

Rebasing Child Poverty Estimates for Northern Ireland in 1998/99

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Executive Summary

Launched in November 2006, 'Lifetime Opportunities', Governments anti-poverty and social inclusion strategy for Northern Ireland, committed to the halving of child poverty by 2010/11 on the way to eradication by 2020.

This commitment mirrored that for Great Britain for which a raft of policies and initiatives, both GB and UK based, had been developed. Many of these policies and initiatives apply equally to Northern Ireland.

The baseline period against which progress will be assessed in meeting the child poverty eradication pledge for both commitments is 1998/99. However the Family Resources Survey (FRS) which provides the data for the relative low income poverty measure reported in the Households Below Average Income (HBAI) series, first ran in Northern Ireland in 2002/03 having run in Great Britain since 1994/95.

The aim of this paper is to update the previous publication by OFMDFM, 'Estimating Child poverty in NI in 1998/99'¹. That publication developed a methodology for estimating historic child poverty in the context of providing a plausible and evidenced estimate of the number of children in Northern Ireland who lived in relative low income households in 1998/99.

The basis on which HBAI data is calculated was revised for the publication of 2005/06 HBAI data, with historic data to be adjusted accordingly. As indicated in the previous OFMDFM publication, this necessitated a rebasing of the original child poverty estimates for 1998/99 on the basis of the new adjusted data.

The estimates within this report are updated to reflect the use of the Organisation for Economic Co-operation and Development (OECD) equivalisation scale used for the first time in the 2005/06 UK and NI HBAI reports. All income related figures within this report have been calculated using the OECD equivalence scale therefore they are not comparable with FRS data published before the 2005/06. Both the Department for Work and Pensions (DWP) and the Department for Social Development (DSD) are currently updating key estimates from the HBAI series based on the newly adopted OECD scale to provide a comparable run of data over time.

The change in equivalisation scale was prompted by the UK Government's 2004 spending review which stated that future child poverty measurements will report incomes before housing costs with equivalisation using the OECD scale. The government decided to use the OECD scale as it is used most often internationally, allowing comparisons with other countries especially in terms of the European Union (EU) where poverty rates are reported as part of

¹ Available on OFMDFM research website-
<http://www.ofmdfmi.gov.uk/index/equality/equalityresearch.htm>

the National Action Plans for Social Inclusion produced by member states of the EU.

Income in the HBAI reports is adjusted to take into account disparity in household size and composition of households. This process is known as equivalisation (explained in Appendix A), and allows for comparisons between different types of households. The modified OECD scale differs from the previously used McClements scale in the weights given to adults and children. A specific difference is that the Modified OECD scale allows for greater costs for young children.

On that basis, the preferred rebased estimate of child poverty in 1998/99, based on HBAI NI and UK data for the years (2003/04 to 2005/06) is:

1998/99 estimates	Before Housing costs	After Housing costs
Child poverty risk	29%	31%
Number of children in poverty	135,000	143,000

Whilst these estimates are provided as actual rounded numbers and actual percentages, they should not be regarded as having that degree of precision given that they are based on the application of household survey data to mid year estimates. The complexities of estimating confidence intervals or margins of error associated with the methodology employed in this paper precluded their assessment.

1. Introduction

The context

The Prime Minister in March 1999 announced Governments commitment to eradicate child poverty by 2020.

The 2004 Public Service Agreement target associated with this commitment is to halve the number of children in relative low income households² between 1998/99 and 2010/11 with an interim target of reduction, by a quarter, in 2004/05. Given that it is not possible to reach zero on a relative low income measure, the DWP Technical note for 2005-2008 clarified the term 'eradication' as having a child relative low income poverty rate amongst the best in Europe.

Based on the EU Joint Report on Social Protection and Social Inclusion (2007)³ The best in Europe for the relative "child at risk of poverty rate" for 2004 (latest figures) would be around 10%. Across the EU the lowest rate was 9% in Sweden. The EU25 average in 2004 was 19%. The worst rates in 2004 were: Poland at 29%; Lithuania at 27%; Romania at 25%, compared with the UK at 22% and Ireland at 23%. The majority of the measures reported reflect a BHC approach.

There were 3.3 million children in poverty⁴ in GB in 1998/99 before housing costs, the subsequent GB target for 2010/11 is therefore to reduce the numbers of children in poverty to 1.65 million children. After housing costs, there were 4.3 million children in poverty in 1998/99, to halve this by 2010/11 would mean a reduction of 2.15 million children.

Government subsequently set a further target, although not a Public Service Agreement Target, of there being no fewer than 1 million children living in absolute low income⁵ by 2010/11 compared with 3.4⁶ million in 1998/99.

