1992	14	21	11	17	3.23
1994	17	23	13	19	3.32
1996	15	21	13	18	3.43
1998	13	18	13	18	3.54
2001	13	19	13	20	3.80
2004	11	17	14	20	3.96

Note: AHC thresholds are calculated by deducting 25% from the corresponding BHC threshold as an allowance for housing costs. Each household's AHC income is then assessed against the chosen threshold.

Headline trends for children

Before Housing Costs (BHC)

- The standout feature of the income poverty trends (BHC) is the difference in trajectories for rates based on a 'fixed line' (CV) compared with those based on a 'moving line' (REL) from 1990, and especially from 1998 (**Figure F.3**).

- On the REL measure, poverty is understood in terms of how low-income households are faring relative to those in the middle:
  - The rise in REL poverty rates from 1990 to 1992 was driven by two factors: first, the rise in unemployment, and second, the 1991 benefit cuts which decreased real incomes for beneficiaries by a greater amount than the median fell in the period.
  - From 1992 to 1998 the REL poverty rate for children fell as unemployment rates fell and the median did not increase.
  - Since 1998 the reasonably favourable economic context has been reflected in the growth in median household incomes in real terms. The incomes of low-income households with children has remained fairly static since 1998, so REL poverty rates have risen, indicating that low-income households with children are further from the median in 2004 than in 1998.

- On the CV measure, poverty rates decline when fewer households have incomes below a threshold held fixed in real terms, irrespective of what is happening elsewhere in the distribution. Using a 60% threshold, this is what happened from the mid 1990s to 1998 as a result of improving economic conditions, improving employment rates and reducing unemployment. Since 1998 child poverty rates using the 60% threshold have fallen a little, but rates have remained steady for the 50% threshold which indicates that there has been no improvement for the poorer poor.

- On a longer time-scale, CV ('fixed line') poverty rates in 2004 have returned to close to what they were in the 1980s. REL poverty rates are higher in 2004 than in the 1980s, reflecting the widening of the gap between low-income households with children and middle-income households more generally.

After Housing Costs (AHC)

- There are two main differences between the AHC trends and the BHC ones (**Figure F.4**). The first is that AHC child poverty rates in 2004 remained higher than in the 1980s. The second difference is that the rates based on 'fixed lines' (CV) fell from 1998 to 2004 rather than remaining almost static as the BHC ones did, and rates based on 'moving lines' (REL) remained much the same in the period rather than rising as the BHC ones did.

- A key factor in explaining these differences is that housing costs in 2004 on average made up a higher proportion of household expenditure for low-income households than they did in the 1980s. For example, in 1988 16% of households in the bottom income quintile spent more than 30% of their income on housing. In 2004, this figure had risen to 35% after peaking at 49% in 1994 (see MSD 2006, p66).

- The most likely explanation as to why the AHC REL trends remained static rather than rising (as in the BHC case) is that the impact of the upward movement of the

AHC median from 1998 to 2004 was countered by the income-related rental policies introduced in 1999 which reduced net housing expenditure for some low-income households.

Proportion of dependent children below selected thresholds (BHC)

Figure F.3
Proportion of children below selected thresholds (BHC): fixed line (CV) and moving line (REL) approaches compared

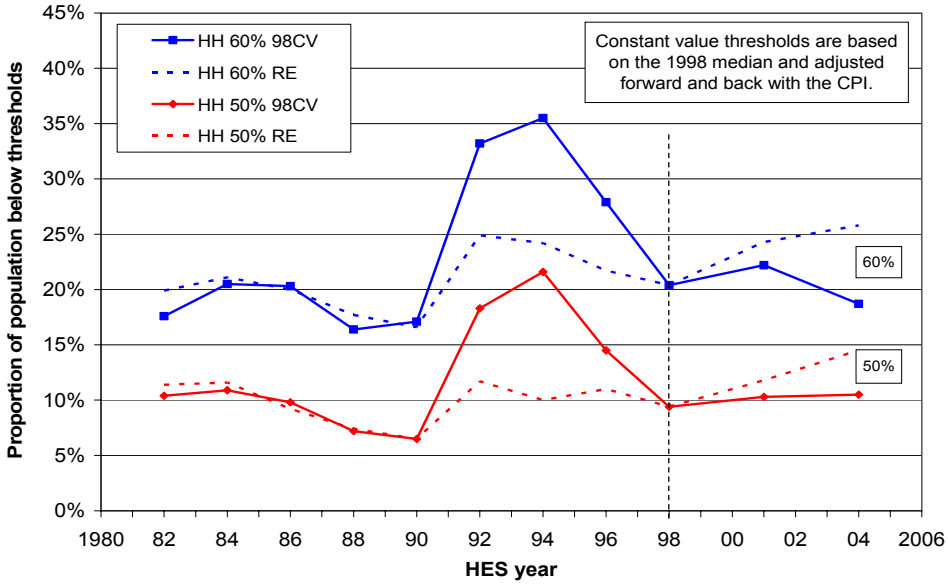


Table F.4
Percentage of children below selected thresholds (BHC)

Threshold type	Constant value		Relative to contemporary median		Total children (thousands)
	50% 1998 median	60% 1998 median	50% contemp median	60% contemp median	
1982	10	18	11	20	940
1984	11	21	12	21	930
1986	10	20	9	20	900
1988	7	16	7	18	890
1990	7	17	7	17	880
1992	18	33	12	25	880
1994	22	36	10	24	910
1996	15	28	11	22	940
1998	9	20	9	20	950
2001	10	22	12	24	1020
2004	11	19	15	26	1030

Proportion of dependent children below selected thresholds (AHC)

Figure F.4
Proportion of children below selected thresholds (AHC): fixed line (CV) and moving line (REL) approaches compared

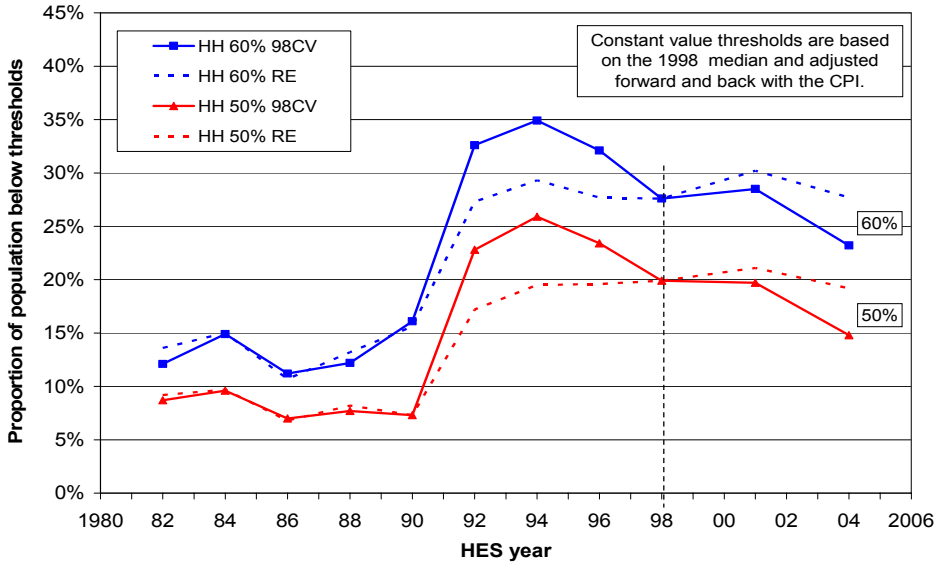


Table F.5
Percentage of children below selected thresholds (AHC)

Threshold type	Constant value		Relative to contemporary median		Total children (thousands)
	50% 1998 median	60% 1998 median	50% contemp median	60% contemp median	
1982	9	12	9	14	940
1984	10	15	10	15	930
1986	7	11	7	11	900
1988	8	12	8	13	890
1990	7	16	7	16	880
1992	23	33	17	27	880
1994	26	35	20	29	910
1996	23	32	20	28	940
1998	20	28	20	28	950
2001	20	29	21	30	1020
2004	15	23	19	28	1030

Note: AHC thresholds are calculated by deducting 25% from the corresponding BHC threshold as an allowance for housing costs. Each household's AHC income is then assessed against the chosen threshold.

Sensitivity of levels and trends to choice of poverty line

Figure F.5 and **Figure F.6** each serve the double purpose of showing how reported poverty rates at a point in time and trends over time are affected by the choice of threshold.

Figure F.5 uses BHC incomes with thresholds set relative to the contemporary median (REL approach).

Figure F.6 uses AHC incomes with thresholds held constant in real terms (CV approach).

Note that trends over time are largely unaffected by the choice of threshold, especially in the AHC case.

Figure F.5
Proportion below a range of median-based thresholds (BHC, REL)

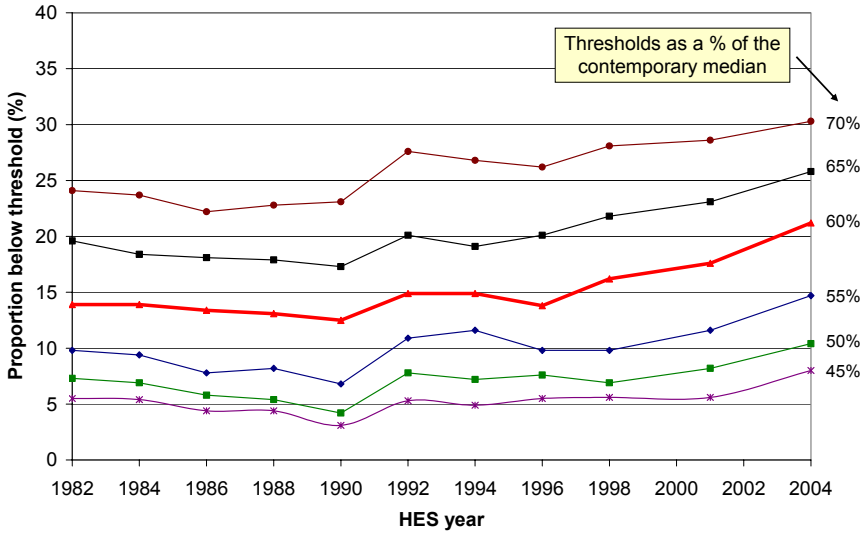
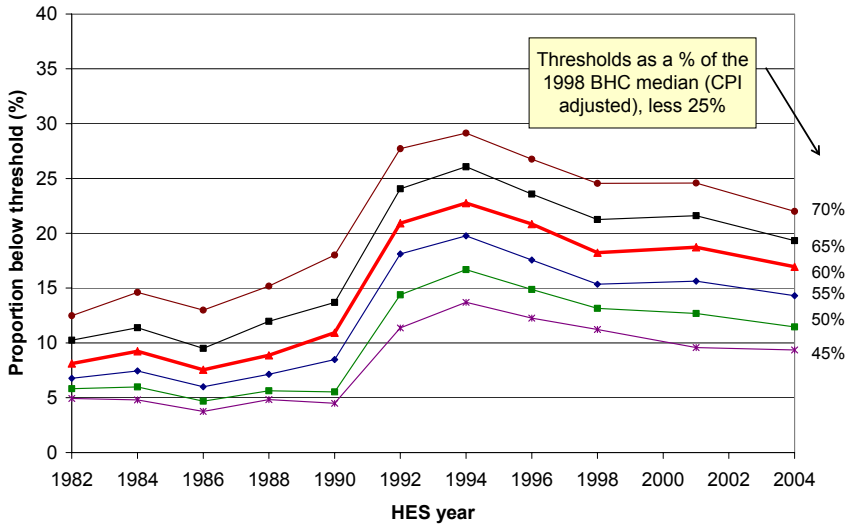


