

Measuring child poverty: Fixed-line measure

Purpose

Measuring child poverty – Fixed-line measure provides information about the fixed-line measure anchor point for measuring child poverty. It also explores how often the anchor point should be updated, and which inflation adjustment method Stats NZ will use in reporting on child poverty.

About measuring child poverty

The Child Poverty Reduction Act ('the Act') was introduced in 2018 to help achieve a significant and sustained reduction in child poverty in New Zealand. The Act requires government to set three-year and ten-year targets on four primary measures, and that the Government Statistician will report annually on [10 measures](#) of child poverty.

Stats NZ produces statistics on the economic well-being of New Zealanders, including children, from the Household Economic Survey (HES). The Ministry of Social Development (MSD) also reports on this in their annual Household Incomes Report and the associated report using non-income measures.

However, HES is currently not adequate for measuring child poverty at the level of precision necessary to effectively implement the Act, due to a relatively small sample size and sample bias for low-income or high-deprivation households. This is being addressed in HES 2018/19 through an increase in sample size and better targeting of low-income or high-deprivation households.

Summary

We made these decisions:

- the base financial year is set to 2017/18 and will be constant for 10 years, unless economic circumstances make it necessary to change before the 10 years are up
- the household living-costs price index for income quintile 1 (with housing costs deducted) will be used to adjust for inflation.

Fixed-line measures

Low-income measures used for poverty analysis can use both fixed- and moving-line approaches. A moving-line approach, such as 'below 50% of the (contemporary) median household income', examines a household's current income relative to the current median for all households.

The threshold moves from year to year due to inflation and economic changes. A low-income household will improve its situation if its income moves closer to the median, irrespective of changes in real income.

During times of rapid economic change, these moving-line measures can sometimes show unexpected movements – for example, if incomes drop overall during a recession then poverty rates may drop, due to the median falling, and not because low-income households are better off.

The fixed-line approach sets an income threshold for a particular base year and keeps this threshold constant, while adjusting for inflation. Using this approach, a household's situation improves if its income rises in real terms, irrespective of what happens to the incomes of other households. Using the fixed-line approach allows analysis of households' real incomes and whether these are rising or falling.

The Child Poverty Reduction Act 2018 specifies a fixed-line measure as one of four primary measures. It is measure 'b':

The percentage of children living in households in New Zealand in the financial year who fell within low income: less than 50% median equivalised disposable household income after housing costs (AHC) for the **base** financial year.

This paper explores decisions about:

- which year should be the base financial year (the anchor point)
- how often the base financial year should be changed
- the appropriate index to use to adjust incomes for inflation.

Base financial year (the anchor point)

The base financial year, or anchor point, is the year at which incomes are fixed and then inflation-adjusted to when applying the fixed-line approach.

The [Incomes report](#), produced by MSD, currently fixes the anchor point to 2007; previously it was set to 1998. Due to considerable changes in New Zealand's economy since 2007, such as the impact of the global financial crisis and continuing recovery, we need to reset the base financial year for reporting under the Act.

Government intends to set targets for poverty reduction, using the four primary measures in the Act. These targets will use estimated poverty rates from the 2017/18 financial year as the baseline.

Matching the base financial year to the baseline year for targets will enable analysis of the impact of poverty reduction initiatives against the economic circumstances in the base year. We will not need to adjust for other economic changes. Conceptually, fixed-line measures and moving-line measures will be the same at the base financial year.

The base financial year will be the same as the baseline year for targets, that is the 2017/18 financial year.

Adjusting the base financial year over time

As median household income changes as the economy changes, the income threshold used in fixed-line measures can move from current median incomes. This means the base financial year (anchor point) needs to be reset to maintain its relevance.

Past practice has been to change the anchor point about every 10 years (1998, 2007). This achieves a balance between doing it too often, which reduces our ability to look at consistent trends, and doing it at very long intervals, which doesn't allow for factoring-in changing economic circumstances.

[Defining and measuring child poverty](#) (PDF, 42p), from the Expert Advisory Group (EAG) on Solutions to Child Poverty (2012) notes that if the base year is adjusted too frequently, this undermines the utility of any fixed-line measure. If the base year is maintained for a long period (e.g. 20–30 years), the data may be of less policy relevance.

The EAG recommended adjusting the base financial year every 10 years to balance stability and relevance.

However, in some situations it may be better to change the anchor point before the 10 years. The EAG notes that economic or policy shocks can significantly affect income levels over a short period. This could affect the relevance of the base financial year for making comparisons. If this happens the anchor point can be reviewed.