In this broad context, and through a process of consultation in respect of how progress on the eradication of child poverty could best be measured, the Department for Work and Pension subsequently developed a 'tiered' child poverty measure incorporating three separate measures:

² Relative low income households are defined as those with incomes below 60% of contemporary equivalised median income. This may be on a before housing costs (BHC) basis or after housing costs (AHC) i.e. when certain costs associated with housing have been deducted. This report provides estimates on both a BHC and AHC basis

³ http://ec.europa.eu/employment_social/social_inclusion/docs/2007/joint_report/sec_2007_329_en.pdf

⁴ For simplicity, unless indicated otherwise, all HBAI figures in this report are based on the modified OECD scale.

⁵ Absolute low income households are those whose current income is below the 60% median household income level for 1998/99, adjusted year on year for the effects of inflation

⁶ UK level figure

- Relative low income- essentially whether the poorest households are keeping pace with the growth of incomes in the economy as a whole
- Absolute low income- whether the poorest households are seeing their incomes rise in real terms
- Mixed relative low income and material deprivation- a broader poverty measure incorporating low income set at 70% of median income before housing costs combined with deprivation of selected goods and activities (baselined at 2006)

On the basis of the DWP tiered measure, success in eradicating child poverty by 2020 could be interpreted as: eradicating absolute child poverty baselined at 1998/99; having a material deprivation child poverty rate which approached zero; and of being among the best in Europe on relative low incomes⁷.

Questions on material deprivation were introduced onto the FRS in 2004/05. These questions are used as an additional way of measuring living standards for children and their families. Preliminary analysis of these questions has been presented for the first time in the 2005/06 HBAI publication. A mixed low income and material deprivation measure has recently been defined and reported by the Department for Work and Pensions⁸.

The data source for all these measures of child poverty is the FRS which has run in GB from 1994/95 and on which the publication 'Households Below Average Income' (HBAI) is based.

The FRS and subsequent production of HBAI reports were extended to NI for the first time in 2002/03. Northern Ireland currently has data for four time periods: 2002/03, 2003/04, 2004/05 and 2005/06.

The figures within this report use the OECD equivalisation scales. HBAI reports prior to 2005/06 used the McClements scale. This change from using the McClements scale was prompted by the Government's 2004 spending review which stated that future child poverty measurements will report incomes before housing costs and equivalised using the OECD scale. The OECD scale as it is used most often internationally therefore allowing more similar comparisons with other countries and Europe in particular. The process of equivalisation is explained in more detail in Appendix A.

⁷ See www.dwp.gov.uk/ofa/related/final_conclusions.pdf

⁸ See www.hm-treasury.gov.uk/media/B/9/pbr_csr07_psa9.pdf

Aim

The aim of this paper is to rebase the calculations in the previous publication by OFMDFM, 'Estimating Child poverty in NI in 1998/99'⁹ on the basis of the new OECD equivalence scale. The aim of the original publication was to develop a methodology which provided a plausible and evidenced estimate of the number of children in Northern Ireland who lived in relative low income households in 1998/99.

The measure of child poverty estimated for 1998/99 is the relative low income measure, defined as children in households whose income is less than 60% of contemporary equivalised median household income. Estimates are produced on both a BHC and AHC basis.

Approach

The broad approach taken in the current paper is to:

- back-cast estimates for Northern Ireland on the basis of existing data and the relationship between rates and numbers of children in low income households between Northern Ireland and in Great Britain

Whilst forecasting data of this nature is fraught with difficulty, back-casting data, while also inexact, benefits from the ability to correlate with other existing sources of data which bear a strong relationship to the data being estimated. It is the strength of this broader comparative evidence which should determine whether estimates for child poverty in 1998/99 are plausible¹⁰.

Notwithstanding the strength of the comparative evidence however, the procedures and estimates generated in this paper are based upon the four years of data available for NI to date. These figures have all been updated using the new OECD equivalence scale.

⁹ Available on OFMDFM research website-
<http://www.ofmdfmi.gov.uk/index/equality/equalityresearch.htm>

¹⁰ Comparative data was provided in the previous OFMDFM report on estimating child poverty and the reader is referred to that report for the detail which can be accessed at
<http://www.ofmdfmi.gov.uk/eliminatingchildpoverty.pdf>

2. Method 1: Estimating child poverty in NI using four years of HBAI data 2002/03 to 2005/06

The procedure used to back-cast measures of child poverty to 1998/99 is comprised of three discrete stages which are explained below.

Procedure 1

1. Calculate the average percentage point difference in child poverty risk between NI and GB for the four available years 2002/03 to 2005/06.

