

THE MISMATCH BETWEEN INCOME MEASURES AND DIRECT OUTCOME MEASURES OF POVERTY

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Abstract

A key finding of recent poverty research is that there is a significant mismatch between poverty measured using an income approach and poverty measured directly in terms of observed deprivation or other indicators of unacceptably low living standards. The mismatch is substantial and is typically in the range of 50% to 60%. This paper takes this mismatch as a springboard for discussion on the conceptualisation and measurement of poverty. A key purpose of the paper is to identify the relevant international literature and report on some of the findings, including some comparisons for New Zealand using data from the 2000 Living Standards Survey. The findings are set out in the context of a general framework for understanding the mismatch and lead to a discussion of the implications for the conceptualising and measurement of poverty, and for reporting on poverty trends. The paper advocates the use of a suite of measures rather than a single measure to better capture the multi-dimensional nature and complexity of poverty, and especially to assist with the understanding of the factors and processes that contribute to the exclusion of citizens from a minimum acceptable way of life in their own society because of inadequate resources.

INTRODUCTION

Poverty, especially child poverty, is back on centre-stage in the economically developed nations. This rise in interest in poverty means that the clarification of measurement and related conceptual issues has become even more pressing than before, especially for public policy. In March 1999, for example, Tony Blair announced the United Kingdom Government's commitment to eradicate child poverty within a generation, yet there was no robust poverty measurement regime in place to assess progress towards the goal. A subsequent public discussion document on measuring child poverty notes that "as we move forward, we want to be sure that we are measuring poverty in a way that helps to target effective policies and enables the Government to be held to account for progress" (Department for Work and Pensions 2002). New Zealand is in a similar position. The Government has committed to eliminating child poverty (Ministry of Social Development 2002), and the Ministry of Social Development is exploring options for regular reporting on poverty trends.

The focus of this paper is on the relationship between the income approach to poverty measurement, and the outcome approach that measures achieved living standards.

At a general level a person or household can be said to be poor when their resources do not satisfy their needs. This begs the question of how to define resources and needs and how far they have to differ from each other for a household or individual to be identified as poor. To avoid the unhelpful situation of virtually everyone being classed as poor because their (self-defined) needs in terms of goods and services are not being met, the notion of minimum needs has to be introduced.

There has been a longstanding debate in the poverty literature as to whether these minimum standards should be defined in absolute or relative terms. The absolute notion is generally focused on those goods and services that are necessary for a person's physical existence (for example, nutrition, clothing, shelter and health care). On the other hand a relative definition takes as its reference the average and generally accepted standard of living in a given society at a given time and goes beyond what is required for mere physical existence.¹

In the economically developed nations poverty is now almost universally conceptualised in relative terms. It is defined and assessed vis-à-vis the living standards of the society in question. The definition adopted in this paper is that poverty is *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 input and outcome elements. "Poverty is not just any limited social functioning, but specifically isolation that stems from the lack of economic resources" (Kangas and Ritakallio 1998:175).

This definition (or something similar) is "the most commonly used definition in the industrialised world" (UNICEF 2000:6). 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)

¹ The absolute/relative distinction is also used in another way. Once a poverty threshold is set (whether using an income or outcome measure) it can be either updated over time or held fixed. The literature often refers to the resulting measures as relative or absolute, respectively. In the latter case the measure is termed "absolute" even though it was originally set "relative" to the living standards of the time.

In the formulations since Townsend the precise wording varies but the essence is the same. Exclusion from a minimum acceptable way of life is sometimes spoken of in terms of “generalised deprivation”² Others use “unacceptably low living standards”, where living standards is fairly narrowly understood in terms of consumption-based material well-being rather than more general notions of welfare, well-being or happiness. Whatever the exact formulation of the definition, the common ground is that “poverty is not just a state of affairs, it is an *unacceptable* state of affairs – it implicitly contains the question, what are we going to do about it?” (Alcock 1993:4).

In practice there are three broad approaches that are used for measuring material well-being and for identifying “the poor”.³

By far the most common approach is to limit resources to economic or financial resources, and in particular to current income, and then to select one of a range of methods to determine where to “draw the line”. Each method adopts some means of linking income to a minimum acceptable standard of living and/or participation in society, but without actually measuring the achieved outcomes. The main methods are budget standards, food or necessities ratios, focus group assessments of minimum income, consensual or “subjective” methods using individual responses, and relative income lines where the threshold is defined as an arbitrary proportion (usually 50% or 60%) of the mean or median.⁴

The second approach focuses on the outcome dimension and measures current living conditions directly, focusing on the consumption of goods and services, the ownership of items, and activities that require direct expenditure. Some studies simply use a stock-take approach and report endorsement rates for selected items, sometimes creating straightforward hardship scales based on aggregates of missing items. These studies assess deprivation in terms of simply not having the item or participating in the activity. No attempt is made to ascertain whether a particular lack is the result of preference or the result of financial constraint. Other studies use a more restricted notion of deprivation which focuses on the denial of the opportunity to have or do something because of limited finances. The focus here is on the result of financial constraints on people’s choices, not just on the outcomes themselves.

² “In measuring deprivation we are not trying to provide a full picture of the occurrence of deprivation across all aspects of people’s lives, but rather to identify indicators that will tap into the underlying latent variable of generalised deprivation” (Nolan and Whelan 1996b:73).

³ The focus of this paper is on poverty measured at a national level using data from large-sample surveys. Other approaches are needed to fill out the picture through detailed accounts of the life experiences of the poor, and to obtain reliable information on those not likely to be captured by the methods of large-scale surveys, especially those whose extreme hardship or whose “exclusion” means they are highly unlikely to be selected as respondents (e.g., Peace et al. 2002).

⁴ Expenditure methods are sometimes used. The case can be made that expenditure is a better proxy for economic resources than current income, but the limited availability of good-quality expenditure data more often than not rules it out as a viable option.

Again, simple aggregation is common, but some use factor analysis or other analytical techniques to investigate dimensionality or to finesse the aggregation.⁵

The third approach depends on survey respondents' assessments of their own income or living standards (the subjective approach), or for their views on the income or consumption needs of households in general (the consensual approach). These measures have an important place in the poverty literature but are not discussed in this paper.⁶

A key finding of recent poverty research is that there is a significant mismatch between poverty measured using an income approach and poverty measured directly in terms of observed deprivation or other indicators of unacceptably low living standards. The mismatch is substantial and is typically in the range of 50% to 60%.⁷ This means that around half of those whose living standards are judged to be unacceptably low have incomes that are above the chosen income poverty line. Similarly, around half those who have incomes below the poverty line report consumption and living conditions that place them above the deprivation poverty line.