The Act requires setting three-year and 10-year targets for reducing child poverty. Changing the base financial year part way through the 10-year target period could affect child poverty rates and may require alterations to targets. This could cause confusion for the public – any change should therefore be considered carefully.

The base financial year is set at 2017/18 for 10 years (or as appropriate should economic circumstances require a change).

Index for inflation adjustment

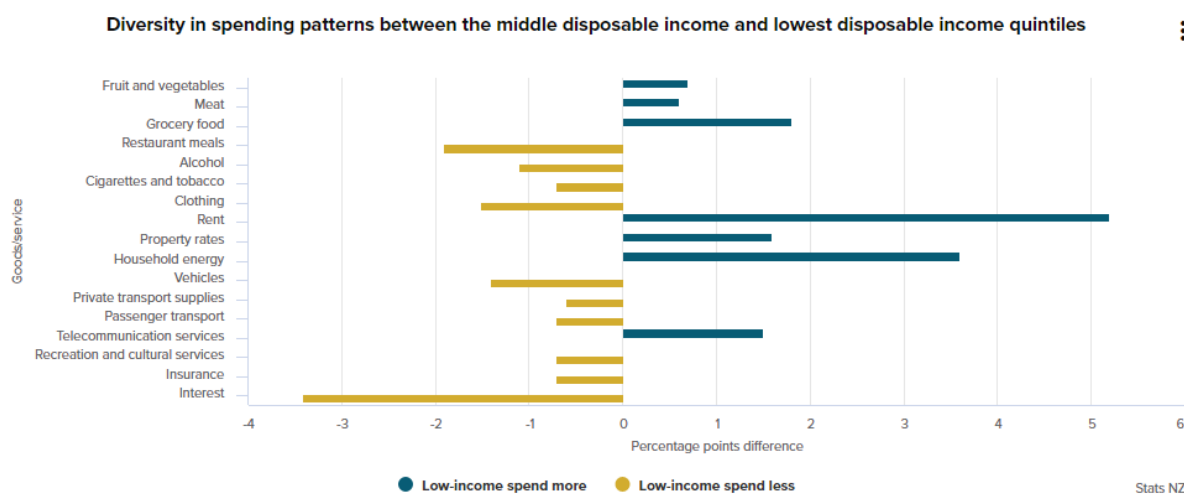
In fixed-line measures, base financial year 'poverty lines' are adjusted for inflation. This adjusts for changes in the purchasing power of money over time. This means household incomes can be compared against the poverty line in 'real' income terms.

In MSD's [Incomes report](#) inflation adjustment was done using consumers price index (CPI) full-year averages (June year), using the index for the 'all groups less housing' series. We calculate this index after removing housing costs from incomes. The CPI's principal use is to inform monetary policy-setting. It is also acknowledged the CPI's design is a compromise between this principal use and other uses, such as adjusting a range of public and private payments (Stats NZ, 2016).

The all groups index is an aggregate measure that represents the price change experienced **on average** by households. This makes it well suited for use as a national barometer of inflation. However, distribution of inflation means the CPI does not necessarily align well with inflation experienced by different demographic groups.

[Household living-costs price indexes](#) (HLPs) do provide measures of the inflation experienced by specific household groups, such as beneficiaries or Māori. The resulting index better reflects the actual inflation experienced by the group. For example, low-income households typically spend proportionally more than average on household energy and grocery food. They spend proportionally less on new cars, international airfares, and restaurant meals. Figure 1 shows these differences.

Figure 1



Price changes in the commodities that low-income groups spend proportionally more on have a greater impact. Using the HLPI for an appropriate group will therefore better reflect the inflation each group is subject to than using the CPI index.

Owner-occupied housing and interest payments are also treated differently in HLPs, to better align with individual household experience. The HLPs are therefore better designed to measure the changes in the purchasing power of income, as recommended by the International Labour Organization (2003).

The HLPs were developed following expert advice and public consultation. Household-group specific expenditure patterns are robust and stable over time.

[Quality measures of HLPs](#) has more information.

Which HLPI to use

HLPI indexes are available from the June 2008 quarter for 13 population groups:

- beneficiaries
- Māori
- income quintiles (five groups)
- expenditure quintiles (five groups)
- superannuitants.

To adjust the after-housing-costs fixed-line measure specified in the Act we investigated using three HLPI groups.

- Beneficiaries – many of the low-income households are likely to include beneficiaries.
- Expenditure quintile 1 – the quintile (20 percent) of households with the lowest equivalised annual expenditure.
- Income quintile 1 – the quintile (20 percent) of households with the lowest equivalised annual disposable income.