Figure F.6
Proportions below a range of constant-value thresholds (AHC, CV)



Depth of poverty

Trends in 'head count poverty rates' tell only a part of the story. It is important also to have an understanding of what is happening to the incomes of those identified as poor, that is, what is happening to trends in the depth of poverty.

This report uses three indicators of poverty depth:

- The ratio of the number below the 50% line to those below the 60% line. The higher this ratio, the greater is the depth of poverty.

- Mean and median poverty gap ratios. These compare the gap between the poverty threshold and the 'average' income of those below the threshold with the threshold itself.

- Total poverty gap – the total resources ($m) that would be needed to bring all those identified as poor to just above the poverty line through perfectly targeted tax transfers.

There are issues around the quality of the data among households with very low incomes, and these present challenges to providing robust information on poverty depth. See **Appendix 7** for a discussion on the effect of 'noise' in the bottom income decile on measures of poverty depth, and the noise-reducing adjustments to the dataset adopted for the estimates in this section.

Poverty depth: the ratio of 50% poverty rates to 60% poverty rates

Comparing the numbers below a 50% of median threshold with those below a 60% threshold gives an indication of the 'depth' of poverty. The higher the ratio, the greater the depth.

Figure F.7 shows that during the 1980s the 60% CV (fixed line) BHC poverty rate for those aged under 65 was relatively steady at around 12%. Poverty depth, however, declined, as measured by the 50% to 60% ratio. In contrast, in the 1998-2004 period, poverty depth as measured by this ratio increased while the poverty rate again remained relatively steady at 15%, pointing to increasing poverty depth.

Figure F.7
Ratio of 50% poverty rate to 60% poverty rate using 1998 CV thresholds (BHC), population under 65 years

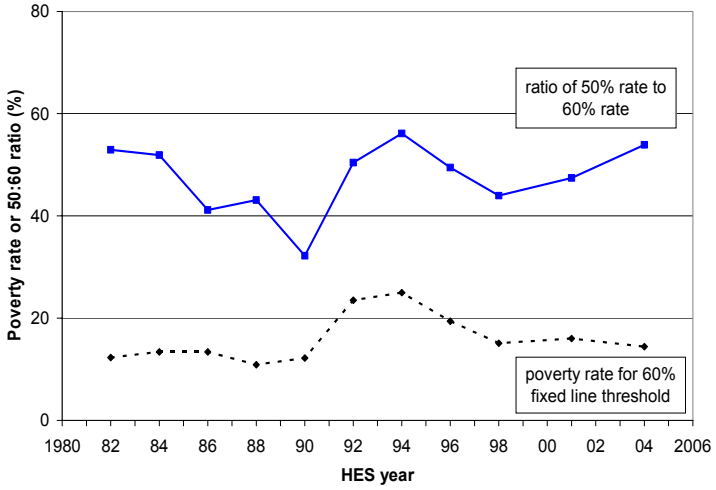
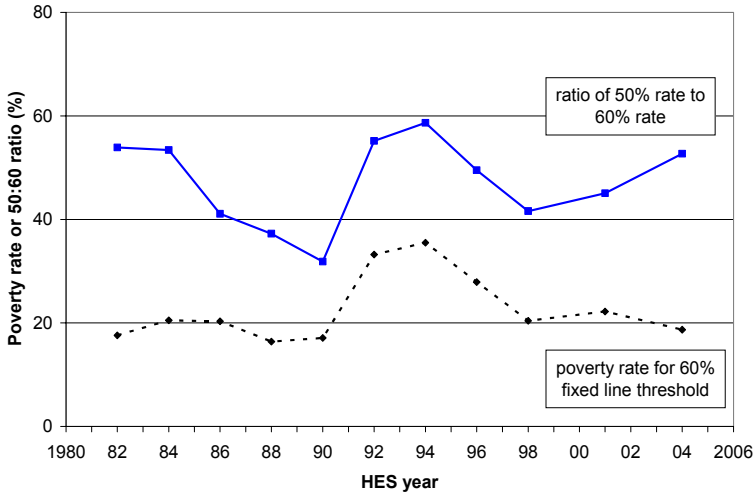


Figure F.8 shows a similar combination of trends for children, except that both the poverty rates and poverty depth are substantially higher for children than for the population as a whole.

Figure F.8
Ratio of 50% poverty rate to 60% poverty rate using 1998 CV thresholds (BHC), dependent children



Poverty depth: mean and median poverty gap ratios

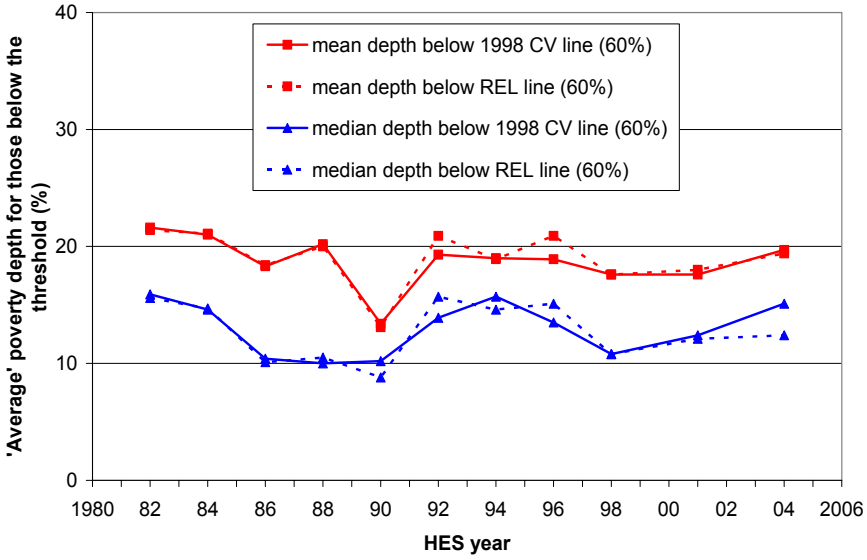
The median poverty gap ratio compares the gap between the poverty threshold and the median income of those below the threshold with the threshold itself.

The mean poverty gap ratio compares the gap between the poverty threshold and the mean income of those below the threshold with the threshold itself. It is much more affected by the incomes of households with very low incomes than is the median.

Figure F.9 shows that:

- median gap ratios are smaller than mean gap ratios, reflecting the higher concentration of households with incomes nearer the poverty lines compared with the concentration further down
- the estimates of poverty gap ratios are not greatly dependent on whether an REL ('moving line') or CV ('fixed line') approach is used
- apart from the blip in 1990,[48] the mean gap ratio has remained reasonably steady from 1982 to 2004, with perhaps some evidence of a slight decline in the period.

Figure F.9
Mean and median poverty gap ratios



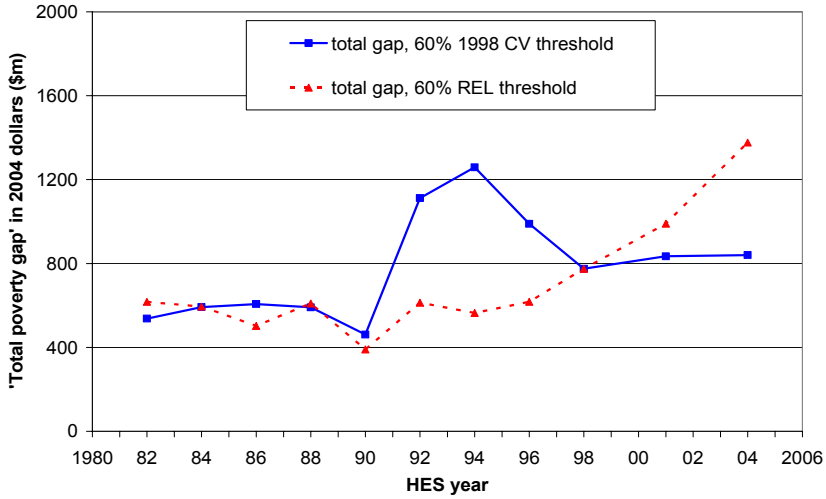
[48] It is not clear why there was such a drop in mean income for very low-income households in the 1990 HES compared with all other years.

The total poverty gap (TPG)

The total poverty gap (TPG) indicates the total resources ($m) that would be needed to bring all those identified as poor on a particular measure to just above the selected poverty line through perfectly targeted government transfers. In practice such perfect targeting is not feasible. In addition the increased government transfers are likely to have an impact on labour market and other behaviour of recipients. It is nevertheless a useful high level or first order indicator of poverty depth, taking into account the poverty rate, the mean poverty depth and the population size.

Figure F.10 shows that in 2004 it would have taken somewhere between $800m and $1400m of perfectly targeted transfers to reduce measured poverty to zero, depending on whether a 60% fixed line or 60% moving line measure were used.