At first sight such a sizeable mismatch looks like a serious impediment for useful poverty measurement. Low current income, the most common yardstick used to measure poverty, is found to be an unreliable measure of poverty understood as "exclusion arising from lack of resources". It misses many who have unacceptably low living standards and counts many who have reasonable living standards but whose current income is low.

There is no simple way out by setting income aside and using direct outcome measures. There are both conceptual and empirical issues with direct outcome measures, just as there are with using income measures.⁸

The mismatch certainly cannot simply be ignored. Indeed, "unless one can explain how this [limited overlap] comes about, what it means, one cannot be comfortable about using income,

⁵ There are any number of studies that give useful descriptions of the actual living conditions of the poor in the richer nations. Relatively few, though, have developed scales of material well-being or hardship that allow a comparison of poverty measured by income (a ready-made scale) and current living conditions.

⁶ See Van den Bosch (2001) for a recent and comprehensive summary and assessment of the subjective and consensual measures of poverty.

⁷ See the later section on the literature and findings for detailed support for this.

⁸ First, what are the relevant living standards dimensions to take into account? Second, assuming that there can be agreement on which indicators to use and how best to weight and aggregate them into a scale, there are considerable challenges for setting a deprivation poverty threshold, and adjusting it over time so that it remains a truly "relative" measure. Third, it is not easy to be sure whether those identified as poor on an outcome measure are experiencing low living standards "because of inadequate economic resources" or for some other reason (e.g. poor health). The issues are no more demanding than those for income measures, but they are there nevertheless.

deprivation, or both in measuring poverty” (Nolan and Whelan 1996b:3).⁹ It can, however, be taken as a spur to greater endeavour, an opportunity to further develop the conceptualisation and analytical apparatus needed to better identify the poor and understand what the factors and processes are that contribute to poverty.

This paper takes the mismatch between poverty measures based on current income and those based on a direct assessment of current living conditions as a springboard for discussion on the conceptualisation and measurement of poverty. The paper:

- outlines a general framework for understanding the mismatch;
- identifies the relevant international literature and reports some of the findings, including some comparisons for New Zealand using data from the 2000 Living Standards Survey;
- expands on the definition and conceptualisation of poverty outlined above in a way that is cognisant of the mismatch and takes account of the general framework for understanding the mismatch as outlined in the next section;
- discusses implications for poverty discourse and measurement, poverty alleviation policy, and future research and data needs, with special reference to New Zealand.

A FRAMEWORK FOR UNDERSTANDING THE MISMATCH BETWEEN INCOME AND DIRECT MEASURES OF POVERTY

A household’s relative living standards (material well-being) depend on how much it consumes, what it consumes and its consumption needs compared with others in the same society. Its consumption depends on its total “command over resources” or “permanent income”, of which current income is a key element – but not the only one. The link between current income and actual living conditions is therefore not straightforward as there are many factors other than current income that significantly affect consumption and therefore current material well-being. These other factors can differ significantly from household to household, so that even when their current incomes and consumption needs are the same or similar, their living standards differ. Figure 1 tells the story schematically. It is meant to be indicative rather than comprehensive, and makes no attempt to show the links between the various factors – that would require a different sort of diagram (see, for example, Mayer 1993).

Current consumption depends on more than just current reported income. Unreported income is “a serious problem at the top and bottom of the income distribution” (Mayer 1993:263).¹⁰ The ability to borrow or draw on accumulated savings adds to the capacity to

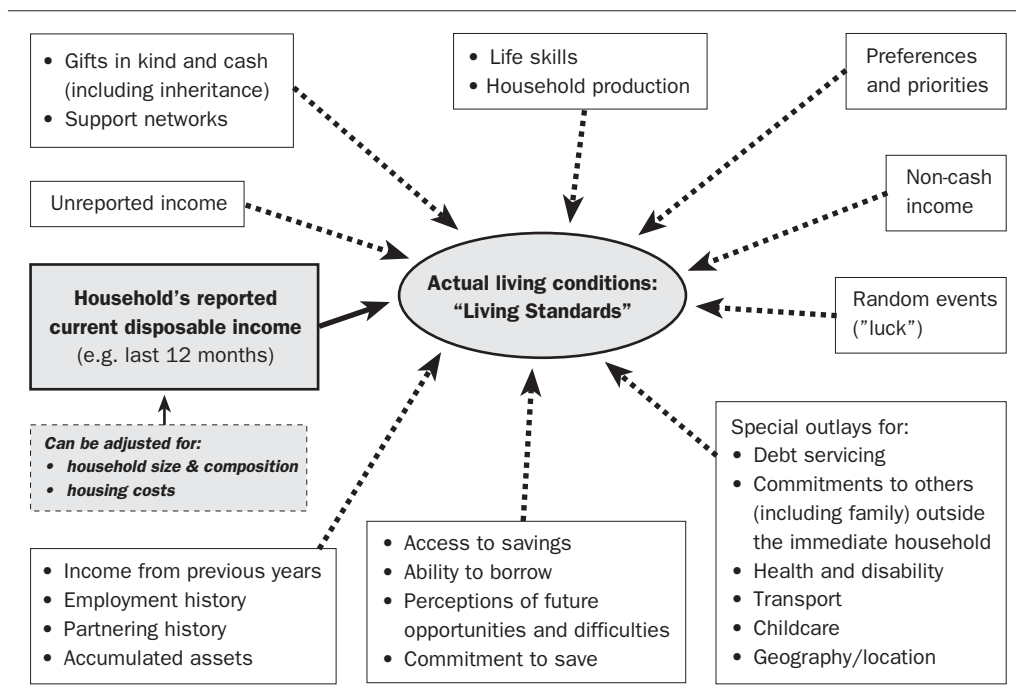
⁹ Nolan and Whelan (1996b) give a comprehensive account of the conceptual and empirical basis for the extensive poverty research programme of the Economic and Social Research Institute in Dublin. Findings from that programme and the Institute’s associated work with the European Panel Analysis Group form the backbone of this paper.

