The government has pledged to eliminate child poverty by 2020, and has set itself a series of intermediate targets for reducing the number of poor families between now and then. One of the targets announced in 2004 involves monitoring the number of families who experience material deprivation, as well as having a low income.

There is a long history of research showing a strong relationship between low income and indicators of deprivation at a point in time. This leads to the expectation that a family’s living standards would rise and fall roughly in line with changes in income – exiting poverty should mean ending hardship. The aims of this research were to promote our understanding of how people experience deprivation over time, as their incomes rise and fall.

The research was based on analysis of the Families and Children Survey and the British Household Panel Survey. Both surveys have interviewed the same families year after year. This allows us to study the dynamics of income and deprivation over time.

**Key findings**

**Measuring deprivation**

Deprivation scores are a useful indicator of low living standards, but should not be interpreted as an actual measure of poverty. In particular, deprivation has to be treated as a relative concept (just like low income), with indicators recalibrated every year.

**Variations between families at any point in time**

Analysis of deprivation indicators in 2002 showed that families with a low income were highly deprived. As expected, higher income families were less deprived, but the relationship between income and deprivation was much less pronounced at higher levels of income.

Other family characteristics were associated with high deprivation scores even after taking account of income. These included:

- single people/lone parents compared with couples;
- younger rather than older children;
- very large families;
- being out of work and on IS (Income Support);
- tenants rather than owner occupiers.

**Underlying relationships**

When families’ incomes, and their deprivation scores (and other characteristics) were averaged over a (seven year) period, then there was a very strong relationship between these factors. The long-run poor are long-run deprived.

When the rises and falls in families incomes were plotted over the period, there was a tendency for deprivation to fall and rise at the same time. But the relationship from year to year
was much weaker than the underlying one. A family who increased their income would improve their living standards, but would still be worse off than a family who had a higher income all along.

Conclusions

The relatively weak longitudinal relationship between income and deprivation means that families who dip into poverty just for a short period need not be a primary area of concern. The converse, though, is that those in long-run poverty suffer even more deprivation than might have been feared; and that a temporary escape from poverty will do little to alleviate their position.

The implication seems to be that permanent improvements in poor people’s underlying economic positions are required.

Summary of research

Measuring deprivation

An index of material deprivation is an attempt to summarise the living standards of families at different levels of income, based on survey questions about whether people do or do not have certain items; can or cannot afford to participate in normal daily activities; and find it easy or difficult to manage their budgets. Deprivation indicators have been interpreted in two distinct ways, depending on what one means by the word ‘poverty’.

• One view is that poverty consists of a low income (one of whose main symptoms is a low standard of living). This view requires only a weak set of assumptions about deprivation scores – they are just an indicator, used to identify groups at risk of poverty or to calibrate a poverty line.

• An alternative view is that poverty consists of low living standards (one of whose main causes is a low income). This view requires a much stronger set of assumptions about deprivation scores – they have to be comprehensive enough and reliable enough to be treated as an actual measure of poverty.

This study was based on the view that no index can support the strong set of assumptions required to treat it as a direct measure of poverty.

It used the weak set of assumptions which treat the survey data as just an indicator.

One reason for adopting the weak assumption was that the analysis showed a steep reduction in measures of deprivation over a seven year period, over and above any trend that could be explained by improvements in income. This means that deprivation has to be treated as a relative concept, recalibrated every year. If it were treated as an absolute measure, it is likely to disappear of its own accord.

Variations between families at any point in time

Although the ultimate interest was in the ‘longitudinal’ relationship between income and deprivation over time, the analysis started by focusing on the position in a single year (2002).

As expected, families with low incomes had high deprivation scores; and high incomes were associated with low deprivation scores. The shape of the relationship was curved, so that the rate of decrease in deprivation with increasing income was steeper at the lower end of the income distribution, and flatter at the upper end.

The relationship between income and deprivation was very steep if income was the only set of predictor variables used. It was much flatter (though still significant) if the effects of other characteristics were taken into account. This implies that some of the apparent relationship between income and deprivation is explained by other factors (which are associated with income) rather than by income in its own right.

The number and ages of family members were also directly related to deprivation scores, even after taking income into account.

• Couples reported slightly lower deprivation scores (on a given income) than single people or lone parents.

• Young children had a larger adverse effect on deprivation levels than older children.