Figure F.10
Total poverty gap for whole population (BHC)



Since 1990 the trajectories for the TPG have been quite different depending on whether it is calculated relative to a fixed line (CV) or a moving line (REL) threshold.

The CV-based TPG rose rapidly during the first half of the 1990s because incomes fell relative to this fixed line and there were more households to lift further to take poverty rates to zero. The reverse happened in the second half of the 1990s. Since 1998, the combination of a slight rise in mean poverty depth and a slight fall in poverty rates has led to a flat CV-based TPG line 1998-2004.

In contrast, in the first half of the 1990s the REL-based TPG remained at around the level it had been for most of the 1980s. This occurred because in the first half of the 1990s the fall in incomes at the lower end of the distribution was similar to the fall in incomes at the median. Thus, poverty rates and mean poverty depth remained relatively steady, with the net result that the REL-based TPG also remained steady.

Since 1996, median incomes (and therefore the 60% REL threshold) have risen in real terms. The REL poverty rates have risen and poorer households have to be lifted further (in real terms) to reduce REL poverty rates to zero. The REL-based TPG therefore rose rapidly from 1996 to 2004.

Section G
Trends for the whole population, 1982 - 2004, by various individual and household characteristics

This section:

- compares trends in poverty rates for subgroups within the population
- reports on the changing composition of those identified as poor on the chosen measures.

The individual and household characteristics used for subgroup analyses are:

- age of the individual
- ethnicity of the individual
- sex of the individual
- household type
- number of children in the household
- main source of income for households under 65.

Both a BHC and an AHC measure are used (**Table G.1**), although the report recommends the use of the AHC measure as the preferred indicator for comparing subgroups. The rationale for this is outlined in **Appendix 4**.

Table G.1
Poverty measures reported on in Section G for subgroups of the whole population

BHC				AHC			
REL ('moving line'		CV98 ('fixed line')		REL ('moving line'		CV98 ('fixed line')	
50	60	50	60	50	60	50	60
-	-	-	✓	-	-	-	✓

Proportion of all individuals in low-income households by age

- In 2004 there is a clear hardship gradient across the age groups, with older New Zealanders having significantly lower income poverty rates than children, and other ages falling in between (**Figure G.1**).[49]
- The position of those aged 18-24 years deteriorated relative to other groups over the period. This change is likely to reflect the higher rates of participation in tertiary education and the lower employment rates for this group in 2004 compared with the 1980s.
- Disparities between age groups are higher in 2004 than they were in the 1980s.

Figure G.1
Proportion of all individuals in low-income households by age (AHC)

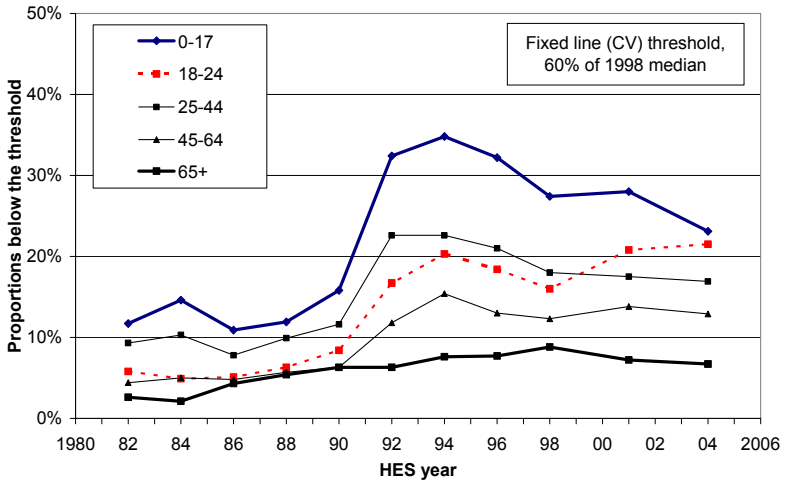


Table G.2
Proportion of all individuals in low-income households by age

A. AHC (CV threshold, 60% of 1998 BHC median, less 25%)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
0-17	12	15	11	12	16	32	35	32	27	28	23
18-24	6	5	5	6	8	17	20	18	16	21	22
25-44	9	10	8	10	12	23	23	21	18	18	17
45-64	4	5	5	6	6	12	15	13	12	14	13
65+	3	2	4	5	6	6	8	8	9	7	7
TOTAL	8	9	8	9	11	21	23	21	18	19	17

B. BHC (CV threshold, 60% of 1998 median)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
0-17	17	20	20	16	17	33	35	28	20	22	19
18-24	8	6	5	6	7	16	18	15	12	15	16
25-44	12	13	13	10	11	21	21	16	12	13	12
45-64	8	9	9	7	11	18	21	15	13	13	12
65+	12	12	18	20	25	28	31	27	25	12	5
TOTAL	12	13	14	12	14	24	26	20	16	16	13

[49] This report uses the AHC measure as the preferred indicator for comparisons between subgroups. See the Introduction (Section A) and Appendix 4 for the rationale for this.

Proportion of all individuals in low-income households by ethnicity

- The trends for those of Māori and European/Pākehā ethnicity follow expected paths with the 1991 benefit cuts and very high unemployment rates for Māori in the first half of the 1990s being reflected in very high poverty rates. Trends for the Pacific group track consistently above those for Māori (**Figure G.2**).

- The information on those of ethnicity 'Other' should be treated with caution. Not only is the 'Other' group a small sub-sample, but reported incomes of the households of around half of those in this group are very low, well below benefit level (at least for the years 1998, 2001 and 2004).[50]

Figure G.2
Proportion of all individuals in low-income households by ethnicity (AHC)

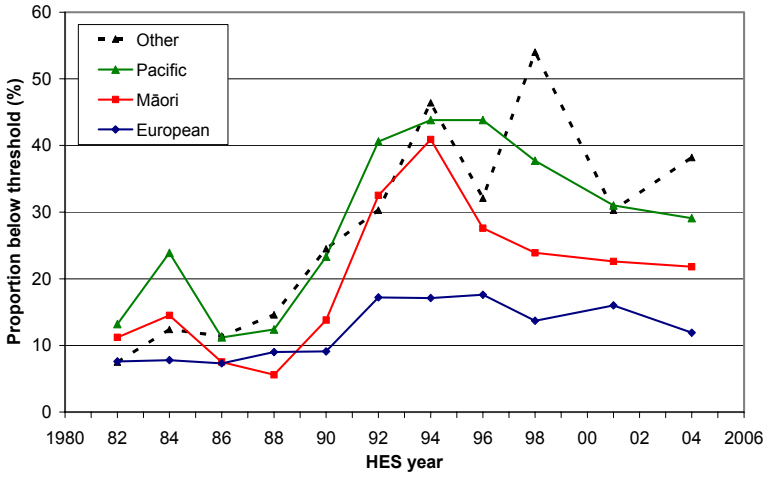


Table G.3
Proportion of all individuals in low-income households by ethnicity

A. AHC (CV threshold, 60% of 1998 BHC median, less 25%)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
European	8	8	7	9	9	17	17	18	14	16	12
Māori	11	15	8	6	14	33	41	28	24	23	22
Pacific	13	24	11	12	23	41	44	44	38	31	29
Other	*8*	*12*	*11*	*15*	*25*	*30*	*46*	*32*	*54*	*30*	*38*
TOTAL	8	9	8	9	11	21	23	21	18	19	17

B. BHC (CV threshold, 60% of 1998 median)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
European	11	11	13	11	12	20	21	18	14	14	9
Māori	21	21	17	14	17	40	44	25	18	19	16
Pacific	18	31	20	18	28	37	44	35	24	24	26
Other	*10*	*20*	*14*	*17*	*20*	*31*	*39*	*27*	*43*	*22*	*31*
TOTAL	12	13	14	12	14	24	26	20	16	16	13

[50] One of the reasons for the unusually low reported incomes in this case is that 'Other' group includes recent migrants some of whom may still be living off assets held overseas. This suggestion is consistent with the results from the Ministry's Living Standards 2004 report (see Table K.1 below).

Proportion of all individuals in low-income households by sex

- **Table G.4** shows that from 1982 to 2001, on both AHC and BHC measures, females were slightly more likely than males to be below a 60% 'fixed line' threshold. In 2004 the gap had closed.

Table G.4
Proportion of individuals aged 15+ in low-income households by sex

A. AHC (CV threshold, 60% of 1998 BHC median, less 25%)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
Female	7	7	7	8	9	18	20	18	16	17	15
Male	6	6	5	7	8	16	17	15	13	14	15
TOTAL	6	7	6	8	9	17	18	17	15	16	15

B. BHC (CV threshold, 60% of 1998 median)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
Female	11	12	13	11	13	22	24	20	16	14	11
Male	8	9	9	9	11	19	20	16	13	13	12
TOTAL	10	10	11	10	12	21	22	18	15	13	12

Proportion of all individuals in low-income households by household type

Key points

Using AHC incomes:

- Sole-parent households with dependent children have the highest income poverty rates of all household types (**Table G.5**, next page).

- Around one in three sole-parent families (EFUs) live in wider households with others. Table G.4 shows the considerably lower poverty rates for these embedded sole-parent EFUs compared with those who live in sole-parent households on their own.[51]

- Two-parent households with dependent children have a much lower poverty rate, but there are more poor individuals from this household type than from any other.

- **Table G.6** and **Figure G.3** show that while those in households with dependent children continue to make up the bulk of those classified as poor, working-age adults in households without dependent children now make up a much larger proportion of the poor than in earlier years (30% in 2004, compared with 20% in the mid 1990s and 15% in the early 1980s). This rise is driven not only by the increasing share of households without dependent children but also by the rising poverty rates for working-age households with no dependent children.

- Working-age adults in single-person households have the second highest poverty rate of all household types. In 2004, 27% were below the 60% CV threshold, up from around 10% in the 1980s. This group now makes up around 1 in 12 of those classified as poor.

- Poverty rates for 'non-family households' (unrelated adults sharing a dwelling and some of the daily costs of living) are now at around 24%, much higher than the average of 4-5% in the 1980s.

- Poverty rates for those aged 65+ have been steady at around 6-8% since 1990, and were even lower in the 1980s (Table G.2 above). However, those older New Zealanders living on their own have had a much higher proportion below the threshold than have those in couple households.