¹⁰ Measurement issues (in addition to the matter of unreported income) for both the income and living standards approaches will also contribute to the mismatch.

consume now (although most of those experiencing economic or material hardship are unlikely to have access to significant assistance from these sources). Past outlays for acquiring housing and consumer durables, and their current state of repair or disrepair, affect how much has to be spent on such items from current resources. The savings levels and net asset accumulation are likely to depend to a large degree on previous income. The availability of support from family, friends and neighbours can help maintain consumption levels during periods of low current income. Non-cash income, particularly goods and services provided directly by the state, is another significant resource for households. In addition, differing life skills and time availability for household production can lead to different living standards for households with the same reported current income.

Some of the differences in “needs” of households can be adjusted for to some degree. For example, income can be adjusted for household size and composition by using equivalence scales, and differing housing costs can be compensated for by using an “after housing costs” income measure. However, most differences in “need” or in special demands on the income stream cannot easily be adjusted for. Examples of these include: differing outlays because of different debt-servicing requirements; different commitments to support others outside the immediate household; differing costs because of health or disability issues, transport and

Figure 1 Same Current Income – Different Actual Living Conditions



child-care needs; and differing prices and services due to location.

The above considerations hold for all parts of the income spectrum. In moving the focus to the lower ends of the income and living standards distributions, consideration has to be given to another factor that may contribute to the mismatch. Those with “adequate” resources do not always use these to obtain what society or the researchers consider to be necessities.¹¹ This means that even if the effect of tastes or preferences is minimised by focusing on what respondents say is lack due to resource constraints, it may be that the level of resources left after their “preferred” purchases have been carried out is inadequate to obtain the minimum amount of socially defined necessities (cf. Piachaud 1987).

The relationship between current income and current living standards as depicted in Figure 1 is not straightforward, and it is therefore not surprising that there is a sizeable mismatch. Current income has a significant influence on current living conditions, but so too do the longer term accumulation and erosion of wider resources and the special demands on income that vary from household to household.

None of this is new, but it is often not to the fore in our thinking when using current income as a measure of poverty understood as exclusion *from the minimum acceptable way of life in one's own society because of inadequate resources*.

SOME INTERNATIONAL FINDINGS WITH NEW ZEALAND COMPARISONS

This section identifies the relevant international literature on the mismatch, summarises the evidence for the central claim about the size of the mismatch, and outlines some related findings. Some comparisons are made for New Zealand using data from the 2000 Living Standards Survey.

Literature

The most comprehensive source of information about the mismatch comes from the research in the United Kingdom and Europe that has taken its lead from the pioneering work of

¹¹ This is an issue only if there is a willingness to assert that some forms of consumption are more important than others. If a more individualistic approach is adopted, then if two individuals have the same needs and the same current level of consumption, they are by definition equally well off, regardless of what is in their respective consumption bundles (see Hagenaaers 1986:8, Mayer 1993:149).

Townsend (1979), and its development and refinement by Mack and Lansley (1985).¹² The 2000 New Zealand Living Standards data set allows for the first time some New Zealand comparisons to be made.¹³

All these studies use survey questions of the Mack and Lansley type in which respondents who report not having an item or not participating in the activity are also asked whether the lack is because they cannot afford it or because of some other reason. The prime rationale for this sort of question is that they go some way to distinguishing between lacks arising from preferences and those arising from financial constraint. This notion of deprivation as “enforced lack” is different from that of other studies that simply use the lack itself as an indicator of material hardship or deprivation.

The United States has had an almost exclusive focus on income measures of poverty and neither the Mack and Lansley type of question nor a strong research programme on the mismatch between the two types of poverty measure has yet crossed the Atlantic. There is, however, evidence of some emerging interest in supplementing the income measures with outcome measures of material hardship.¹⁴ These generally use the second conceptualisation of deprivation in which the lack itself is taken as evidence of hardship. There is also a strong debate in the United States on the related issue of whether to use income or consumption as the basis of poverty measurement (e.g. Mayer and Jencks 1993, Slesnick 1993, Jorgenson 1998, Haveman and Mullikin 1999, Meyer and Sullivan 2002). Johnson and Smeeding (1997) propose the use of both income and consumption measures together to obtain an estimate of (otherwise unobserved) permanent income.

¹² See Gordon and Pantazis (1997), Gordon et al. (2000) and Bradshaw and Finch (2001) for the United Kingdom; Callan et al. (1993) and Nolan and Whelan (1996a, 1996b) for Ireland; Muffels et al. (1992), Muffels (1993) and Muffels and Dirven (1998) for the Netherlands; Halleröd (1995, 1998) for Sweden; Kangas and Ritakallio (1998) for Finland; Böhnke and Delhey (1999) for Germany; Tsakloglou and Panopoulou (1998) for Greece; Eurostat (1999, 2000), Layte et al. (2001) and Whelan et al. (2001a) using data for a dozen countries from the European Community Household Panel Survey. Some of the conceptual tools for the research come from Ringen’s vigorous critique of the common practice of conceptualising poverty one way (as in this paper) but measuring it only using income (Ringen (1987, 1988)). Vegeris and MacKay (2002) report a material well-being scale for the United Kingdom but do not discuss the mismatch.

¹³ See Jensen et al. (2002) and Krishnan et al. (2002). Fergusson et al. (1981) used data from the Christchurch Child Development Study to develop direct measures of family material well-being using ownership items and economising behaviour. They note that income and expenditure measures would be likely to be imperfect indicators of family material well-being but do not explore the mismatch for poverty measurement. Waldegrave et al. (1999) provide a useful snapshot of the living conditions of low-income households in New Zealand but do not have an aggregated outcome measure to allow examination of the overlap.

¹⁴ See also Bauman (1998), Beverly (2000, 2001), Boushey et al. (2001), Federman et al. (1996), and Mayer and Jencks (1989, 1993). The recent review of the official United States income poverty measure by the Panel on Poverty and Family Assistance noted that although their brief was to review alternative measures of income poverty and they therefore did not examine direct measures of material hardship, they “encourage work on measures ... (such as the Townsend deprivation index) that relate to, but are not the same as, an economic measure of poverty” (Citro and Michael 1995:100).

Central Finding: Significant Mismatch between Income Measures and Outcome Measures of Poverty and Material Hardship

An examination of overlap proportions and correlation scores is particularly useful in understanding the mismatch. The limited size of the overlap is clearly illustrated in Table 1, which draws on research based on data from the first wave (1994) of the European Community Household Panel (ECHP) and the 2000 New Zealand Living Standards Survey. To simplify the comparison, the threshold for identifying the deprivation poor is set so as to give the same-sized group as is below the income poverty threshold.¹⁵ Leaving Denmark aside, which on this data is an outlier with a very high mismatch, the overlap ranges from around one-third for Germany to a half for Portugal, with New Zealand in between.

