

Robert Stephens

DIMENSIONS of Poverty Measurement

Introduction

In December 2012 the Office of the Children's Commissioner produced a report on *Solutions to Child Poverty in New Zealand: evidence for action* (Expert Advisory Group on Solutions to Child Poverty, 2012a, 2012b). This wide-ranging report provided a detailed analysis of the causes and consequences of child poverty, as well as providing a range of policy solutions to the various dimensions of child poverty. Recommendations were not limited to just increasing the level of disposable income for poor households: the report also made policy recommendations in relation to health care, housing costs and standards, educational attainment,

labour markets and local community support, plus issues of child support, the justice sector and problem debt. All of these recommendations were set in an ethnic context, with specific attention given to the particular issues pertaining to addressing poverty in Māori and Pasifika communities.

The report argued that if solutions to poverty and hardship are to be developed, then it is necessary to know how to define poverty, what are the appropriate ways to measure poverty, which socio-economic groups are more likely to face the risk of being in poverty, and the extent, severity and duration of that poverty.

This article concentrates on the issues involved in measuring poverty. The article recognises that there is no single definition and concept of what constitutes poverty,

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that judgements are required at each stage of the analysis, that the afflictions of poverty are not necessarily overcome by jumping over an arbitrary poverty threshold, and nor will all of those below the specified threshold suffer adverse social outcomes. The article follows the approach taken in the child poverty report, outlining five interrelated ways of measuring poverty, looking at the steps involved in establishing each measure, and providing some New Zealand data on the extent and severity of poverty.

The rationale for having a measure of child poverty

The measurement of child poverty is a political exercise, and to be useful for policy purposes requires a social commitment to both mitigating the consequences of child poverty and providing a longer-term solution to address the causes of child poverty. The measurement of poverty enables:

- the determination of which household groupings (number of children in the family, housing tenure, workforce status, ethnicity, tenure status, etc.) are likely to have a greater incidence and severity of poverty, thus permitting better targeting of resources to those in greatest need;
- an analysis of the appropriate mix of cash and in-kind benefits to address the sources of child poverty;
- a tracking of trends and persistence of child poverty through time;
- the monitoring and evaluation of the impact of policy changes on the living standards of the poor;
- the determination of the adequacy of wage rates, basic social security benefit levels and child assistance payments; and
- an assessment approach that enables governments to be held to account for the impacts of their social and economic policies or child poverty.

Defining poverty

The child poverty report argued that child poverty should be defined as follows:

Children living in poverty are those who experience deprivation of the material resources and income that

is required for them to develop and thrive, leaving such children unable to enjoy their rights, achieve their full potential and participate as full and equal members of New Zealand society.

The definition indicates that children should be given the opportunity to achieve their full potential, both as children, receiving full educational and

The report also provides data on a before-and-after-housing cost income measure. Housing costs tend to vary independently of income: those with paid-off mortgages tend to have more effective disposable income than those in market rental properties, even if they have the same pre-tax income. However, people can adjust their housing costs by moving to low-cost housing areas, or accepting substandard accommodation.

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social opportunities, and as adults so that they can achieve their own economic and social well-being. The definition also indicates the importance of material and financial resources, and how those resources are distributed between family members. Moreover, the level of financial resources influences child outcomes, and thus the possibility of deprivation in terms of health status, educational attainment and social participation.

Measures of child poverty

The child poverty report recommended a suite of child poverty measures, resulting from two frameworks: income and material deprivation.

Income

The income measure was divided into two fundamental approaches, one based on maintaining the existing real income level of the poverty line (fixed-line) (Perry, 2012), the other based on maintaining the relative income level of the poor (moving-line). Both approaches set the poverty threshold in relation to the standard of living in New Zealand. Stephens et al. (1995) argued for the moving-line approach, but misleading results occur when average incomes fluctuate.