All three are likely to be groups of households with low income and therefore to experience inflation differently from the average household. They are the most appropriate HLPs to use to adjust for inflation for our child poverty measurement. As we are using income after housing costs, the HLPs are also adjusted to exclude housing.

Table 1 compares the threshold calculated using 50 percent of median income after housing costs, in 2009 dollars, and using the CPI and these three indexes for inflation adjustment. The ‘all households’ HLP is for comparison.

50% of median household income after housing costs for all households adjusted to 2009 dollars is available under Download data.

Table 1

50% of median household income after housing costs for all households adjusted to 2009 dollars						
Year	50% of median (current prices) \$	CPI ⁽¹⁾ \$	HLP All households ⁽²⁾ \$	HLP beneficiaries ⁽²⁾ \$	HLP Expenditure quintile 1 ⁽²⁾ \$	HLP Income quintile 1 ⁽²⁾ \$
2009	11,907	11,907	11,907	11,907	11,907	11,907
2010	12,257	12,115	12,135	12,154	12,155	12,150
2011	12,260	12,606	12,646	12,774	12,763	12,731
2012	12,913	12,861	12,939	13,102	13,110	13,055
2013	13,431	12,899	13,019	13,217	13,273	13,203
2014	13,876	13,022	13,183	13,453	13,541	13,463
2015	14,391	13,022	13,164	13,483	13,575	13,477
2016	14,575	12,946	13,075	13,375	13,436	13,342

1. This index was used in the latest Incomes report – series CPIQ.SE9NS1010
2. Excludes housing
Source: Stats NZ

Table 1 shows that poverty lines are lowest if the CPI is used to adjust for inflation (fewer children would be recorded as below the poverty line).

Households in lower expenditure and income quintiles experience higher inflation than average – using these HLPs sets a higher poverty line than using the CPI or the all groups HLP, resulting in more people being identified as below the poverty line.

The beneficiaries, income quintile 1, and expenditure quintile 1 all give very similar results. However, income quintile 1 is the most appropriate inflation adjustment for child poverty measurement. The median income for income quintile 1 is close to the poverty line, so typical expenditure patterns for this group are likely to represent the inflation experienced by low income households.

Conclusion

The fixed-line approach is required for measure ‘b’ of the primary measures defined in the Child Poverty Reduction Act 2018. Final decisions for the methodology to be used for this measure are that:

- the base financial year is set to 2017/18 and will be constant for 10 years, unless economic circumstances make it necessary to change before the 10 years are up
- the household living-costs price index for income quintile 1 (with housing costs deducted) will be used to adjust for inflation.

References

International Labour Organization (2003). [Resolution concerning consumer price indices](#). 17th International Conference of Labour Statisticians. Retrieved from www.ilo.org.

New Zealand Government (2018). [Child Poverty Reduction Act 2018](#). Retrieved from www.legislation.govt.nz.

Office of Commissioner for Children Expert Advisory Group, on Solutions to Child Poverty (EAG) (2012). [Defining and measuring child poverty](#). [PDF, 42p]. Retrieved from www.occ.org.nz.

Ministry of Social Development (MSD) (2018). [Household incomes in New Zealand: Trends in indicators of inequality and hardship 1982 to 2017](#). Retrieved from www.msdc.govt.nz.

Stats NZ (2013). Report of the consumers price index advisory committee 2013. Retrieved from www.stats.govt.nz.

Stats NZ (2014a). Decision on 2013 CPI Advisory Committee recommendations. Retrieved from www.stats.govt.nz.

Stats NZ (2014). [Public consultation on CPI advisory committee 2013 recommendations](#). Retrieved from www.stats.govt.nz.

Stats NZ (2016). [Household living-costs price indexes: Background](#). Retrieved from www.stats.govt.nz.

Appendix 1: Child poverty measures

The 10 measures to be included in child poverty reporting are:

The percentage of children living in households in New Zealand in the financial year who fell within:

- a) low income: less than 50% median equivalised disposable household income before housing costs (BHC) for the financial year
- b) low income: less than 50% median equivalised disposable household income after housing costs (AHC) for the base financial year
- c) Material hardship
- d) Poverty persistence
- e) low income: less than 60% median equivalised disposable household income before housing costs (BHC) for the financial year
- f) low income: less than 60% median equivalised disposable household income after housing costs (AHC) for the financial year
- g) low income: less than 50% median equivalised disposable household income after housing costs (AHC) for the financial year
- h) low income: less than 40% median equivalised disposable household income after housing costs (AHC) for the financial year
- i) Severe material hardship
- j) low income and hardship: less than 60% median equivalised disposable household income after housing costs (AHC) for the financial year and material hardship

Appendix 2: Quality measures of HLPs

[Public consultation on CPI Advisory Committee 2013 recommendations](#) includes the table below, which shows the absolute sampling errors on average annual percent changes, by population subgroup. The sampling error of 0.16 percentage points on the annual inflation rate for income quintile 1 is small, although higher than for 'all households'.