Table 1 Overlap Between Income and Deprivation Measures, Using 60% Median Equivalised Household Income as the Income Poverty Threshold

	% persons income-poor (= % deprivation-poor by construction)	% overlap between the two measures	% of population both income-poor and deprivation-poor
Portugal	24	52	12
United Kingdom	21	47	10
Greece	22	46	10
Spain	20	46	9
Ireland	17	44	8
Italy	19	42	8
New Zealand	17	40	7
France	15	39	6
Netherlands	10	39	4
Belgium	17	33	6
Germany	16	32	5
Denmark	8	17	1

Notes: The information in Table 1 on the European countries is based on Tables 1, 2 and 4 in Layte et al. (2001), who use income and deprivation data from the 1994 wave of the European Community Household Panel (ECHP). The income poverty threshold is set at 60% of the median equivalised household disposable income. The deprivation measure is based on 13 items of the Mack and Lansley type relating to ownership of basic items (e.g., car, colour TV and microwave) and to the household's ability to keep the home adequately warm, to eat meat, chicken or fish at least every second day if desired, and so on. Other items were available in the ECHP data set, but these 13 were chosen in part to minimise the income-deprivation mismatch.

The New Zealand finding is based on data from the 2000 New Zealand Living Standards Survey. The same income threshold is used as for the European findings and the deprivation measure is the ELSI scale which is based on a weighted aggregation of data from 37 items of the Mack and Lansley type and three self-ratings (see Krishnan et al. (2002) and Jensen et al. (2002). The New Zealand data uses economic family units rather than households, and the equivalence scale is a little different. Neither difference alters the fundamental finding about the mismatch.

¹⁵ One of the challenges shared by both approaches is to find a defensible basis for drawing the line for a poverty threshold. To get around this problem for the purposes of discussing the overlap between measures, a convenient approach is to compare the same proportion at the lower end of the distribution on each measure. As the income measures are more widely used, wherever possible the paper starts with the income poverty threshold and chooses a deprivation threshold to give the same proportion under it. The core finding of considerable mismatch still holds even if thresholds on the two measures are set independently and groups of somewhat different sizes are compared.

Based on data from the 1999 Poverty and Social Exclusion Survey of Britain (see Gordon et al. 2000), Bradshaw and Finch (2001) explore the overlaps among four measures of poverty. For an outcome measure they use information from questions of the Mack and Lansley type about having or lacking socially perceived necessities and count as poor those lacking four or more necessities. They find that 17% of households are poor on this measure, 19% fall below the 60% equivalised income threshold, and 11% are poor on both measures,¹⁶ giving an overlap of 60% to 65%.

A recent Australian study (Bray 2001) using 1998–99 data from the Australian Bureau of Statistics found that 22% of households fell below the 60% equivalised income threshold and a similar proportion were “missing out” on fully participating in what could reasonably be considered ordinary daily life (based on several criteria applied simultaneously). The overlap between the groups was only 40%. Using a more stringent measure of “multiple hardship”, 3.1 % of households were found to be “poor”, but only half of these households also had incomes below the 60% threshold.

Research from Finland (Kangas and Ritakallio 1998) reports a 32% overlap between a 50% median income measure (9% income-poor) and a 13-item deprivation measure of the Mack and Lansley type using three or more items as the threshold (13% deprivation-poor). This is similar to the New Zealand finding of a 35% overlap using a 50% median income line and the ELSI scale. Using 1988 household survey data from Greece, Tsakoglou and Panopoulou (1998) report a 44% overlap using 50% of mean relative income line and a simple unweighted non-monetary indicator score for housing amenities and consumer durables.

Another way of highlighting the mismatch is to examine the correlation between household or family income and the measure used for current living standards. International findings are reported in Table 2. While these values are fairly high in the social science research field, the association between the two measures is much looser than is assumed (often implicitly) in the literature that uses current income as a proxy measure for current living conditions.

Both sets of findings (overlap proportions and correlations) point in the same direction – there is a serious mismatch in those who are identified as poor on the two measures. Current income is not a good predictor of poverty conceived of as *exclusion from a minimum acceptable standard of living in one’s own society because of inadequate economic resources*. Nor does using the direct measures on their own solve the problem. There are those with unacceptably low living standards whose income is above any of the common income poverty thresholds.

¹⁶ Personal correspondence with authors for the “poor on both measures” figure.

Table 2 Correlation Between Household or Family Income and Current Living Standards

Source	Country	Correlation	Measure of current living standard
Nolan & Whelan (1996b), 1987 Survey of Income Distribution, Poverty, etc	Ireland	0.33 ^a	Total score on a 24-item Mack and Lansley (M&L)-type deprivation index
Layte et al. (2001), ECHP wave 1 (1994)	Netherlands, France, UK, Ireland and Italy	0.35 – 0.42	Total score on a 13-item M&L-type deprivation index
	Greece, Spain and Portugal	0.50	
Böhnke & Delhey (1999), German Welfare Survey (1998)	West Germany	0.32	Total score on a 14-item M&L-type deprivation index
	East Germany	0.35	
Böhnke & Delhey (1999), Breadline Britain Survey (1990)	United Kingdom	0.39	Total score on a 14-item M&L-type deprivation index
Mayer & Jencks (1989), Chicago surveys in 1983 & 1985	United States	0.37 ^b	Total score on a 6-item hardship index
Jensen et al. (2002), 2000 New Zealand Living Standards Survey	New Zealand	0.44 ^c 0.54 ^d	Total score on a 40-item weighted scale using 37 M&L-type items plus 3 self-ratings of living standards: broad spectrum scale

^a Using log of household income improves the correlation to 0.39. Using deciles of income and correcting for less than perfect reliability on the deprivation index increases the correlation further to 0.52.

^b Using log of unequivalised household income.

^c Equivalised family income.

^d Housing adjusted equivalised family income.

Other Findings

In addition to the central finding discussed above, there are related findings that add some texture to the overall picture. Four are highlighted below.

First, progressive lowering of the income poverty line does not systematically lead to the identification of increasingly deprived groups. Layte et al. (2001) use the ECHP data to compare the risks of being deprivation-poor for those in different low-income bands. They report that for seven of the 11 countries for which they had data, the risk of being deprivation-poor is greatest not for those below a 40% threshold but for those between 40% and 50% or even between 50% and 60%.