A large number of issues still have to be resolved:

- 1 What is the poverty threshold? The European Union (EU) used 60% of median household equivalent disposable income, while the OECD uses 50%. Both of these lines are arbitrary. Stephens et al. (1995) provided a rationale for the EU figure, using low-income families to calculate a minimum level of expenditure providing for sufficient food to satisfy nutritional requirements, one heated room, payment for health and dental care, but not having a holiday or meals out. Despite economic and social conditions altering in the intervening 20 years, this 60% estimate is used by the child poverty report.
- 2 What is the measure of income and data source? Income is disposable income, i.e. market income adjusted for the imposition of personal income tax and receipt of social security benefits. The annual Household Economic Survey (HES) is the only data source that adjusts market income for taxes and benefits, using the Treasury TaxWel model which assumes that both taxes and benefits are paid according to the legislation.

The survey has fewer than 3,000 households, giving statistically valid results in total, but it may not for each family composition – single person, couple, sole parent, number of dependent children; by tenure status – owned outright, with mortgage, renting; by ethnicity – European, Māori, Pasifika; by age of head of household, in five-year age groups, including 65+; and by workforce status – one/two earners, benefits plus market income, benefits.

- 3 What adjustments to the poverty threshold should be made to account for differences in family sizes and compositions? Given the same disposable income, a single person has a higher per capita

a 10 percentage point difference from the original poverty line.

Material deprivation

Material deprivation is an outcome measure, based on the number of consumption items that a family has to go without due to income constraints. Material deprivation looks at the standard of living actually achieved, rather than its potential based on current income. It thus includes the ability to utilise assets (or liabilities), and can include any policy switches, from a tax-mix switch or from cash to in-kind assistance. The measure does not account for misuse of resources, but can account for the need for greater resources to offset costs associated with disability or health care. Again, large

developed, with levels one and two being regarded as having severe or significant hardship.

- 3 What is the data source for the index? A Ministry of Social Development scale, based on survey data, used 40 items, but a restricted set of questions (the Material Well-being Index (MWI)) is now incorporated into the HES data set, allowing income and material deprivation approaches to be combined.
- 4 The MWI needs to be updated on a regular (ten-year) basis to accommodate changing views as to what constitutes a necessity (e.g. home computers are now assumed for school homework).

Severity of poverty

Those furthest from the poverty threshold are more likely to experience a combination of the various causes of poverty, and thus suffer more severely from the consequences of poverty. The severity of poverty indicates the current level of hardship suffered, as well as the future impact of current poverty on future educational and workforce attainments, health status, and general standards of living throughout the person's lifetime.

The child poverty report suggested that two measures be used: the first based on the poverty gap, or the extent to which those who are poor fall below the moving-line income threshold, and the second based on a combination of those who fall both below the moving-line income threshold and the material deprivation index. Both can be used to show which groups should be targeted if the most severe hardship is to be addressed and how resources can be tailored to address future hardship.

Poverty persistence

The length of time that one is poor is also related to current and future levels of material deprivation. Those who have been poor for three or four years in a row are more likely to have been unemployed, often a result of low educational attainment, poorer health and substandard housing conditions, all of which tend to reinforce each other. Persistent poverty is also more likely to

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income than a couple with three dependent children. Equivalence scales is the technical term used for the means of converting household income to per capita income. There is no correct answer, but all scales recognise that there are economies of scale from living in a family group. The Jensen scales are based on a couple with three dependent children requiring 158% of the income of a couple to achieve the same per person disposable income, and a single person only 65%.

- 4 Should a fixed-line approach ever be adjusted for significant rises in average incomes? In a period of economic growth or significant policy change, the fixed-line approach would mean that the poor would have a continuous fall in their relative standard of living. The child poverty report recognised that, and recommended that the fixed line be adjusted back to the 60% level, either every 10 years or when there is

numbers of judgements have to be made in establishing a material deprivation index.