- On a BHC basis: +3.3%
- On an AHC basis: -2.3%

2. Apply these estimates to the NI mid year population estimates for 1998 onwards

	Number of children under 18 (population mid year estimates) ¹¹	GB estimate of child poverty risk (BHC +3.3)	Estimated number of NI children in poverty (BHC)	GB estimate of child poverty risk (AHC -2.3)	Estimated number of NI children in poverty (AHC)
1998/99	464,000	29.3	136,000	31.7	147,000
1999/00	460,000	29.3	135,000	30.7	141,000
2000/01	456,000	26.3	120,000	28.7	131,000
2001/02	451,000	26.3	119,000	28.7	129,000
2002/03	447,000	26.3	118,000	27.7	124,000
2003/04	442,000	25.3	112,000	26.7	118,000
2004/05	437,000	24.3	106,000	25.7	112,000
2005/06	435,000	25.3	110,000	27.7	120,000

Procedure 2

1. Estimate the average percentage relationship between the number of children in poverty in NI and GB for the four available years

- On a BHC basis: 4.0%
- On an AHC basis: 3.2%

In other words on a BHC basis on average over the four year period between 2002/03 and 2005/06, the number of children in poverty in NI was 4% of the total in GB.

¹¹ All population figures are calculated using NI mid year population figures published by NISRA. HBAI defines a child as aged under 16 or unmarried 16-18 year olds in full time education. However, the total number of children aged 15 and under, plus 75% of 16 and 17 year olds in full time education (department of Education statistics), and an assumption of 50% of 18 year olds in further or higher education yields a number equivalent to all those aged under 18.

2. Apply these percentages to child poverty estimates for GB from 1998 onwards:

	Number of children in income poverty in GB (BHC)	Estimated number of NI children in income poverty (BHC) (4.0% of GB figures)	Number of children in income poverty in GB (AHC)	Estimated number of NI children in income poverty (AHC) (3.2% of GB figures)
1998/99	3,300,000	132,000	4,300,000	138,000
1999/00	3,300,000	132,000	4,200,000	134,000
2000/01	3,000,000	120,000	3,900,000	125,000
2001/02	2,900,000	116,000	3,900,000	125,000
2002/03	2,800,000	112,000	3,700,000	118,000
2003/04	2,800,000	112,000	3,600,000	115,000
2004/05	2,600,000	104,000	3,500,000	112,000
2005/06	2,700,000	108,000	3,700,000	118,000

Procedure 3

1. Average the estimated numbers from procedures 1 and 2. Using the average of procedures, calculate synthetic child poverty risk using mid year population estimates of all children aged under 18.

BHC	Procedure 1 estimate	Procedure 2 estimate	Average of procedures	Synthetic risk %
1998/99	136,000	132,000	134,000	29
1999/00	135,000	132,000	133,000	29
2000/01	120,000	120,000	120,000	26
2001/02	119,000	116,000	117,000	26
2002/03	118,000	112,000	115,000	26
2003/04	112,000	112,000	112,000	25
2004/05	106,000	104,000	105,000	24
2005/06	110,000	108,000	109,000	25

AHC	Procedure 1 estimate	Procedure 2 estimate	Average of procedures	Synthetic risk %
1998/99	147,000	138,000	142,000	31
1999/00	141,000	134,000	138,000	30
2000/01	131,000	125,000	128,000	28
2001/02	129,000	125,000	127,000	28
2002/03	124,000	118,000	121,000	27
2003/04	118,000	115,000	117,000	26
2004/05	112,000	112,000	112,000	26
2005/06	120,000	118,000	119,000	27

The overall outturn of these procedures results in a child income poverty rate in 1998/99 for Northern Ireland of:

- 29% (BHC) compared to 26% for GB
- 31% (AHC) compared to 34% for GB

3. Method 2: Estimating child poverty in NI using three years of HBAI data 2003/04 to 2005/06

Estimates were also produced using the 3 years of FRS data (2003/04-2005/06) from GB FRS. The same procedures were used that were described above.