Bray (2001) reports a similar feature for Australia. The bottom 5% in the income range are better off on outcome measures than the next 10% to 20%. Analysis based on the 2000 New Zealand Living Standards data shows the same sort of trend. The mean ELSI score for the bottom equivalised-income decile is greater than for decile two and is about the same as for decile three. These results are consistent with the well established finding that at the lower

end of the income distribution, reported expenditure is often much greater than reported income (e.g. Adkin 1994, Saunders 1998, Slesnick 1993, Statistics New Zealand 1998, Stephens et al. 1995).¹⁷

Second, the overlap between the two measures increases as the threshold is raised. Table 3 shows the increasing overlap as the threshold is increased from 50% to 70%. Leaving aside Denmark again, the overlap for European countries using the 50% median threshold ranges from 18% to 40%. At the 60% threshold the overlap runs from 37% to 47%, and the consistency improves to 45% to 56% at the 70% line. The finding that the degree of overlap is dependent on the level at which the poverty threshold is set is not greatly surprising. What is relevant to poverty measurement is that the mismatch is still around one in two even for what by international standards is a generous income poverty threshold (the 70% line).

The same pattern is evident for New Zealand, with the overlap rising from 35% to 43% to 47% over the same part of the income distribution. The overlap improves if an after-housing-costs income measure is used, but the mismatch is still only one in two at the 70% threshold.

Table 3 Overlap between Income and Deprivation Measures of Poverty for Three Income Thresholds (% of Median Equivalised Household Income)

	50%	60%	70%
Denmark	13	20	32
Germany	27	37	45
Netherlands	25	38	50
Belgium	28	39	48
France	36	40	54
Italy	33	41	50
Spain	33	42	47
United Kingdom	32	44	54
Ireland	18	44	56
Greece	39	45	55
Portugal	40	47	54
New Zealand	35	40	47
NZ (after housing)	40	47	53

Notes: The information in Table 3 on the European countries is drawn from Whelan et al. (2001b), who use income and deprivation data from the 1996 wave of the European Community Household Panel. Note that there are some differences from the overlap reported in Table 1. This is because the analysis is based on different waves from the ECHP (1993/94 for Table 1 and 1995/96 for Table 4).

¹⁷ The New Zealand Poverty Measurement Project has sought to recognise the discrepancy by omitting households with expenditure at least three times their income (as well as households declaring self-employed losses). This reduced the overall income poverty incidence by three percentage points in their 1991 analysis (Stephens and Waldegrave 2001).

Third, by measuring income over a longer time period, the mismatch reduces. From the framework for understanding the relationship between income and current living standards, the overlap of the measures would be expected to improve when the income focus is shifted from cross-sectional measures to persistent income poverty measured over several years. In their ECHP analysis Whelan et al. (2001b) examine variation of overlap for those below a 70% income threshold in wave three (1996) by the frequency with which they are below the 70% line in waves one to three. The deprivation threshold used is that for wave three. Their findings confirm the expectations. Leaving Denmark aside again, for those who were income-poor in just one of the three years the agreement ranges from 27% to 40%, for two years the agreement runs from 39% to 54%, and for those income-poor in all three years the overlap is 46% to 67%. Thus, by taking a longer-term perspective on income poverty our ability to predict deprivation is significantly improved.

Finally, the mismatch at a population level is paralleled by differences in the composition of those identified as poor by the two measures. When both approaches independently¹⁸ identify similar proportions of sub-groups as poor, it is tempting to report that the findings are mutually supporting. Unfortunately, there is often a large mismatch between the two sub-groups when a comparison is made at the individual level. Nolan and Whelan (1996b:127) report that for Ireland in 1987 households with an unemployed head had a similar risk of being poor on both measures, but the overlap is only 50%. Using the data from the 2000 New Zealand Living Standards survey, 27% of children belong to income-poor households and 29% are poor using the ELSI scale.¹⁹ The overlap is close to 50% – only half the children identified as poor by one measure were also identified as poor by the other.

Significantly, the risk of being identified as poor differs for different sub-groups depending on which measure is used. Using 1987 survey data from Ireland, Callan et al. (1993) report that in moving from an income measure to a combined income and deprivation measure, the risk of poverty halves for farmers, more than doubles for households headed by someone on home duties, and almost doubles for households headed by an ill or disabled person.²⁰ The contrast between the relative position of older New Zealanders on the two measures is substantial. The Ministry of Social Development's living standards research reports that those aged 65 and over have relatively favourable living standards, yet on an income measure they are over-represented at the lower end.

¹⁸ That is, poverty thresholds are set for both income and deprivation measures independently, in contrast to the approach noted above in which the deprivation threshold is chosen to deliberately give the same proportion of deprivation-poor as are income-poor for the purposes of simplicity in assessing the overlap.

¹⁹ The income threshold is set at 60% of median (housing-adjusted) line. The deprivation threshold is set to include the bottom three levels on the ELSI scale (see Krishnan et al. 2002:36).

²⁰ The comparison here is between those below a 50% income threshold and those identified as poor on a combined income-deprivation threshold using a 60% income threshold for the income component. The two groups are very close in size. The overlap is around 60%. The comparison is not a "pure" income-poor vs. deprivation-poor comparison, but the general finding is not weakened as a result.

A Better Measure of “(Command Over) Resources”?

The findings reported above clearly establish the mismatch between current income measures and more direct outcome measures of poverty. While the focus of the paper is on the mismatch between these two measures in the context of the widespread use of current income as a poverty measure, the question does arise as to whether there are other viable measures of resources that would lead to a better overlap. Three options are briefly discussed below. Each can be understood as a way of getting closer to a measure of “permanent income” or total “command over resources”.

First, the resource measure could be widened to a “full income” one which includes an imputed value of other major sources of material well-being, such as assets and non-employed time (cf. Becker 1965). Travers and Richardson (1993) attempted this in Australia but, as they concede, despite its theoretical advantages “it makes heavy demands on data, the many imputations which are required may reduce the credibility of the index, and it cannot plausibly be comprehensive”. For these reasons the option is not considered further in this paper.²¹

Second, a case can be made for using expenditure or consumption²² rather than income as the measure. When the focus is on resources, the argument is that expenditure is a better proxy for “normal” income than measured income is. A household may be able to smooth its consumption during a temporary low-income period by running down savings or borrowing, for example. When the focus is on the outcome element (living standards), the argument is that expenditure is the preferable measure because individuals and households derive material well-being from the actual consumption of goods and services rather than receipt of income in itself. The use of expenditure or consumption measures rather than income alters the picture of poverty trends and of which groups are most at risk of being poor, so the question is not merely academic. The advantages and limitations of using expenditure rather than income are well established.²³ Conceptual issues aside, the main stumbling block for

²¹ A related approach uses the capability of adults in the household to generate income as the resource measure. The concept of earnings capacity was developed by Garfinkel and Haveman (1977) and has recently been used by Haveman and Bershadker (2001) to generate estimates of “self-reliant poverty”, which identifies those who are unable to be economically independent. They argue that “being incapable of independently securing sufficient income to meet basic needs may reflect a more debilitating and vulnerable situation than being short of cash income in a particular year ... or even living temporarily at a consumption level below a minimum acceptable standard” (p.337). The measure is relevant only for those who live in households headed by a working-age person.