- 1 What items are to be included in the index? To distinguish the poor from the non-poor, the items have to range from necessities to luxuries. The broad categories cover ownership (phone, computer, insurance); social participation (presents for family, entertainment, holiday); economising (postponed visit to doctor or dentist, buying fewer fruit and vegetables, old clothes); housing problems (dampness, heating); financial problems (not paying bills, unable to borrow); and self-rating (adequacy of income, satisfaction).
- 2 What constitutes poverty or material hardship? The issues here are how to aggregate the enforced lacks into an index, and then what is the proportion of enforced lacks that is required before a family is regarded as being in hardship. Seven categories have been

result in inter-generational hardship.

Measuring persistent poverty requires a longitudinal survey, tracking the same households through time. The measure allows a separation between those who have just one period of poverty (transient), where past asset accumulation permits the household to offset the afflictions of poverty, those moving in and out of poverty, often just moving over the threshold, and those who are chronically poor, being in hardship for many years.

In addition, it is useful to have a measure of the geographical distribution of poverty, showing which areas have a high incidence of unemployment, sole parenting, low household income, etc. Although not all in the area will be poor, the information is useful in determining where to target resources such as additional education and health funding, social service delivery and social housing in order to offset the disadvantages that children growing up in these areas are likely to face.

Who are the poor?

Given the large number of dimensions of and ways to measure poverty, it is surprising that there is a high degree of congruence as to which family compositions are likely to be poor. However, at the individual household level the degree of congruence is far lower, with only about half of those who are poor on the income measure also being poor on the material deprivation measure (Perry, 2012). The difference can be explained by the level of asset ownership, the ability to use other resources, and the degree of poverty persistence.

Family groups with a high incidence of poverty tend to be sole parents, those with low or no labour force participation, Māori and Pasifika, families with children, especially larger families, those renting or paying mortgages, and younger households. Many of these groupings are interrelated: for instance, Māori and Pasifika tend to have more children, are on average younger, and have lower employment rates. Those aged 65+ are more likely to own their home outright, whereas younger households are more likely to rent or have large mortgages, giving significant differences in real disposable income after housing costs

Table 1: Income poverty, 2007

	Market income incidence %	Disposable income incidence %	Poverty incidence effectiveness %	Structure of poverty %	Poverty gap effectiveness %
All people	23.6	12.4	47.5	100.0	80.5
All children	26.3	16.7	36.5	32.5	72.8
Child, couple	16.8	9.0	46.4	17.4	96.3
Child, sole parent	72.5	56.1	22.6	15.1	53.8
All adults	22.8	11.0	51.7	67.5	84.0
Adults 18–64	15.1	11.2	25.8	58.1	39.5
Adults 65+	65.6	9.9	84.9	9.4	99.0
Workforce					
Benefits	100.0	45.6	54.4	40.8	86.0
Benefits + income	54.3	18.9	65.2	14.3	86.6
1 adult, no benefit	24.2	15.9	34.3	28.4	38.4
2 adults, no benefits	3.7	3.7	–	16.5	16.3

Source: Stephens and Waldegrave (2007)

Notes:

- The poverty measure is 60% of median household equivalent disposable income, fixed-line (base 1997) after housing costs.
- The incidence of poverty is measured by the proportion of the total population (or sub-groups) who are below the poverty threshold. Market income covers earnings, dividends, interest, rent, etc. Disposable income is market income adjusted by the payment of personal income tax, and receipt of social security benefits, including child assistance and New Zealand Superannuation.
- Poverty incidence effectiveness is the extent to which direct taxes and benefits reduce the incidence of market income poverty.
- The structure of poverty refers to the percentage of the total poor who fall into each separate household category.
- The poverty gap effectiveness is the extent to which direct taxes and benefits reduce the severity of poverty as measured by the poverty gap.

and thus different levels of material deprivation. Sole parents, especially when their children are young, tend to have lower employment levels. This multi-causality provides policy makers with a range of reinforcing policy instruments. For instance, it may be useful to tailor resources both by ethnicity (Whānau Ora) and by increasing the level of assistance for larger families and providing more assistance for those with younger children.