Using BHC incomes:

- **Tables G.7** and **G.8** give the same general picture as for AHC, (except, as expected, for the 65+).

[51] Some of the embedded SP EFUs are in the HH grouping 'sole-parent HHs with (any) dependent children' (along with adult children), and some are in the grouping 'Other family HHs with children'. Note that individuals retain the equivalised income of their household of origin for this analysis on the grounds that those in the wider households share to a reasonable degree in the benefits of the wider households and the economies of scale.

Table G.5
Individuals in low-income households by household and family type
60% AHC CV

Proportions below the threshold

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
In all households											
Single 65+	5	3	9	12	13	10	13	11	14	9	14
Couple 65+	1	1	2	2	3	4	5	6	5	8	3
Single under 65	8	10	10	12	15	30	30	29	22	28	27
Couple under 65	5	5	4	6	7	11	12	11	10	9	12
Sole parent with children	28	27	22	15	25	69	72	74	62	70	55
Two parent with children	10	12	9	12	12	25	26	21	19	19	16
Other family HHs with children	9	10	7	3	12	14	16	21	16	13	16
Other family HHs, adults only	2	2	2	2	4	5	6	5	6	6	12
Non-family HHs	5	3	2	7	4	14	22	15	20	24	24
Total population	8	9	8	9	11	21	23	21	18	19	17
In households with dependent children											
Total	11	13	10	11	14	29	31	29	24	25	20
- with 1 child	7	7	7	8	8	26	25	25	19	18	16
- with 2 children	10	12	9	9	13	25	28	29	27	26	16
- with 3 or more children	13	17	13	15	21	36	39	32	27	30	28
In families (EFUs) with dependent children											
SP families overall	-	-	-	13	22	57	62	63	52	61	42
- living on their own	-	-	-	17	29	79	76	77	68	76	56
- within wider HHs	-	-	-	4	9	18	24	31	22	23	20
2P families	-	-	-	11	13	24	26	22	19	19	16
In households under 65, by main source of income											
Market	6	7	6	7	9	12	14	14	12	13	12
Income-tested benefit	31	33	28	26	24	64	66	65	61	62	56

Table G.6
Individuals in low-income households by household and family type
60% AHC CV

Composition of those below the threshold, by household type
(add down columns for 100%)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
All households											
Single 65+	2	1	4	5	5	2	2	2	3	2	3
Couple 65+	1	1	2	1	2	1	2	2	2	3	1
Single under 65	4	4	5	6	6	6	6	6	5	7	8
Couple under 65	7	5	7	9	7	6	7	7	8	6	9
Sole-parent with children	13	13	14	11	16	24	22	28	25	26	19
Two-parent with children	58	64	56	60	51	48	50	43	41	41	35
Other family HHs with children	11	9	9	3	7	6	5	7	8	6	10
Other family HHs, adults only	2	2	3	2	4	3	4	3	4	4	9
Non-family HHs	3	2	2	5	3	3	4	4	5	6	5
Total population	100	100	100	100	100	100	100	100	100	100	100

Figure G.3
Composition of low-income population by household type,
AHC CV 60% threshold, 1984-2004

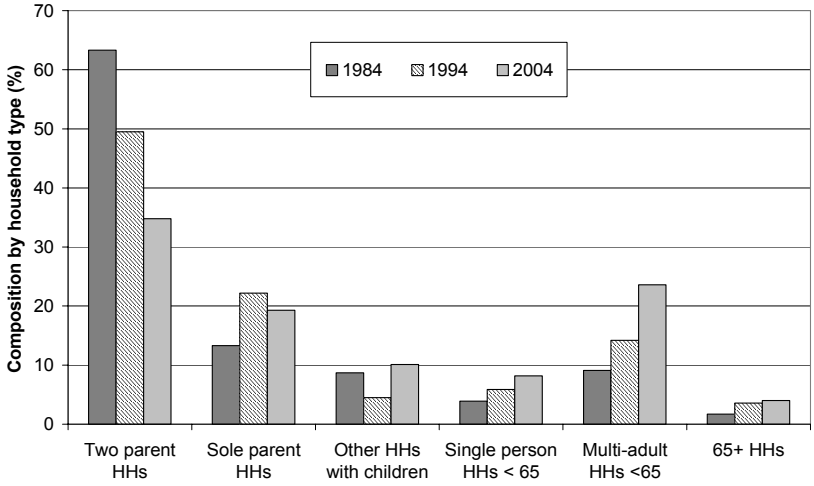


Table G.7
Individuals in low-income households by household and family type
60% BHC CV

Proportions below the threshold

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
In all households											
Single 65+ (n1)	32	29	46	44	51	46	44	38	35	15	4
Couple 65+ (n1)	2	3	2	6	10	19	28	21	22	14	7
Single under 65	15	18	20	12	15	29	31	23	21	22	20
Couple under 65	5	6	5	6	9	12	13	10	11	9	9
Sole parent with children	36	36	38	19	23	73	67	58	43	48	44
Two parent with children	14	16	16	14	14	25	26	18	14	16	12
Other family HHs with children	13	15	13	10	11	16	24	24	13	12	12
Other family HHs, adults only	4	2	3	3	5	10	7	6	6	5	10
Non-family HHs	6	3	3	5	4	7	21	13	15	15	18
Total population	12	13	14	12	14	23	26	20	16	16	13
In households with dependent children											
Total	15	17	17	14	15	29	31	24	18	19	16
- with 1 child	8	9	8	7	8	25	23	18	12	13	11
- with 2 children	14	15	13	11	13	25	28	23	18	19	12
- with 3 or more children	20	26	28	23	24	38	42	32	22	25	25
In families (EFUs) with dependent children											
SP families overall	-	-	-	18	20	60	58	51	36	42	33
- living on their own	-	-	-	24	25	78	69	64	47	50	43
- within wider HHs	-	-	-	4	9	26	27	21	14	20	18
2P families	-	-	-	14	15	27	27	19	15	16	12
In households under 65, by main source of income											
Market	9	10	10	7	9	10	13	10	9	9	9
Income-tested benefit	45	43	45	34	27	73	72	66	50	54	50

Note for table:

1 It is misleading to use the BHC trend in reported poverty rates for those aged 65+ as it leaves the impression that (a) there has been a dramatic improvement for this group since 1990 when half were 'in poverty' compared with only 4% in 2004, and that (b) compared to most other subgroups, the 65+ have vastly improved their position over recent years. This is not the case. The reason for the volatility of the BHC trend for the 65+ and the rationale for this report's position of using the AHC approach as the primary measure to compare subgroups, especially when the 65+ are involved, is outlined in **Section I** and in **Appendix 4.**

Table G.8
Individuals in low-income households by household and family type
60% BHC CV

Composition below the threshold

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
All households											
Single 65+	8	7	12	13	14	8	6	8	8	4	1
Couple 65+	1	1	1	3	5	5	7	7	8	6	4
Single under 65	4	5	5	4	5	5	6	5	5	7	8
Couple under 65	4	4	4	6	8	7	6	6	9	7	9
Sole parent with children	11	12	13	10	12	22	18	23	20	21	20
Two parent with children	56	59	54	52	46	42	44	37	34	41	35
Other family HHs with children	12	9	9	7	5	6	6	8	7	6	9
Other family HHs, adults only	3	1	2	2	3	5	4	4	5	4	9
Non-family HHs	2	1	1	2	2	2	3	3	4	4	5
Total population	100	100	100	100	100	100	100	100	100	100	100

Notes for table:

- 'Other family HHs, adults only' includes 'SP with adult children only' HHs, '2P with adult children only' HHs, and 'other family HHs without dependent children'. From the early 1990s around 12% of the population lives in this grouping.
- See n1 under Table G.7 regarding the 65+.

Section H
Trends for dependent children, 1982 - 2004, by various individual and household characteristics

This section:

- compares trends in poverty rates for subgroups of dependent children
- reports on the changing composition of those children identified as poor on the chosen measures.

The individual and household characteristics used for subgroup analyses are:

- age of the children
- ethnicity of the children
- household type
- family type
- hours of work of adults in households where there are dependent children.

Both a BHC and an AHC measure are used (**Table H.1**), although the report recommends the use of the AHC measure as the preferred indicator for comparing subgroups. The rationale for this is outlined in **Appendix 4**.

Table H.1
Poverty measures reported on in Section G for subgroups of dependent children

BHC				AHC			
REL ('moving line'		CV98 ('fixed line')		REL ('moving line'		CV98 ('fixed line')	
50	60	50	60	50	60	50	60
-	-	-	✓	-	-	-	✓

Children in workless and working households

Policy development and public debate around improving the material wellbeing of children often involve discussion about the links between child poverty rates and the labour market involvement of their parents. A final subsection therefore reports on trends in the proportion of children in workless and working households, including an international comparison, and on trends in work intensity for two-parent households with children.

Proportion of children in low-income households by age

- Poverty rates for younger children (0 to 6 years and 7 to 11 years) were consistently higher than for older children (12 to 17 years) from 1982 to 2001. In 2004 the rates for each of the three groups considered were very close. Results from the 2007 HES should indicate whether this is a one-off blip or a new state of affairs (**Figure H.1**).
- Poverty rates for younger children (under 12 years) have steadily declined since the mid 1990s, whereas the rates for older children (12 to 17 years) have plateaued since 1998 after a fall from the mid 1990s.