Procedure 1

1. Calculate the average percentage point difference in child poverty risk between NI and GB for the three years data.

- On a BHC basis: +3.7%
- On an AHC basis: -2.0%

2. Apply these estimates to the NI mid year population estimates for 1998 onwards

	Number of children under 18 (population mid year estimates) ¹²	GB estimate of child poverty risk (BHC +3.7)	Estimated number of NI children in poverty (BHC)	GB estimate of child poverty risk (AHC -2.0)	Estimated number of NI children in poverty (AHC)
1998/99	464,000	29.7	138,000	32.0	148,000
1999/00	460,000	29.7	137,000	31.0	143,000
2000/01	456,000	26.7	122,000	29.0	132,000
2001/02	451,000	26.7	120,000	29.0	131,000
2002/03	447,000	26.7	119,000	28.0	125,000
2003/04	442,000	25.7	114,000	27.0	119,000
2004/05	437,000	24.7	108,000	26.0	114,000
2005/06	435,000	25.7	112,000	28.0	122,000

Procedure 2

1. Estimate the average percentage relationship between the number of children in poverty in NI and GB for the three years 2003/04 to 2005/06¹³.

- On a BHC basis: 4.0%
- On an AHC basis: 3.2%

¹² All population figures are calculated using NI mid year population figures published by NISRA. HBAI defines a child as aged under 16 or unmarried 16-18 year olds in full time education. However, the total number of children aged 15 and under, plus 75% of 16 and 17 year olds in full time education (department of Education statistics), and an assumption of 50% of 18 year olds in further or higher education yields a number equivalent to all those aged under 18.

¹³ The outturn of this procedure using data from 2003/04 to 2005/06 was identical to the outturn of the previous method using data 2002/03 to 2005/06.

2. Apply these percentages to child poverty estimates for GB from 1998 onwards:

	Number of children in income poverty in GB	Estimated number of NI children in income poverty (BHC) (4.0% of GB figures)	Number of children in income poverty in GB (AHC)	Estimated number of NI children in income poverty (AHC) (3.2% of GB figures)
1998/99	3,300,000	132,000	4,300,000	138,000
1999/00	3,300,000	132,000	4,200,000	134,000
2000/01	3,000,000	120,000	3,900,000	125,000
2001/02	2,900,000	116,000	3,900,000	125,000
2002/03	2,800,000	112,000	3,700,000	118,000
2003/04	2,800,000	112,000	3,600,000	115,000
2004/05	2,600,000	104,000	3,500,000	112,000
2005/06	2,700,000	108,000	3,700,000	118,000

Procedure 3

1. Average the estimated numbers from procedures 1 and 2. Using the average of procedures, calculate synthetic child poverty risk using mid year population estimates of all children aged under 18.

BHC	Procedure 1 estimate	Procedure 2 estimate	Average of procedures	Synthetic risk %
1998/99	138,000	132,000	135,000	29
1999/00	137,000	132,000	134,000	29
2000/01	122,000	120,000	121,000	26
2001/02	120,000	116,000	118,000	26
2002/03	119,000	112,000	116,000	26
2003/04	114,000	112,000	113,000	26
2004/05	108,000	104,000	106,000	24
2005/06	112,000	108,000	110,000	25

AHC	Procedure 1 estimate	Procedure 2 estimate	Average of procedures	Synthetic risk %
1998/99	148,000	138,000	143,000	31
1999/00	143,000	134,000	139,000	30
2000/01	132,000	125,000	129,000	28
2001/02	131,000	125,000	128,000	28
2002/03	125,000	118,000	122,000	27
2003/04	119,000	115,000	117,000	27
2004/05	114,000	112,000	113,000	26
2005/06	122,000	118,000	120,000	28

2. The overall outturn of these procedures results in a child low income poverty rate in 1998/99 for Northern Ireland of:

- 29% (BHC) compared to 26% for GB
- 31% (AHC) compared to 34% for GB

4 Discussion

4.1 1998/99 Child poverty estimates

The approach taken in this paper was to provide an updated rebased estimate of the number of children in poverty and the child poverty rate for 1998/99. The following estimates were calculated.

Table 1: Four Year Procedure- 2002/03- 2005/06

1998/99	Before Housing Costs	After Housing Costs
Child poverty risk	29%	31%
Number of children in poverty	134,000	142,000

Table 2 Three Year Procedure- 2003/04- 2005/06

1998/99	Before Housing Costs	After Housing Costs
Child poverty risk	29%	31%
Number of children in poverty	135,000	143,000

Table 3 Three Year Procedure- 2002/03- 2004/05

1998/99	Before Housing Costs	After Housing Costs
Child poverty risk	29%	30%
Number of children in poverty	134,000	141,000

Note detailed methodology for this estimate is not contained within this report but follows that for method one and method two.

On the basis that the 2002/03 HBAI NI data represented the first year of the Family Resources Survey in NI, it is probable that the succeeding years data (2003/04 to 2005/06) represents the outcome of a more mature and developed survey. On that basis, the preference here would be to rely on the estimates generated by the data from 2003/04 to 2005/06. In reality, there is no difference in the baseline estimates using any of the above combinations of the annual HBAI NI data available.