The way that the results on the incidence and severity of poverty are analysed can also provide further information to policy makers. Using a material deprivation approach may show the extent to which households forgo doctor and dentist visits, or have damp and cold houses, with these constraints indicating that in-kind assistance may be a superior policy option to cash, whereas failure on many dimensions probably indicates a general lack of household income. Equally, just presenting information on the incidence of poverty may provide misleading directions for

policy formulation: Māori and Pasifika may have a far higher incidence of child poverty but, due to their relative small share of the total population, about half of poor children come from a Māori and Pasifika background. Both tailoring resources to Māori and Pasifika and providing universal assistance are required.

Information on the degree to which government policies directly affect the level of poverty is also required. With income poverty, changing income tax rates and benefit levels should influence the incidence and severity of disposable income poverty. Using the material deprivation approach, government policies on home insulation schemes, for example, should reduce the incidence of households suffering from cold or damp houses, with a consequential improvement in the MWI.

Income poverty results

The Expert Advisory Group report (2012a) shows poverty incidence rates for 2011, but does not show information

Table 2: Indicators of material deprivation, by family type (%)

Economising behaviour	Total	2 parents + children	1 parent + children	65+
Less/cheaper meat	23	28	52	36
Postponed doctor visit	8	9	18	8
Not got prescription	2	3	7	2
Cannot afford glasses	5	6	11	10
Financial problems				
Can't pay utilities	10	12	36	2
Borrowed money	14	13	27	1
Accommodation problems				
Dampness	19	20	19	–
Plumbing	11	11	12	–
Roof needs repair	12	13	9	–

Source: Stephens and Waldegrave (2007)

on the effectiveness of direct government policies. Table 1, based on 2007 data, using a fixed-line, after-housing cost measure, shows that the poverty rate on market income is far higher for sole parents and pensioners, both of whom have relatively low labour force participation. Based on disposable income, over half of sole parents are still poor, whereas New Zealand Superannuation (NZS) has reduced the incidence for those aged 65+ to around 10%: NZS is a very effective poverty reduction policy, especially when the severity of poverty (the poverty gap) is analysed. The low poverty reduction effectiveness for sole parents shows the general inadequacy of the domestic purposes benefit and child assistance. Poverty rates for those in the tax-paying working age group are generally low, as is shown in the bottom part of the table.

Material deprivation results

Material deprivation indicates the standards of living actually achieved, rather than what could be achieved from current income: some allowance for the severity and persistence of poverty is covered in material deprivation scores. The results in Table 2 show that on virtually all of the indicators shown, families with dependent children, especially sole parents, have worse outcomes than those of the total population and those aged 65+.

When material deprivation is analysed by family type and income source, those out of the workforce, whether sole- or two-parent families, have the highest degree of material deprivation. Those

family types with market incomes have far higher standards of living, resulting from lower levels of restrictions on the various deprivation indicators due to income constraints. Both Table 1 and the material deprivation data show the importance of market income in reducing poverty, but that market income alone is not always sufficient to alleviate all poverty.

Poverty persistence

The level of poverty persistence, or length of time that a family is below the poverty threshold, is partly measured by the degree of income mobility. Imlach Gunasekara and Carter (2012) use the Survey of Family Income and Employment database to show a relatively low degree of income mobility. Over a five-year period, 65% of individuals in the bottom 20% of earners remained in that quintile, and 23% boundary-hopped into the next quintile, while only 5% had moved into the top 40% of the income distribution. At the top end of the income distribution, 71% had stayed in the top 20%, and just 12% had fallen into the bottom three quintiles. The most substantial movements in the income distribution come from people entering work after completing their education and people leaving work following retirement.