Figure H.1
Proportion of children in low-income households by age (AHC)

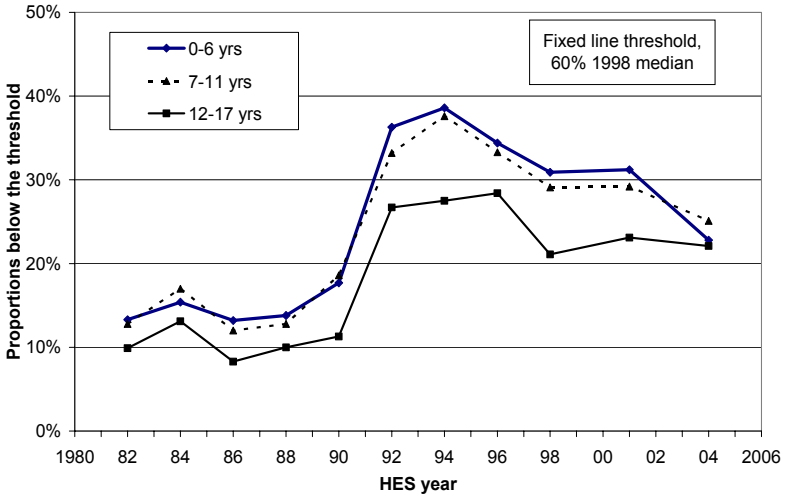


Table H.2
Proportion of children in low-income households by age

A. AHC (CV threshold, 60% of 1998 BHC median, less 25%)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
0-6 yrs	13	15	13	14	18	36	39	34	31	31	23
7-11 yrs	13	17	12	13	19	33	38	33	29	29	25
12-17 yrs	10	13	8	10	11	27	28	28	21	23	22
0-17 yrs	12	15	11	12	16	32	35	32	27	28	23

B. BHC (CV threshold, 60% of 1998 median)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
0-6 yrs	18	22	19	17	17	34	37	27	21	24	17
7-11 yrs	20	23	23	19	19	35	39	30	22	23	21
12-17 yrs	15	17	19	14	15	30	30	26	18	19	20
0-17 yrs	17	20	20	16	17	33	35	28	20	22	19

Proportion of dependent children in low-income households by ethnicity

- Because of the relatively small numbers of children of Pacific or Other ethnicity in the HES sample, it is not appropriate to report trends for the two groups separately. These two groups are therefore combined into a group labelled 'Other' in **Figure H.2** and **Table H.3** below.

- The trends for children of Māori and European/Pākehā ethnicity follow expected paths with the 1991 benefit cuts and very high unemployment rates for Māori in the first half of the 1990s being reflected in very high child poverty rates of around 50% at that time.

- Poverty rates for Māori children in 2004 had almost halved from what they were at their peak in 1994.

Figure H.2
Proportion of children in low-income households by ethnicity (AHC)

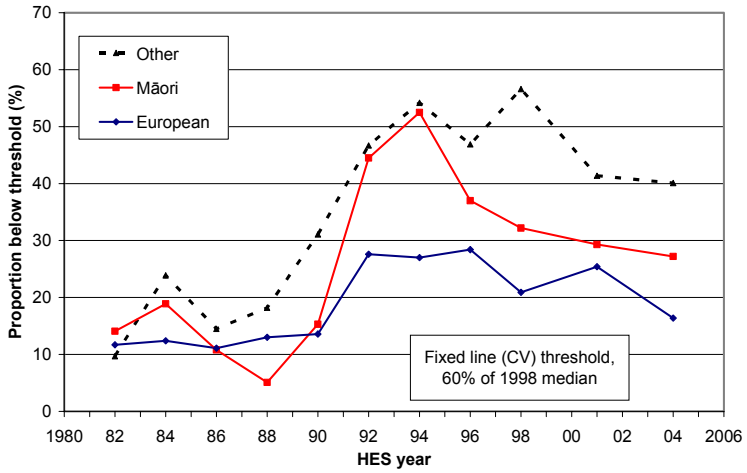


Table H.3
Proportion of children in low-income households by ethnicity

A. AHC (CV threshold, 60% of 1998 BHC median, less 25%)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
European	12	12	11	13	14	28	27	28	21	25	16
Māori	14	19	11	5	15	45	53	37	32	29	27
Other	10	24	15	18	31	47	54	47	57	41	40
TOTAL	12	15	11	12	16	33	35	32	28	29	23

B. BHC (CV threshold, 60% of 1998 median)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
European	16	17	19	14	14	28	27	25	16	20	12
Māori	24	29	24	18	17	51	57	31	21	24	23
Other	14	31	22	24	34	42	54	39	42	29	34
TOTAL	18	21	20	16	17	33	36	28	20	22	19

Proportion of children in low-income households by household type, family type and work status of adults in the household

Key points

Using AHC incomes (**Table H.4**):

- Children living in sole-parent (SP) households experience significantly higher poverty rates than those in two-parent (2P) households and other family households
- Around one in three SP families (EFUs) live in wider households. Children living in these SP EFUs have significantly lower poverty rates than those in SP EFUs living on their own because of the wider household resources available to them.
- Although poverty rates for children in SP households and families are much higher than for children in 2P households, half of all poor children come from 2P households compared to a third from SP households.
- Children in households with three or more children generally have significantly higher poverty rates than those with only one or two children. Children in these larger households make up around half of all poor children.
- From 1992 to 2004, children in workless households generally have poverty rates around three to four times higher than those in households where at least one adult is in full-time work.
- However, half of poor children currently come from households where at least one adult is in full-time work.
- For children in 'working' 2P households (where at least one parent is in full-time work), poverty rates are significant when only one parent is in full-time work (28% in 2004).

Using BHC incomes (**Table H.5**):

- a very similar picture emerges.

Table H.4
Children in low-income households by household and family type: 60% AHC CV

A. Proportions of children below the threshold

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
By household type											
Children in SP HHs	31	31	24	17	28	74	76	77	65	74	56
Children in 2P HHs	11	13	10	13	14	27	29	23	20	21	17
Children in other fam HHs	10	14	9	4	15	15	17	23	21	16	20
By family type (n1)											
Children in SP families	-	-	-	14	24	60	65	65	55	64	44
- in SP families on own	-	-	-	18	31	80	78	78	70	77	57
- within wider HHs	-	-	-	4	7	20	26	32	23	25	21
Children in 2P families	-	-	-	12	14	25	28	23	20	20	18
By number of children in HH											
1 or 2 children	10	11	9	10	12	29	30	31	27	26	18
3 or more children	14	19	14	15	22	38	41	34	29	32	30
By work status of adults (all HHs)											
- Self-employed	13	11	8	16	8	17	21	20	12	21	21
- One or more FT	10	12	10	10	14	17	20	19	17	17	14
- None FT	24	34	23	18	26	73	75	74	66	73	59
- Workless	33	38	25	18	25	78	77	78	71	78	60
By work status of adults (two parent HHs)											
- Both full-time	7	11	11	9	7	12	10	18	8	6	7
- One FT, one PT	6	9	8	7	7	10	11	11	9	19	8
- One FT, one workless	12	15	9	16	23	27	32	23	28	24	28
All children, all HHs	12	15	11	12	16	33	35	32	28	29	23

B. Composition of children below the threshold, by household and family type

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
Children by household type											
Children in SP HHs	19	19	21	18	27	36	34	42	40	40	35
Children in 2P HHs	68	71	68	79	65	59	61	50	51	53	52
Children in other fam HHs	13	11	11	4	8	6	4	7	9	6	13
Children by family type (n1)											
Children in SP families	-	-	-	19	29	39	37	45	44	44	40
- in SP families on own	-	-	-	18	26	34	33	39	38	40	33
- within wider HHs	-	-	-	2	3	4	4	6	6	4	7
Children in 2P families	-	-	-	81	71	61	64	55	56	56	60
By work status of adults (all HHs)											
- Self-employed	13	10	9	14	4	4	5	6	5	8	7
- One or more FT	59	56	62	61	57	34	36	39	40	42	45
- None FT	29	34	29	26	38	62	59	56	55	50	49
- PT only	*2*	*3*	*2*	*5*	*6*	*6*	*10*	*9*	*11*	*12*	*12*
- Workless	*27*	*31*	*27*	*21*	*32*	*56*	*49*	*47*	*44*	*38*	*37*
All children	100	100	100	100	100	100	100	100	100	100	100

Notes: 1 Family here is 'economic family unit' (see Section A for definition).
2 For each panel in Table H.4 (B) each column adds to 100%.

Table H.5
Children in low-income households by household and family type: 60% BHC CV

A. Proportions of children below the threshold

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
By household type											
Children in SP HHs	41	41	43	23	27	77	71	63	45	50	46
Children in 2P HHs	16	18	18	16	16	27	29	19	15	17	14
Children in other fam HHs	16	19	17	13	14	16	29	27	15	15	14
By family type (n1)											
Children in SP families	-	-	-	20	22	63	61	54	37	45	36
- in SP families on own	-	-	-	28	28	79	72	67	48	52	45
- within wider HHs	-	-	-	4	9	29	29	23	14	23	19
Children in 2P families	-	-	-	16	16	25	29	20	16	17	14
By work status of adults (all HHs)											
- Self-employed	20	15	20	19	14	25	25	21	12	20	14
- One or more FT	14	16	17	12	14	15	20	14	12	12	11
- None FT	33	46	39	31	28	79	75	68	49	60	50
- Workless	45	51	43	33	28	81	77	71	55	64	49
By work status of adults (two parent HHs)											
- Both full-time	7	13	15	8	8	9	7	12	4	6	4
- One FT, one PT	8	10	14	6	6	9	14	7	9	14	6
- One FT, one workless	19	22	19	21	23	24	31	19	20	16	25
All children, all HHs	18	21	20	16	17	33	36	28	20	22	19

B. Composition of children below the threshold, by household and family type

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
Children by household type											
Children in SP HHs	17	18	20	18	24	37	32	40	38	35	35
Children in 2P HHs	69	71	69	72	69	57	61	50	53	57	53
Children in other fam HHs	14	11	11	10	7	6	7	10	9	8	12
Children by family type (n1)											
Children in SP families	-	-	-	21	25	40	34	43	40	39	40
- in SP families on own	-	-	-	20	22	34	30	38	35	34	32
- within wider HHs	-	-	-	1	3	6	4	5	5	5	8
Children in 2P families	-	-	-	79	75	60	66	57	60	61	60
By work status of adults (all HHs)											
- Self-employed	14	10	12	12	7	5	6	8	6	10	5
- One or more FT	58	56	61	54	54	29	36	32	38	38	43
- None FT	28	34	27	33	40	65	58	60	56	52	51
- PT only	*3*	*4*	*2*	*4*	*5*	*8*	*10*	*11*	*9*	*12*	*13*
- Workless	*25*	*30*	*25*	*29*	*35*	*57*	*48*	*49*	*47*	*40*	*38*
All children	100	100	100	100	100	100	100	100	100	100	100

Notes: 1 Family here is 'economic family unit' (see Section A for definition).