• Families with one or two children were not much worse off than those with none; a third or fourth child made more of a difference; but it was families with five or more children who recorded very high deprivation scores.
Families and households with at least one worker recorded lower deprivation scores than those with no worker, even after allowing for the fact that they had higher incomes. But the receipt of certain benefits Working Families Tax Credit (WFTC and Income support (IS) was often associated with relatively high deprivation scores. Those out of work and on IS were in by far the worst position; those in work and on WFTC were significantly better off; while those in work and above the WFTC threshold were best off, even after allowing for income. Since these sources of income are obviously associated with the amounts of income, it is difficult to work out what the exact effects are.

Households who owned their home outright had below average deprivation scores; tenants had above average scores; in both cases after allowing for income and other characteristics.

Other variables associated with deprivation included age, educational qualifications and region. But the four discussed above – income, family structure, income sources and housing tenure - were the most important.

Analysis of the underlying relationships, using the first of these approaches, showed that all the sets of variables that helped to predict deprivation in the ‘cross-sectional’ analysis were just as strongly associated when compared over a seven year period. These were exceptionally strong relationships. But we still cannot be sure that this underlying relationship is directly causal.

So the ‘within-cases’ analysis was designed to look directly at what happened to people’s deprivation scores when their income changed. The analysis used a sequence of seven waves of the BHPS, and a complex within-cases model.

The longitudinal relationship between income and deprivation was about half as strong as the underlying relationship had been. That is, people with consistently low incomes had consistently high deprivation scores; if someone’s income increased, their deprivation reduced, but not enough to make them as well off as someone who had had the higher level of income all along.

Part of the longitudinal relationship was ‘lagged’ – a change in income between one wave and the next had an immediate effect, but also a further, delayed, effect the following year. But there was no sign of a continuing response beyond the second year.

Looking across the range of predictor variables:

- Some of the influences were just as strong in the longitudinal analysis as in the underlying analysis, and these can be interpreted as true causal effects – improving the characteristic will lead to a reduction in deprivation. These robust indicators include employment and partnership status.

- Other longitudinal influences were weaker than their underlying equivalents. Only part of the overall effect can be interpreted as truly causal, and investments in these areas may pay a reduced dividend. These less efficient
indicators include (crucially) income, but also benefits received and housing tenure.

- A third group of variables had no longitudinal relationship with deprivation, and have to be interpreted as reflecting permanent characteristics of the family, rather than dynamic influences on living standards. These are educational qualifications and (surprisingly) large family size.

## Conclusions

Working out the precise relationship between income and material deprivation over time turned out to be a complex task. There were two main differences between the simplest possible and the final complex measures:

1. **The effects of other disadvantaging characteristics in their own right, as well as income itself.** Family composition, income sources (as opposed to income amounts) and housing tenure all had a direct association with deprivation; and that some apparent effects of income were actually explained by these other factors.

2. **The distinction between underlying and longitudinal relationships.** Underlying relationships over a period of time were much more effective at explaining deprivation scores than variations over time within that period. To the extent that year on year changes in deprivation can be accounted for, the effect of income is about half as strong as it appeared in the underlying model. But it was still strong. People really do get better off when their income rises!

The rapid year-on-year reduction in absolute measures of deprivation, unexplained by changes in income or other characteristics, means that some form of continuous recalibration is required if an index is to provide a valid measure of relative deprivation over a period. Otherwise deprivation-poverty will disappear of its own accord.

The findings also indicate some potentially important lines of policy strategy. For example:

- the fact that moving in and out of employment has a strong effect on deprivation levels, independent of income, endorses the current view that ‘work is the best route out of poverty’. But it is well-paid work, clear of the WFTC line, which brings the greatest improvements in material well being.

- Some unexpected variations by family composition might be taken into account in a review of scale rates for benefits and tax credits.

- The variations by housing tenure support the view that owner-occupation is best, but also focuses attention on the plight of the dwindling group of families who remain excluded from owner-occupation.

The relatively weak longitudinal relationship between income and deprivation means that families who dip into poverty just for a short period need not be a primary area of concern. The converse, though, is that those in long-run poverty suffer even more deprivation than might have been feared; and that a temporary escape from poverty will do little to alleviate their position.

The implication seems to be that permanent improvements in poor people’s underlying economic positions are required. This implies, on the one hand, policies to encourage steady employment, high earnings (and perhaps even partnership stability); and, on the other hand, an adequate income for those who are obliged to remain on benefit for long periods.


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