²² Expenditure and consumption differ conceptually in how they treat items that have an extended economic life (housing, vehicles, furniture, appliances and so on). Consumption incorporates the value to the household of the consumption of the services deriving from these goods over their economic life. The literature does not always maintain the distinction, and for the purposes of this paragraph no distinction is made either.

²³ For example, Stephens et al. (1995) compare and discuss results on the two approaches using New Zealand data. Saunders (1997, 1998) discusses the strengths and weaknesses of an expenditure approach compared with an incomes approach with some comparative results using Australian data. Atkinson et al. (2002) discuss the issues in relation to deciding on appropriate indicators of social exclusion for the European Union. Some United States literature was reported earlier.

expenditure-based measures is the difficulty of obtaining complete and accurate household expenditure data.²⁴

Third, increase the accounting period for the household income measure to get closer to a notion of “permanent income” (for example, averaging several years’ income from a longitudinal data set). The study by the OECD (2001) used the average of the last three years’ income and showed that the income poverty rate on this measure was around two-thirds the annual income poverty rate. This approach would give a notion of “persistent” income poverty, which has the advantage of having been shown to have a higher overlap with outcome measures. There is doubtless a place for a measure of income poverty persistence in a comprehensive measurement regime, but it would be a supplement to not a substitute for a current annual income measure.

Current income, with all its limitations, is the predominantly used measure of resources for several reasons: income data are readily available and manipulable, current income currently has no viable rivals, everyone finds it easy to identify with the idea of poverty as being very short of cash, and for modern governments direct income support is one of the most straightforward policy levers available for poverty alleviation. This is the practical reality that is the context for this paper. Mismatch and all, current income measures have a significant place in a policy advice context and are likely always to be with us.

POVERTY CONCEPTUALISATION

The evidence for the mismatch between income and direct outcome measures is very persuasive, and even though there is a plausible and relatively straightforward framework for understanding how it arises, the discrepancy does raise some fundamental questions for poverty measurement as it is usually carried out.

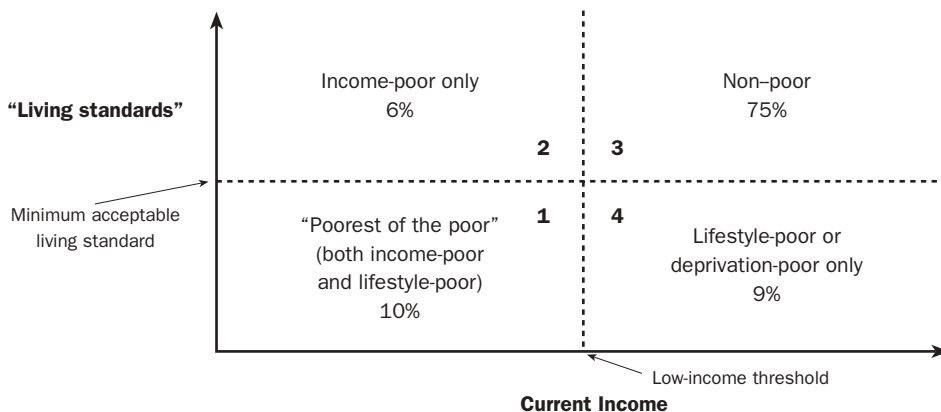
A key issue is the consistency or lack of it between the way poverty is defined and how it is measured. The definition adopted in this paper includes both input and outcome elements. In practice the input element is economic resources measured by current income. The mismatch between measures that reflect these two dimensions raises questions about how they are to be understood in relation to each other. This section outlines a conceptualisation of poverty that is cognisant of the mismatch and provides a rationale for using income and living standards measures separately and together to give a useful core suite of measures for poverty measurement.²⁵

²⁴ In the recent review of the United States poverty measure by the Panel on Poverty and Family Assistance, the expenditure option was favourably considered on conceptual grounds but, as in most other nations, ruled out on the grounds that adequate data were not available in the United States (Citro and Michael 1995, cf. Atkinson et al. 2002).

²⁵ This section draws on Atkinson (1985, 1989), Atkinson et al. (2002), Hagenaars (1986), Muffels et al. (1992), Nolan and Whelan (1996b), Ringen (1988), Sen (1979) and Veit-Wilson (1994).

The diagram in Figure 2 provides a useful analytical framework within which to consider the issues. Illustrative proportions have been put in each quadrant to aid discussion.

Figure 2 Analytical Framework



In the illustration 16% are income-poor and 19% are lifestyle-poor or deprivation-poor (have unacceptably low living standards, measured directly). The mismatch between the two measures is reflected in there being only 10% in quadrant 1. These are the people who are experiencing both income and deprivation poverty and could be called “the poorest of the poor”²⁶. Taking quadrants 1, 2 and 4 together, 25% are either income-poor or deprivation-poor.

There is a prima facie case for seeing quadrant 1 (the overlap quadrant) as being most consistent with the definition adopted in this paper – the poor are those excluded *from the minimum acceptable way of life in their own society because of inadequate resources*. Before examining that conclusion more closely, it will be useful to consider the two measures separately and ask whether each on its own can be consistent with the definition, or whether the definition itself has to be modified or set aside.

A useful starting point is to recognise that current income enters poverty measurement in two distinct ways. (See Table 4 below in conjunction with the rest of this section.) First, when the focus is on the living standards dimension, income is seen as a proxy or indirect measure of material well-being, in contrast to deprivation or other outcome indicators, which

²⁶ The literature uses a range of descriptions for those identified in quadrant 1. For example, Halleröd (1995) uses “truly poor”, Nolan and Whelan (1996b) use “consistently poor”, and Bradshaw and Finch (2001) use “core poor”.

are direct measures. This is a relatively common view of the place of income measures and it is this conceptualisation that is severely challenged by the mismatch evidence presented in this paper. Low current income has been shown to be a poor proxy for low living standards and is an unreliable predictor of “exclusion from the normal life of society”. To conceptualise income as an “indirect” measure of poverty when the focus is on outcomes is both unsustainable (because of the mismatch) and unnecessary (as there is an alternative way of looking at it). If the concern is with inequalities of outcomes or results, then the direct approach to measurement should be used so that conceptualisation and measurement method correspond (Ringen 1988).