2 For each panel in Table H.5 (B) each column adds to 100%.

Children in workless and working households

Key points

- In 2004, 14% of children lived in workless households, down from 23% in 1992 (**Table H.6**).
- In 2004, 19% of children lived in households where there was no full-time worker, down from 28% in 1992.
- **Table H.7** compares New Zealand with EU countries on the proportion of children in workless households. In 2004, New Zealand was at the high end of the table with a rate of 14%, lower than the UK (17%) and similar to Belgium and Hungary (13%).

Table H.6
Proportion of children in 'workless' households (% of all children)

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
Workless HHs (HES)	10	12	12	15	21	23	22	19	17	14	14
HHs with no FT worker (HES)	15	15	15	18	24	28	27	24	23	20	19

Table H.7
International comparisons of the proportion of children living in workless households (%): EU data is for 2006, NZ data is for 2004

United Kingdom	17	Netherlands	7
New Zealand	**14**	Austria	6
Belgium	13	Finland	6
Hungary	13	Denmark	6
Ireland	12	Italy	6
Poland	11	Spain	6
Germany	11	Portugal	4
France	10	Greece	5
Czech Republic	9	Luxembourg	3

Sources: Table 4.3 in Eurostat (2007). Children are those aged under 18.

- **Figure H.3** and the associated **Table H.8** show the trend to increasing work intensity among two parent households where at least one is in full-time work. The option of one partner in full-time paid employment and one not in paid employment ('workless') was the dominant pattern in the early 1980s. In 2004, it is the least common arrangement – the most common arrangement for two parent working households where there are dependent children is for both parents to be employed full-time.

Figure H.3
Proportion of two-parent households where there is at least one FT adult worker

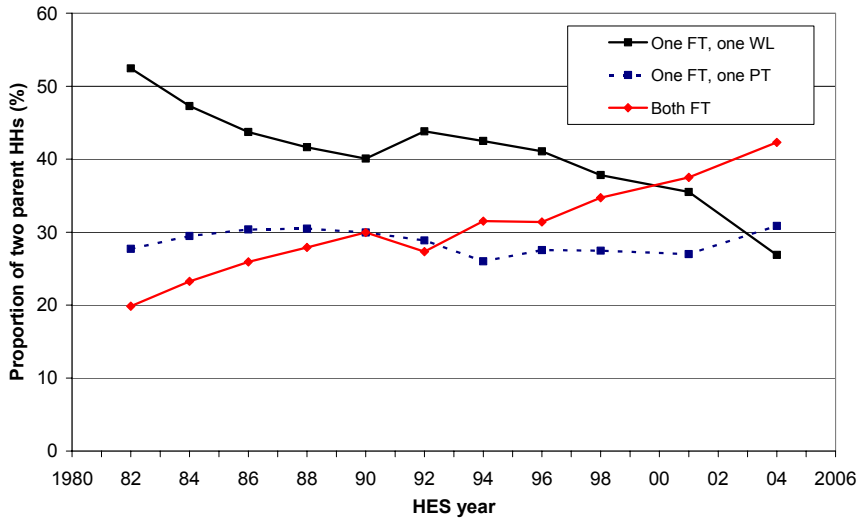


Table H.8
Proportion of two-parent households where there is at least one FT adult worker

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
One FT, one WL	52	47	43	42	40	44	43	41	38	36	27
One FT, one PT	28	30	30	31	30	29	26	28	28	27	31
Both FT	20	23	26	28	30	27	32	31	35	38	42

Table H.9 repeats the analysis reported in Table H.8 from the perspective of the proportion of children in the different household types rather than from the perspective of the proportion of two parent households. The same trends emerge.

Table H.9
Proportion of children in 2P HHs where there is at least one FT adult worker

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
One FT, one WL	54	47	46	43	42	46	46	42	41	38	30
One FT, one PT	28	30	30	30	32	29	26	27	29	30	33
Both FT	19	23	25	27	26	25	29	30	30	33	34

Section I
Trends in income poverty 1982 - 2004: older New Zealanders

Section A drew attention to the pensioner as a distinctive feature of New Zealand's income distribution. The spike is a direct consequence of (a) New Zealand having a universal New Zealand Superannuation (NZS) that is neither income nor asset tested, and (b) there being a good proportion of superannuitants with very little other income over and above NZS.

The spike has implications for reporting on income poverty for the 65+ and for comparisons of subgroups within the population as a whole. **Figure I.1** illustrates the problem using HES 2004 data, showing the sudden rise in poverty rates for the 65+ at around 56% of the 2004 median which is the level of NZS for that period. Poverty rates for the 65+ are close to zero when a 50% threshold is used, but 37% using a 60% threshold. Other age groups have a much smoother increase in poverty rates as the threshold rises.

Figure I.1
Sensitivity of income poverty rates for the 65+ to the threshold used: BHC incomes, 2004

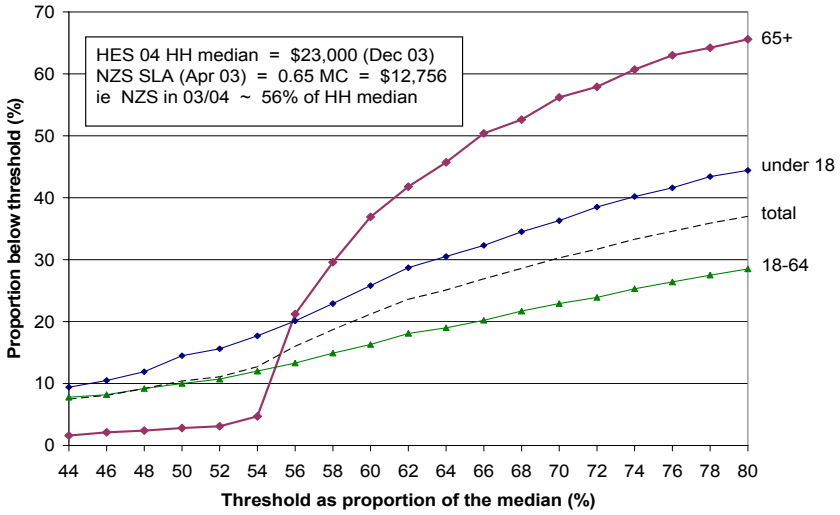


Table I.1 shows how the NZS rate tracks relative to the median equivalised disposable household income (BHC) in the period from 1982 to 2004, ranging from 56% to 67%. This means that for all the period REL income poverty rates for the 65+ are reported as near to zero using a 50% threshold. Using a 60% threshold they fell from 25% in 1988 to close to zero in the mid-1990s when the median fell in real terms and NZS was above the 60% threshold, and in 2004 are at 37% as the median has risen in real terms and the NZS value has fallen significantly below the 60% threshold (to 56%).

Table I.1
NZS relative to the median equivalised BHC household income median (%)

1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
54	63	57	57	60	65	67	62	58	58	56

The large variations in reported poverty rates for the 65+ group over time (using BHC incomes) can leave the misleading impression that there are significant changes in material wellbeing occurring for this group, when in fact there are none. In addition, the same issue can lead to similarly misleading comparisons with the relative wellbeing of other age groups.

The AHC distribution still has some strong bunching but the pensioner spike is not as sharp. Furthermore, what remains of the spike is consistently above the 60% of median threshold for AHC incomes. Small shifts in the median or the threshold do not therefore have the same disproportionate and misleading effects on (trends in) poverty rates for the 65+ as they do when using BHC incomes. This is shown for 2004 in **Figure I.2** below.

Figure I.2
Sensitivity of income poverty rates for the 65+ to the threshold used: AHC incomes, 2004

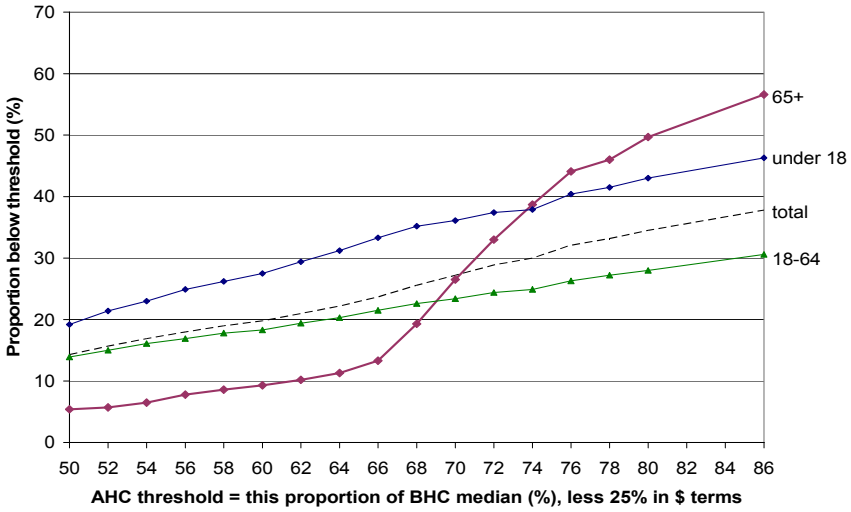


Table I.2 shows that the proportion of older New Zealanders below a 60% AHC threshold (CV) has remained consistently lower than the population as a whole and reasonably low in its own right over the 1982-2004 period. Those living on their own generally have considerably higher proportions below the threshold than do those in couples.

Table I.2
Proportions of older New Zealanders (aged 65+) in low-income households, by HH type: AHC CV 60% measure

	1982	1984	1986	1988	1990	1992	1994	1996	1998	2001	2004
All 65+	3	2	4	5	6	6	8	8	9	7	7
Single 65+	5	3	9	12	13	10	13	11	14	9	14
Couple 65+	1	1	2	2	3	4	5	6	5	8	3
Total population	8	9	8	9	11	21	23	21	18	19	17

NZS relative to average wages and median household income

For a very large proportion of New Zealanders aged 65 and over, NZS provides the bulk of their income. For example, for the lower 6 deciles, around 95% of gross income

comes from government sources (NZS, Disability Allowance, etc). Even for those in decile 6 itself there is on average only $50 pw extra gross income above NZS and other direct assistance.

In assessing the relative material wellbeing of older New Zealanders it is therefore useful to know how NZS tracks relative to average wages and to median household incomes.

Figure I.3 shows that the value of NZS (and its predecessors) has remained reasonably steady in real terms from the 1980s through to 2004, whereas there have been considerable fluctuations in average earnings and median household incomes in the period. In Figure I.3, average earnings are net average ordinary time weekly earnings (NAOTWE), and median incomes are median equivalised household disposable incomes.