4.2 Implications for NI targets set in relation to eradicating child poverty

The overall target to eradicate child poverty by 2020 has two interim targets, to reduce the number of children living in low income households by one quarter by 2004/05, on the way to halving child poverty in 2010/11 baselined at 1998/99.

Table 4 Percentage reduction in modelled numbers of children in poverty 1998/99 to 2004/05- created using 3 years data (2003/04 to 2005/06)

	Before Housing Costs	After Housing Costs
1998/99 estimates	135,000	143,000
2004/05 estimates	106,000	113,000
% reduction	21%	21%

Using the modelled estimates for both the baseline period 1998/99 and for 2004/05, the BHC quarter reduction target, as was the case for GB, was missed.

Table 5 Percentage reduction in numbers of children in poverty modelled in 1998/99 (using 3 years data (2003/04 to 2005/06) with actual HBAI NI figures for 2004/05

	Before Housing Costs	After Housing Costs
1998/99 estimates	135,000	143,000
2004/05 HBAI NI	107,000	110,000
% reduction	21%	23%

Comparing the above 1998/99 modelled estimates with the actual HBAI NI figures for 2004/05 a similar picture in relation to the quarter reduction target for figures based on modelled estimates can be seen.

On the basis of the modelled estimates for 1998/99 based on the 3 years data 2003/04 to 2005/06, the target to halve the numbers of children in poverty by 2010/11 is shown in Table 6.

Table 6 Challenge faced in halving child poverty by 2010/11

	Before Housing Costs	After Housing Costs
1998/99 estimates	135,000	143,000
To halve by 2010/11	67,500	71,500

As Table 6 indicates, to meet the target to halve child poverty by 2010/11 requires reducing, by around 67,500, the number of children measured in poverty on a before housing cost basis.

Appendix A

Equivalisation using OECD Scales

The income measures used in HBAI take into account variations in the size and composition of the households in which individuals live. This reflects the common notion that, in order to enjoy a comparable standard of living, a household of say three adults will need a higher income than a single person living alone. The process of adjusting income in this way is known as equivalisation and is needed in order to make sensible income comparisons between households.

Equivalence scales conventionally take an adult couple with two children, as the reference point, with an equivalence value of one. This process then increases relatively the income of single person households (since their incomes are divided by a value of less than one) and reduces relatively the incomes of households with three or more persons, which have an equivalence of greater than one.

Consider a single person, a couple and a couple with two children aged fourteen and ten, all having unadjusted weekly household incomes of £200 (Before Housing Costs). The process of equivalisation, as conducted in HBAI, gives an equivalised income of £299 to the single person, £200 to the couple, but only £131 to the couple with children.

The main equivalence scales now used in HBAI are the OECD scales, which take the values shown below in **Table A1.1**. The equivalent values used by the McClements equivalence scales are also shown for comparison alongside the OECD values.

In both the OECD and McClements versions two separate scales are used, one for income Before Housing Costs (BHC) and one for income After Housing Costs (AHC). The construction of household equivalence values from these scales is quite straightforward. For example, the BHC equivalence value for a household containing a

Couple with a fourteen year old and a ten year old child together with one other adult would be 1.86 from the sum of the scale values:

$$0.67 + 0.33 + 0.33 + 0.20 + 0.33 = 1.86$$

The total income for the household would then be divided by 1.86 in order to arrive at the measure of equivalised household income used in HBAI analysis.

A1.1 Comparison of OECD and McClements equivalence scales

Equivalence scales				
	Modified OECD rescaled to couple without children=1 ²	OECD 'Companion' Scale to equivalise AHC results	McClements BHC	McClements AHC
First Adult	0.67	0.58	0.61	0.55
Spouse	0.33	0.42	0.39	0.45
Other Second Adult ³	0.33	0.42	0.46	0.45
Third Adult	0.33	0.42	0.42	0.45
Subsequent Adults	0.33	0.42	0.36	0.4
Children aged under 14 yrs ¹	0.20	0.20	0.20	0.20
Children aged 14 yrs and over ¹	0.33	0.42	0.32	0.34

Notes

1. The McClements scale varies by age within these groups: appropriate average values are shown in the table
2. Presented here to two decimal places
3. The weight for 'Other Second Adult' is used in place of the weight for 'Spouse' when two adults living in a household are sharing accommodation but are not living as a couple. 'Third Adult' and 'Subsequent Adult' weights are used for the remaining adults in the household as appropriate. In contrast to the McClements scales, apart from for the first adult, the OECD scales do not differentiate for subsequent adults.

Source: Department for Social Development Households Below Average Income NI 2005/06
p149-150