Income can enter poverty measurement in a second way. When the focus is on the adequacy of resources and the concern is with inequalities of opportunity (irrespective of what living standard is achieved), then current income can be seen as a measure of poverty in its own right. The outcomes approach using direct measures identifies those households whose actual consumption levels on a range of identified items fail to meet minimum acceptable standards. On the other hand, the income (or input) approach identifies those who do and do not have the ability to attain those levels, irrespective of what is actually achieved, assuming the usual constraints on spending patterns in their society. Hagenaaers (1986) is representative of those who adopt this view: “it is the command over resources to satisfy needs that a poverty definition should be concerned with, rather than the actual consumption of some specific goods” (p.8).

This brings into sharp focus the question of whether it is possible to finesse the conceptualisation so that the use of an income measure can be brought into line with the definition used in this paper. One way of doing so is to make a distinction between “actual exclusion” and “potential exclusion”. For example, the rationale for an income poverty line that is set by focus groups or a budget standards approach is that those with incomes at this level will just avoid deprivation provided they spend in line with the prescription and do not have special needs. In other words, an income approach of this sort can be seen to identify those who are potentially excluded because of lack of economic resources, all else being equal.²⁷

If the introduction of the notion of “potential” exclusion is considered too awkward or to be outside the spirit of the definition, then the alternative is to set the definition aside, and justify a focus on income measures by reference to equality of opportunity or citizens’ rights to a minimum level of resources (cf. Atkinson 1985, 1989), and the importance of income support in a modern government’s poverty alleviation policy (cf. Stephens and Waldegrave 2001).

²⁷ The use of arbitrary proportions of the mean or median (e.g., 50%, 60%) does not fit with the definition as there is no explicit linkage between the income threshold and an assessment of the likely possible living standards. The rationale relies on a loose notion of “distance” from average income.

Table 4 Comparison of the Two Approaches to Poverty Measurement

	Resources or Input	Living Standards
Primary measure	Current income	Deprivation indicators
Proxy or indirect measure	n/a	Income
Policy perspective	Inequality of opportunity	Inequality of result
"Exclusion" (potential or actual?)	Potential (all else equal)	Actual

Can outcome measures on their own be considered consistent with the definition? The best contenders are measures based on questions of the Mack and Lansley type, where respondents are asked whether a particular lack is due to financial constraints or to some other factor. The prime rationale for this sort of question is that the formulation goes some way to distinguishing between lacks arising from preferences and those arising from financial constraint. There are two reasons for questioning whether it is sufficient to rely on individual assessments of whether financial constraints are what are leading to a particular deprivation or lack. Some households on low incomes may have grown accustomed to doing without and are either no longer aware or are too embarrassed to acknowledge that they cannot afford things which most people have. Others on "adequate" or better incomes may report enforced lacks because, for example, their preferences have led them to prioritise spending on items not considered "essentials" by society. Using wider societal standards rather than simply individual assessments could well lead to a reversal of the individual assessments made in these two circumstances. Mack and Lansley recognised that there may be difficulties in taking at face value respondents' own evaluations of whether lack of an item is due to financial constraints. They therefore provided alternative estimates of poverty adjusting for both "low expectations" and for "high spending" (1985:176ff).

As in the case of income measures, there are some difficulties in arguing that outcome measures on their own (even those based on questions of the Mack and Lansley type) comfortably fit the definition used in this paper. On the other hand there is a legitimate policy interest in those whose actual living conditions are unacceptably low based on a focus on equality of outcomes and a recognition of inter-dependence.

Because of the difficulties in having either the income or the outcome measures fitting comfortably with the definition proposed in the paper, some have opted for using both measures together as the best way of achieving consistency between definition and measure. This more stringent approach sees both the outcome and income measures as "more or less inadequate" (Halleröd 1995) in terms of measuring poverty understood as *exclusion from the minimum acceptable way of life in one's own society because of inadequate resources*.

In advocating the twin-criteria approach Ringen (1987, 1988) argues that:

Resource indicators alone can only say something about the probability of deprivation in way of life. Low income, for example, may represent only a temporary and atypical situation which does not force the person in question to change his life style – he may for a while live off savings – and there may be ways of avoiding a life in deprivation in spite of low income, such as to live on someone else’s income. To ascertain poverty we need to identify directly the consequences we normally expect to follow from low income. On the other hand, to rely on way of life indicators alone, that is, to go all out for direct measurement, is also insufficient since people may live as if they were poor without being poor ... We need to establish not only that people live as if they were poor but that they do so because they do not have the means to avoid it. (Ringen 1987:161f)

This approach has been used by Callan et al. (1993) and Halleröd (1995), and has been extensively developed by Nolan and Whelan (1996a, 1996b). It is now used as the primary measure of poverty in Ireland’s National Anti-Poverty Strategy, and has been included for consideration in the child poverty measurement discussion paper prepared by the United Kingdom’s Department for Work and Pensions (2002). Gordon et al. (2000) also use a twin-criteria definition, but rather than using a simple overlap based on separate scales they use multivariate statistical techniques to separate the population into two groups, the poor and the non-poor, on the basis of deprivation scores and income.

The twin-criteria approach certainly has an easier fit with the definition used in this paper, but poverty alleviation policy has an interest in *all* those in quadrants 1, 2 and 4 (as well as those in quadrant 3 who may be “precarious”). This must raise questions about the usefulness of the definition itself, or at least with its strict interpretation and application.

In a comprehensive reporting regime, the trends and relative sizes of all four statistics (10%, 16%, 19% and 25%) are relevant. The relative priority to be given to one or more over the others is a matter for debate, and the decision depends in part on the purpose for which the information is to be used. All are needed to round out the picture and to accommodate an approach to understanding poverty that recognises its multi-dimensional nature. The poverty profile varies depending on which part of the hardship zone (quadrants 1, 2 and 4 in Figure 1) is examined. The relative strengths of the factors that influence living conditions also vary with the part of the hardship zone under scrutiny (Nolan and Whelan 1996b).²⁸

²⁸ A key element of the next phase of the Ministry of Social Development’s living standards research programme is to improve our understanding of the factors (in addition to current income) that influence variation in living standards.