Figure I.3
Trends in average earnings, median household incomes and NZS (in 2004 dollars)

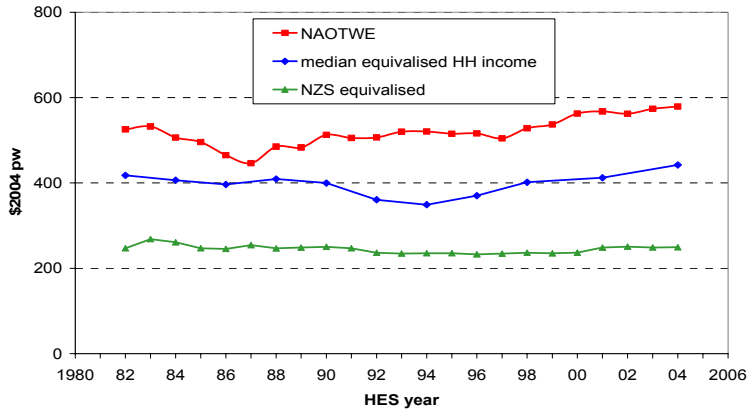
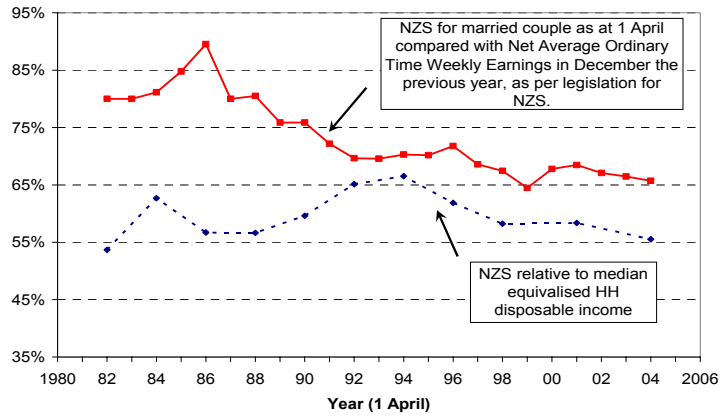


Figure I.4 shows the trends in NZS relative to average earnings and median household income. This is simply some of the information from Figure H.3 in a different format. In 2004 the NZS married couple rate was close to the 65% floor relative to average earnings.

Figure I.4
NZS relative to average earnings and median household incomes



Section J
International comparisons for income poverty

International comparisons of income inequality have already been reported towards the end of Section D, and on children in workless households at the end of Section H. This section provides some international comparisons for income poverty levels and trends.

The information for this section comes in the main from BHC incomes reports provided to the OECD by national experts using national datasets and based on common assumptions and definitions.[52] The OECD analysis for New Zealand uses information supplied by Statistics New Zealand based on the HES, so the New Zealand figures can be updated to 2004. However the latest comparisons across the OECD as a whole are available only to around 2000.

The only significant difference between the OECD assumptions and definitions and those used in the rest of this report for BHC analysis is that the OECD work uses an equivalence scale that treats children as costing the same as adults. This difference generally has only a small to modest impact on the level of various indicators at a given time, and limited impact on trend analysis over time. [53]

The OECD poverty indicator uses a relative-to-contemporary-median approach (REL) with the primary focus on trends using the 50% threshold.

Some of the information comes from Eurostat which uses a 60% BHC threshold for its primary measure. The equivalence scale used is almost identical to the Revised Jensen Scale used in this report.

Cautions when making comparisons between poverty figures

International league tables such as those produced by the OECD, Eurostat and UNICEF have a popular appeal, but need to be treated with considerable caution for several reasons:

- those identified as 'poor' in two countries which have the same or similar reported income poverty rates may have quite different actual day-to-day living standards (cf Denmark and the Czech Republic in **Table J.1**)
- poverty rates for countries can bunch together, and small differences in rates can mean very large differences in rankings – comparison with the median is therefore often more useful than the ranking itself
- some countries' reported rates can change significantly from year to year on a relative-to-contemporary-median (REL) approach, thus making the choice of comparison years crucial when reporting rankings.[54]

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[52] The main syntheses of the national reports are found in Förster and Mira d'Ercole (2005) and in OECD (2005). The New Zealand data and analysis was provided to the OECD by Statistics New Zealand. The New Zealand figures used in this section are generally a little different from those in Förster and Mira d'Ercole (2005) as they draw on a slightly revised set more recently provided to the OECD by Statistics New Zealand.

[53] See Appendix 3 for comparisons of trends using the different equivalence scales referred to in this section.

[54] Because international league tables almost always use 'moving line' (REL) thresholds, the income poverty rate for a country whose median income is falling in real terms can show a decrease in poverty, whereas a

Both Eurostat and the OECD are taking steps to develop international comparisons of material hardship based on non-monetary indicators.[55] Although these too have their challenges and limitations, they have the potential to provide another useful perspective to set alongside the comparisons based on income.

Population poverty using a 50% BHC threshold

- On the OECD 50% REL measure, the average New Zealand rate through the mid 1990s (1994 to 1996) was 9%, which was at the OECD median.
- By the time of the 2001 HES the rate was 10%. **Table J.1** shows that this still places New Zealand in the middle of the OECD ranking, with a rate similar to Canada, Poland and Germany (10%), Australia and the United Kingdom (11%), and well below the United States (17%). Denmark and the Czech Republic have the lowest proportion with incomes below the 50% line (4%).
- By 2004, the New Zealand rate was 11%.

Table J.1
Population poverty rates in the OECD (%) c 2000:
50% of median threshold (BHC)

Mexico	20	Germany	10
United States	17	OECD -25	10
Turkey	16	Austria	9
Ireland	15	Hungary	8
Japan	15	France	7
Portugal	14	Netherlands	6
Greece	14	Switzerland	7
Italy	13	Luxembourg	6
United Kingdom	11	Norway	6
Australia	11	Finland	6
New Zealand	**10**	Sweden	5
Poland	10	Czech Republic	4
Canada	10	Denmark	4

Source: Förster and Mira d'Ercole (2005)

country whose median incomes are rising through strong economic growth can show a rise in poverty, even though in both cases the incomes of those with low incomes may well remain the same in real terms.

[55] See Boarini and Mira d'Ercole (2006) for OECD developments and Eurostat (2005) for developments based on the EU Statistics on Income and Living Conditions (EU-SILC) project.

Population poverty using a 60% BHC threshold

- **Table J.2** shows New Zealand's relative position among EU countries, Canada, Australia and the United States, using a 60% BHC threshold. The New Zealand figure is based on the 2004 HES and uses the same equivalence scale as the Eurostat analysis.
- For comparison purposes the figures for the US, Canada and Australia (from the LIS database) should be reduced by one or two percentage points as the equivalence scale used in the LIS analysis gives population poverty rates around that much higher than the one used in the Eurostat analysis.
- Using a 60% threshold New Zealand's rate (21%) is above the EU average (16%).
- New Zealand's less favourable relative position using the 60% threshold compared with its position using a 50% threshold (Table J.1) shows that compared to most of the other countries New Zealand's household income distribution is more dense in the 50% to 60% of median range.

Table J.2
Population poverty rates in the EU, US, Canada and Australia (%) c 2003: 60% of median threshold (BHC)

United States	24	EU -25	16
Ireland	21	Austria	13
New Zealand	**21**	Hungary	12
Portugal	21	Netherlands	12
Spain	20	Belgium	15
Australia	20	France	14
Greece	20	Sweden	11
Italy	19	Finland	11
Canada	18	Luxembourg	11
United Kingdom	18	Denmark	11
Poland	17	Norway	11
Germany	16	Czech	8

Sources: Most of the data in the table is drawn from Table 4.1 in Eurostat (2007). The rates for the United States, Canada and Australia are drawn from the LIS Key Figures database at www.lisproject.org/keyfigures.htm accessed on 26 February 2007.

Child poverty comparisons using a 50% BHC threshold[56]

- On the OECD 50% REL measure, the average New Zealand child poverty rate through the mid-1990s (1994 to 1996) was 12.5%.
- By the time of the 2001 HES the rate was 14.6%. **Table J.3** shows that this places New Zealand 18th out of 25 OECD countries for child poverty, with a rate just above the OECD median (13.1%) and similar to that of Canada (13.6%), Japan (14.3%), Poland (14.5%), Portugal (15.6%), Ireland and Italy (15.7%), a little below the United Kingdom (16.2%) and well below the United States (21.7%). Denmark, Finland, Norway and Sweden have the lowest rates, all being in the 2% to 4% range.
- By 2004, the New Zealand rate was 15.0%.

Table J.3
Child poverty rates in the OECD (%) c 2000:
50% of median threshold (BHC)

Mexico	25	Germany	13
United States	22	Greece	12
Turkey	21	Australia	12
United Kingdom	16	OECD-25 average	12
Ireland	16	Netherlands	9
Italy	16	Luxembourg	8
Portugal	16	France	7
New Zealand	**15**	Czech Republic	7
Poland	15	Switzerland	7
Japan	14	Sweden	4
Canada	14	Norway	4
Austria	13	Finland	3
Hungary	13	Denmark	2

Source: Förster and Mira d'Ercole (2005)

[56] In this subsection, some of the poverty rates are given to one decimal place rather than to the nearest whole number as is the practice elsewhere in the report. This is done to assist readers to more easily relate the figures to those published by the OECD, UNICEF and others. The implied precision is spurious and should not be taken seriously.

Child poverty comparisons using a 60% BHC threshold

- **Table J.4** shows New Zealand's relative position among EU countries, Canada, Australia and the United States, using a 60% BHC threshold. The New Zealand figure is based on the 2004 HES and uses the same equivalence scale as the EUROSTAT analysis.
- For comparison purposes the figures for the US, Canada and Australia (from the LIS database) should be reduced by one or two percentage points as the equivalence scale used in the LIS analysis gives population poverty rates around that much higher than the one used in the EUROSTAT analysis.
- Using a 60% threshold New Zealand's rate (26%) is above the EU average (20%).
- New Zealand's less favourable relative position using the 60% threshold compared with its position using a 50% threshold (Table J.3) shows that compared to most of the other countries New Zealand's income distribution for households with children is more dense in the 50% to 60% of median range.