As a consequence of the low level of income mobility, there is a significant difference in people's experiences of poverty. Half of the population, and 44% of children, never experienced poverty over a seven-year period, while a further 13% had a one-year transitory experience. However, about 5% of adults and children

were in poverty for the whole seven years, and about the same numbers had four years, five years or six years below the poverty threshold.

International comparisons

The child poverty report indicates that the overall degree of material deprivation in New Zealand is higher than in western European countries but lower in than the poorer countries in eastern Europe. However, the incidence of deprivation is unusual, made up of a very high level of deprivation for children and a very low level for adults aged 65+.

In terms of income poverty, using a moving-line 50% median income measure, New Zealand has an above average rate of poverty compared to other OECD countries. The poverty rate for children is much higher than that of northern European countries, well below that of Canada, the United States and Spain, but higher than Ireland and Australia. At the 50% poverty level, the poverty rate for those aged 65+ is very low, but the poverty rate for the whole population is above the OECD average.

Conclusions

Poverty can cause serious short- and long-term problems which can range from going hungry, suffering from social stigma, living in substandard housing and being in poor health, to lacking the ability to achieve one's potential. There is a social and economic cost from people living in poverty, and this cost can continue through generations.

If there is a social commitment to addressing the causes and consequences of poverty, then there is a role for government to develop appropriate policy prescriptions. Poverty alleviation also has economic and social benefits, from improvements in productivity to improved education attainments, better health outcomes and social cohesion. The child poverty report put forward a variety of short-and-long-term policies which would go a long way to reducing the causes and offsetting the consequences of childhood poverty. The solutions to poverty should not just come from central government, but require input from local and regional governments, from

community organisations, from family and whānau, and from the individuals themselves.

The provision of appropriate policies requires knowledge of who is poor, and the dimensions of that poverty, including its severity and persistence. Given that there will always be significant financial constraints on policy development, in order to target and tailor policies to the domain of need it is necessary to know which social groupings are more likely to be poor. Measures of poverty thus need to be aligned with causes, consequences and possible policy prescriptions.

The child poverty report recommended a suite of interrelated poverty measures. Several measures are based on disposable income, one on the level of material deprivation occurring within the family, with the others relating to the severity and persistence of that poverty. Using disposable income as the poverty measure tends to focus attention on policy solutions that raise family income, given the existing degree of in-kind benefits, while material deprivation allows policy

makers to tailor in-kind solutions more directly to the source of the deprivation, such as lack of access to health care or to adequate, affordable housing, as well as income. The severity and persistence measures help determine which family types and socio-economic groups should take priority in policy developments.

Measuring poverty is a controversial political activity, and at each stage in the development of a measure judgements have to be made, with the results being both intuitively plausible and politically acceptable. These judgements have to be clearly enunciated and transparent, and informed by evidence and international acceptability. In most cases alternate thresholds should be provided: e.g. 50% and 60% of disposable income; before-and-after housing costs; adjusted by the consumer price index and median earnings; by the types and levels of consumption constraints; and how those items of material deprivation are aggregated into an aggregate order. The alternate thresholds will allow the policy maker the opportunity to enter into a

dialogue about both the measure and the resultant policy prescriptions. Data sources are important, as is the presentation of the results. The results should be presented by a range of household types, ages, number of children, ethnicity, housing tenure, workforce status, and so forth. This will provide a better picture of the causes of poverty: for instance, sole parents have a very high poverty incidence, but the underlying cause may emerge from a consideration of workforce status or number of children.

Without measurement of the incidence, persistence and severity of poverty, policy will be made in a vacuum, and thus may be inefficient or ineffective in targeting and tailoring assistance to those in need. The impact of government policies on poverty rates has to be shown so that the public can give the appropriate brickbats or bouquets to policy initiatives. Thus, as recommended in the child poverty report, the presentation of poverty measurement statistics should be legislated for, allowing regular monitoring and accountability for the results.

References

- Note: a far more detailed list of references is contained in Expert Advisory Group on Solutions to Child Poverty, 2012a and 2012b.
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