By incorporating several measures into a reporting regime, the dynamic element of poverty analysis can be better highlighted. For example, some of those in quadrant 2 (income-poor only) may not be able to sustain their consumption and would therefore end up in quadrant 1. Some of those in quadrant 4 (deprivation-poor only) may, with sustained income above an income poverty threshold, be able to move to quadrant 3 (non-poor), and so on. Understanding the factors contributing to these and other changes can only be of assistance to poverty alleviation policy.

DISCUSSION OF IMPLICATIONS

The discrepancy between the two measures of poverty is significant, but hardly surprising. What is surprising is that there has not been more widespread effort to develop robust outcome measures, and that there has not been more interest in exploring the relationship between the two measures on the basis of findings from existing studies. This closing section outlines 10 implications of the findings reported in this paper for poverty measurement, for poverty alleviation policy and for future data collection and research.

Shift in Mind-Set Required

1. Because the bulk of the literature and monitoring reports use income as *the* poverty measure, it is difficult not to immediately think of income measures when discussing poverty. To help with the paradigm shift, it may be useful to adopt the convention that is increasingly evident in the literature and talk about “income poverty” and “deprivation poverty” or “lifestyle poverty”, rather than just “poverty”, unless we are talking at the more general level.
2. We need to have a clear understanding of the two quite different ways that income enters poverty measurement analysis. First, it is used as a proxy or indirect measure for poverty conceived as unacceptably low living standards. It is this usage that is vulnerable to the mismatch evidence summarised in this paper. Second, income is used as a key measure of resources when the focus is on equality of opportunity or citizen rights to a minimum income (regardless of how it is spent).
3. Even with the finessing of the conceptualisation so that income measures have a place in their own right, the mismatch between the two measures still exists. We need to be aware of the mismatch and be especially careful when the two measures identify similar proportions as poor, whether at the population or sub-group level – only around half are likely to be the same people.

Reporting on Poverty

4. In measuring and reporting on poverty, both income and deprivation or other outcome measures should be used, fully recognising the values and limitations of each. The two sorts of measures are conceptually different and the empirical evidence shows that they are tapping into quite different underlying groups. They each provide different types of information that can be usefully combined for analytical and policy purposes and for reporting on poverty trends. The process for combining the information can be by synthesising the separate stories or by using the information simultaneously as advocated by Nolan and Whelan (1996b), Gordon et al. (2000) and others. To use one measure on its own to report on poverty trends is highly likely to give a misleading picture of what is a complex and multi-dimensional phenomenon. The decision about which, if any, measure to give priority to will be influenced to a large degree by the use to which the information is to be put.
5. Considerable interest is generated by international comparative studies which rate New Zealand's performance on key social outcomes against those of other industrialised nations. There have been recent releases on income-based child poverty (UNICEF 2000), a comparison of child benefit packages (Bradshaw and Finch 2002), more general comparisons of child outcomes on a range of indicators (Blacklock et al. 2002) and overall income poverty (OECD 1999). What is missing is a comparison of ratings on outcome measures of hardship to round out the picture.²⁹

Policy Implications

6. The substantial mismatch between the income and living standards measures of poverty may for some analysts significantly diminish the perceived value of the income lever in poverty alleviation policy. This would be to misinterpret the results. First, from a conceptual perspective, income can enter the poverty discussion not only as a predictor of unacceptably low living standards, but also through the lens of equality of opportunity or minimum citizen rights. Second, from an empirical perspective, the large mismatch is between *current* income and living standards. The finding is not that income (generally) does not matter; it is that current income alone has a somewhat loose relationship with living standards, certainly looser than is often implicitly assumed. On the other hand, income measured over a longer period has a higher correlation with living standards than income in the short term. Thus, the impact of any decrease or increase in current income that is likely to last over several years should be weighed more carefully.

²⁹ The OECD Programme for International Student Assessment (PISA) developed a family wealth index based on a 2000 survey of 15-year-old students across all OECD and some non-OECD countries (see Grimes 2002). The index is useful for its purpose within the PISA research but is not likely to be sensitive at the lower end of the distribution, and it applies only to households with children, which excludes around half of New Zealand's households.

Data Collection

7. To generate ongoing time series and to allow analysis across the different approaches, we need a regular survey that at a minimum collects adequate data on household income from all sources, data on expenditure, assets and savings, and information on “outcome” indicators along the lines of the 2000 Living Standards Survey and the ECHP. Questions similar to those in the ECHP would facilitate international comparisons, at least with European nations. In addition to high-quality cross-sectional data, a longitudinal survey is needed to enable a comprehensive analysis of poverty dynamics using at least income and deprivation measures, and preferably with assets and saving information as well. Statistics New Zealand’s Longitudinal Survey of Income, Employment and Family Dynamics is well placed to be the vehicle for the data collection.

Further Research and Analysis

8. The development of robust outcome measures is a priority. Income measures are very well developed with sophisticated techniques now regularly used, international conventions in place, and the strengths and limitations well canvassed (albeit not always acknowledged). The literature and knowledge on outcome measures are relatively undeveloped and not as widely spread.
9. There is a clear need for a concerted effort to better understand the relationship between income, expenditure and material well-being at the low end of the distribution. Saunders (1998) notes in an Australian context that that “this would appear to be fertile ground for new work”, and given the scarcity of analysis on this in New Zealand the same would apply (cf. Stephens et al. 1995).
10. The next advances in the development of valid, policy-relevant and publicly credible poverty measures are likely to involve efforts to work out how best to use the information from a range of measures, including both income and outcome measures. Investigations of “overlap” indicators describing the “multiply poor” are likely to become more common. The four-quadrant analysis (Figure 2) provides a framework for investigating the characteristics of the differing groups identified as “poor” by the different criteria, and for seeking a better understanding of the processes and factors that lead to citizens experiencing unacceptable material hardship.

So, the mismatch, though sizeable, need not be seen as a serious impediment to poverty measurement, but rather as a spur to greater endeavour, an opportunity to further develop the conceptualisation and analytical apparatus needed for poverty measurement and discourse. Income and deprivation measures are distinct indicators, each with a contribution to make

to our understanding of poverty. Used on their own, they can each be misleading. Used together they can round out the picture and, more fundamentally, assist with the understanding of the factors and processes that contribute to the *exclusion of citizens from a minimum acceptable way of life in their own society because of inadequate resources.*

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