Table J.4
Child poverty rates in the EU, US, Canada and Australia (%) c 2003:
60% of median threshold (BHC)

United States	30	EU-25 average	20
Italy	26	Luxembourg	18
New Zealand	**26**	Netherlands	18
Spain	24	Hungary	17
Portugal	23	Belgium	17
Poland	23	Austria	15
Canada	23	Czech	15
Ireland	22	France	14
United Kingdom	22	Sweden	11
Australia	22	Finland	10
Greece	20	Denmark	9
Germany	20	Norway	8

Sources: Most of the data in the table is drawn from Table 4.1 in Eurostat (2007). Children are those aged under 16. The rates for the United States, Canada and Australia are drawn from the LIS Key Figures database at www.lisproject.org/keyfigures.htm accessed on 26 February 2007.

Estimated impact of the Working for Families (WFF) package on child poverty rates and international child poverty rankings

- In 2004 the Ministry of Social Development prepared estimates of the likely impact of the WFF package on child poverty rates once the full package was implemented in the 2007-08 year.
- The estimates were produced from output from the Treasury's tax-benefit micro-simulation model (TAXMOD) which was also used for costing the package. The modelling work was based on the 2001 HES data.[57]
- The estimates are that by 2008 the poverty reduction impact of the whole WFF package at a 50% BHC threshold will be around 70%, and at the higher 60% threshold the proportionate reduction can be expected to be around 30%.
- If these reductions are achieved and there is no substantial change for other countries in the meantime, then by 2008 New Zealand's child poverty rate using a 50% of median threshold will be well into the top half of the OECD table.
- The main factor that could threaten the estimates of the proportionate reductions is a rise in median incomes that is greater than that assumed in the modelling parameters, as a result, for example, of strong economic growth. In these circumstances it is possible for median incomes (and therefore the REL poverty lines) to rise even more than incomes at the lower end rise due to the WFF package. In these circumstances the WFF package will not reduce income poverty measured on a REL basis, but rather will ensure that the poverty rates rise much less than they would otherwise have done.
- On the other hand, poverty rates measured using a CV approach (fixed poverty line) are not affected by a rise in the median and can be expected to show a marked decline, irrespective of what happens to the median.
- Note that the update of this report in 2008 (using the 2007 HES) will reflect:
    - all the impact of the October 2004 and April 2005 WFF changes
    - some of the impact of the April 2006 changes
    - almost none of the impact of the April 2007 changes.[58]

[57] See Perry (2004) for a detailed account of a modelling exercise designed to estimate the impact of the WFF package on child poverty. Note that the paper was prepared on the basis of a $1.1b WFF package rather than the enhanced $1.6b package which came to be after a further $500m dimension was added to it in September 2005. This extra money went in the main to families above the 60% threshold and below the median. Some went to households around the median and this is likely to raise the median slightly. The enhancement will not therefore impact on child poverty measured using a CV approach and at most a slight upward impact can be expected using a REL approach. The modelling was for an estimate of a first-round impact only. The model did not include the impact of any behavioural response to the WFF package, such as might arise from the 'making work pay' aspect.

[58] Interviews for the 2007 HES are carried out from July 2006 to June 2007. The survey collects incomes information for the 12 months prior to interview date. This means that the impact of the In-Work Tax Credit introduced in April 2006 will be picked up fully for only the quarter of families interviewed from April to June 2007, and only in part for the other three-quarters of families. The April 2007 increases to the Family Tax Credit will not be picked up by the 2007 HES for a full year for any family. The 2008 HES will pick up most of the WFF impact.

Older New Zealanders

- Using the 50% of median threshold, **Table J.5** shows that in around 2000 New Zealand had the lowest poverty rate in the OECD for those aged 65+. The rate was close to zero because the 50% threshold was below the value of NZS. In its latest country report for New Zealand, the OECD notes (in a rather simplistic way) that New Zealand has "successfully erased poverty among the elderly", basing its assessment on the information in Table J.5.[59]

Table J.5
65+ poverty rates in the OECD (%) c 2000:
50% of median threshold (BHC)

Ireland	36	France	11
Portugal	29	Finland	10
Mexico	28	Austria	9
United States	25	Germany	9
Greece	24	Sweden	8
Australia	24	Denmark	6
Japan	21	Hungary	5
Turkey	16	Poland	4
Italy	15	Canada	4
United Kingdom	14	Netherlands	2
OECD-25	13	Czech Republic	2
Norway	12	**New Zealand**	**<1**

Source: Förster and Mira d'Ercole (2005)

- A more comprehensive perspective requires comparisons at other thresholds too. **Table J.6** compares poverty rates using a 60% threshold for EU countries and New Zealand. New Zealand is now at the opposite end of the league table, reporting the highest poverty rate for those aged 65+.[60]

Table J.6
65+ poverty rates in the EU and New Zealand (%) c 2003:
60% of median threshold (BHC)

New Zealand	**34**	France	12
Ireland	22	Poland	11
Portugal	19	Austria	10
Greece	19	Hungary	9
Spain	17	Finland	8
United Kingdom	16	Netherlands	7
Italy	14	Czech Republic	5
Belgium	13	Sweden	5
EU-25 average	13	Denmark	4
Germany	12	Norway	4

Source: Table 4.1 in Eurostat (2007).

[59] OECD (2007:11).

[60] OECD figures for the 65+ are not available using a 60% threshold. However the LIS uses a methodology very close to the OECD approach and figures are available from the LIS for those aged 65+. On this approach New Zealand is still at the top end of the scale with a rate of 42%, behind only Ireland on 54% and Australia on 45%.

- The great difference between the rankings in Tables J.5 and J.6 is simply a reflection of the pensioner spike in New Zealand's income distribution – already discussed, for example, in the previous section (see Figure I.1). In 2004, NZS rates were above a 50% threshold but below a 60% threshold, and many older New Zealanders rely on NZS plus only a little more for their income.
- For the assessment of the relative material wellbeing of older New Zealanders this report takes the view that an AHC approach is more useful, as discussed in Sections A and I and in Appendix 4.

Section K
Income-based poverty and hardship findings: comparison with Living Standards research

In this report poverty is understood as *exclusion from the minimum acceptable way of life in one's own society because of inadequate resources*. The definition is explicitly relative, and includes both resource and outcome elements.

This paper takes the view that both approaches have their place and that debate about primacy is not helpful as poverty and hardship (even understood more narrowly as being about the 'material core') are multi-dimensional and require a range of indicators to better describe their many aspects, and to help understand their causes and longer-term impacts. Each approach has its limitations and strengths. Each provides valuable information for policy development and evaluation. This is not an indecisive dollar-each-way position but one that is deliberately taken both on conceptual grounds and also on empirical grounds.

For example, it is well-established that there is a significant mismatch (regarding those classified as 'poor') between poverty measured using a current income approach and poverty measured using deprivation indices or other measures of unacceptably low living standards. The overlap is only of the order of 50%.[61] This is hardly surprising given that day-to-day living standards are determined by much more than current income (see Figure A.1 in the Introduction).

This section shows that that despite the mismatch and the different conceptualisations both the incomes and the living standards approaches generally identify the same population subgroups as being in hardship at a point in time.[62]

Comparing the results for the two approaches

In 2004, 17% of the population were identified as 'poor' using the 60% AHC CV ('fixed line') threshold, and 15% were in 'severe or significant hardship' as measured using ELSI Levels 1 and 2. [63] These proportions are close enough to allow some comparisons of relative rates for selected subgroups of the population.[64] The subgroups are based on the following individual and household or family characteristics:

- age group
- ethnicity
- family type
- number of children

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[61] See Perry (2002) for a summary of the international literature and for detailed discussion on the issue.

[62] It would be useful to compare the two measures on trends over time. This could be a possibility in the future when the Living Standards time series covers several surveys. With only two points in the series so far (2000 and 2004) it would be premature to try to reach any conclusions on comparisons over time.

[63] The Ministry of Social Development's Living Standards research programme has developed a consumption- based measure of living standards (ELSI) based around what people (want to) have and do. It has published descriptive accounts of the distribution of living standards in New Zealand in 2000 and in 2004. See Jensen et al (2002), Krishnan et al (2002) and Jensen et al (2006) available at http://www.msd.govt.nz/work-areas/social-research/living-standards/index.html .

[64] When the ELSI threshold is adjusted to get 17% under it (ie to just above the upper boundary for Level 2), the subgroup rates rise accordingly. This adjustment was considered for the purposes of this comparison section, but the straight Level 2 upper boundary was retained as the related figures are all formally published and the comparison storyline is not significantly impacted by the adjustment.

- main source of income for those households and families under 65.

Table K.1 shows that in almost every case:

- the relative rankings for the categories within the subgroups is the same for both the AHC incomes approach and for the Living Standards approach
- there is a reasonable similarity in actual proportions identified as 'income poor' or 'in hardship'.

The exceptions are those aged 18-24 and those of 'Other' ethnicity.

The likely explanation for the difference for the group aged 18 to 24 years is that a significant proportion are experiencing a higher living standard than is suggested by their household income alone because of the use of student loans and/or assistance in cash or kind from outside the household (eg from parents or others).

A closer inspection of the incomes of those of 'Other' ethnicity shows that there is a sizeable group with either implausibly low incomes *per se* (below the levels of income-tested benefits) or with more plausible low incomes below poverty lines but with reported expenditure well above the 50% and 60% poverty lines. This is a possible explanation for the significant difference in results for this group with the better position on the ELSI score reflecting the impact of the actual rather than reported resources.

Table K.1
Comparison of hardship rates based on income and living standards measures, by selected individual and household/family characteristics (2004)

	Income AHC CV 60	ELSI levels 1-2	
Age group			
0-17	23	26	
18-24	22	9	←
25-44	17	15	
45-64	13	10	
65+	7	4	
Ethnicity			
European	12	10	
Māori	22	28	
Pacific	29	42	
Other	38	15	←
Family type			
SP	42	42	
2P	16	14	
Number of children			
One	16	20	
Two	16	19	
Three+	28	31	
Main source of income for families/households <65			
Market	12	9	
Income-tested benefit	56	47	
Total population	**17**	**15**	

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