Using the HLPI for income quintile 1, we trade-off lower precision (higher sampling error) with a more accurate measure of typical expenditure patterns for low-income households.

Average annual percent change – June 2008 quarter to September 2012 quarter, by population subgroup is available under Download data.

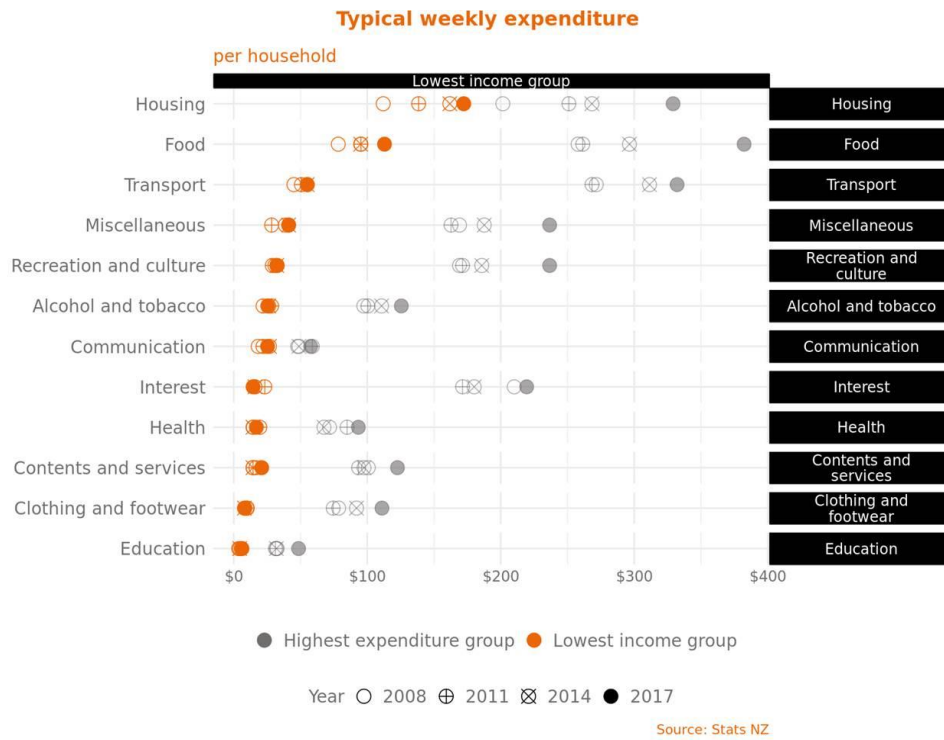
Table 2

Average annual percent change – June 2008 quarter to September 2012 quarter				
By population subgroup				
Group	Population subgroup	Payment-based framework	Absolute sampling error due to index weight estimation	Household Economic Survey 2009/10 sample size
		Percent	Percentage points	Households
All households (acquisition-based framework)		2.35	0.03	3,126
	All households	1.65	0.04	3,126
Ethnic	Asian	1.32	0.31	255
	European	1.66	0.05	2,607
	Māori	1.75	0.23	476
	Non-Māori	1.63	0.05	2,650
	Pacific people	1.48	0.44	187
Government transfer recipient	Beneficiary	2.10	0.26	559
	Main beneficiary	2.21	0.30	370
	Superannuitant	2.87	0.12	663
	Superannuitant and beneficiary	2.43	0.15	1,098
Income	Quintile 1	2.55	0.16	627
	Quintile 2	2.21	0.19	622
	Quintile 3	1.56	0.23	630
	Quintile 4	1.51	0.15	628
	Quintile 5	1.33	0.17	619
	Wage and salary earner	1.44	0.08	1,839

Another way to assess the quality of the HLPs is to look at the stability of the different expenditure patterns over time. We expect true changes in expenditure patterns to evolve slowly. They should not change dramatically between three-yearly expenditure surveys if the estimates are reliable.

Figure 2 shows weekly expenditure for the highest expenditure group and lowest income group. We see stable patterns over time.

Figure 2



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