Department for Work and Pensions

Working Paper No 28

Measuring child poverty using material deprivation: possible approaches

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A report of research carried out by the Department for Work and Pensions

Corporate Document Services

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Summary

In the interim period, prior to the Family Resources Survey (FRS) deprivation questions becoming available, it has been important to learn as much as possible about this new measure by performing in-house analysis using the Families and Children Study (FACS).

Chapter 1 sets out the UK Government's pledge to eradicate child poverty and its final conclusions (and targets) on the child poverty measure to be used for the long term. A tiered approach is to be used with headline measures of low income. This report focuses on the material deprivation element of the measure, which combines relative low income and material deprivation.

Chapter 2 discusses deprivation measures, and their popularity in recent times. The enforced lack approach has been adopted, which means that an item is counted as lacking if it cannot be afforded. The advantages of using a combined approach (those that are both income and materially deprived) to identify the poor are outlined. Other features of the measure include: a higher income threshold, use of the Modified OECD scale for equivalisation, and income calculated on a before housing costs basis.

Chapter 3 details the analysis presented in this report and focuses on the data source under investigation. It discusses the deprivation information collected in the FACS survey and its collection over time. Various checks and steps were required in setting up the data to be analysed. Key decisions, such as how income was treated and an income threshold achieved in the FACS survey are detailed. Questions in the FACS survey were selected on the basis of closely measuring the same construct as those in the FRS. The FACS survey allowed us to look at deprivation over time, revealing a steady decline from 2001 onwards. The FACS survey provided a valuable opportunity to inform the material deprivation element of the measure prior to the availability of the deprivation indicators newly introduced to the FRS.

Chapter 4 examines the possible methods for creating a summary score deprivation index. A simple count index and prevalence weighted index are presented for comparison. The weighted approach presented is that of prevalence, which ranks the relative importance of deprivation indicators by the level of ownership in the

population. It was concluded that the weight should be constrained (or anchored) to the 2001 baseline ownership level. There are numerous ways in which a deprivation index can be weighted. It is recognised that a range of other methods could be used to create a deprivation index.

Chapter 5 looks at determining a deprivation threshold by eye and the possibility of using statistical analysis. A threshold for the FRS survey cannot be determined until the data becomes available in 2006 and results have been obtained.

Chapter 6 discusses the updating of deprivation items and the rebasing of the measure. Early advice from experts indicated that the measure should be reviewed every few years. The chapter concludes that we will need to review items every few years, in advance of the measure being rebased at possibly five-yearly intervals.

1 Background

1.1 Introduction

This report presents analysis to inform the material deprivation element of the new UK child poverty measure, which is material deprivation combined with low income. It briefly outlines the consultation work leading to the choice of measure and the methodological work that has been conducted thus far to finalise this tier of the child poverty measure. It highlights the considerations that have been taken into account and the available options.

The individual chapter content proceeds as follows:

• Chapter 2 discusses poverty measurement and concepts of material deprivation;

• Chapter 3 moves on to look at the analysis to be conducted, and its restrictions, using the Families and Children Study (FACS);

• Chapter 4 provides details on creating material deprivation indexes;

• Chapter 5 looks at selecting cut-offs or thresholds to identify the materially deprived; and

• Chapter 6 discusses measuring material deprivation over time.

This chapter details the UK Government's target on poverty, the final agreed measure of child poverty for the long term, the consultation exercise that took place and other available indicators of poverty and social exclusion.

1.2 The Government's target on child poverty

In March 1999, the Prime Minister announced the Government's commitment to eradicate child poverty in a generation. As we move towards this goal we want to make sure that we are measuring child poverty in a way that helps target effective policies that make a real difference to children's lives, and in a way that clearly shows whether, and how far, we are progressing. This is a joint target with Her Majesty's Treasury.

1.2.1 Consultation options

Following on from our preparatory work examining a range of approaches across a number of different countries, the measuring child poverty consultation was launched in April 2002 *(Measuring child poverty: A consultation document[1]).*

We consulted a wide range of stakeholders, including those with direct experience of poverty, and academic experts in the field. The consultation was open to anyone with an interest in measuring child poverty. The document was launched with a Department for Work and Pensions (DWP) press notice and initially sent to over 150 individuals and organisations. Many more copies were distributed at events we hosted.

1.2.2 Final conclusions

Measuring child poverty[2] set out the Government's final conclusions in December 2003, and outlined the measure of child poverty for the long term.

Following the consultation exercise, and further methodological work and discussion with experts, a tiered approach was chosen as the best way to monitor progress on child poverty in the long term.

1.2.3 The new child poverty measure

The Government's new measure of child poverty, announced in December 2003, consists of:

• *absolute low income* – to measure whether the poorest families are seeing their incomes rise in real terms;

• *relative low income* – to measure whether the poorest families are keeping pace with the growth of incomes in the economy as a whole; and

• *material deprivation and low income combined* – to provide a wider measure of people's living standards.

These inter-related indicators (tiers) capture different aspects of poverty whilst respecting the finding of our consultation that income is at the core of people's conception of poverty.

The material deprivation tier will not only give a wider measure of people's living standards, but it will also capture elements of persistent poverty, as highlighted in the final conclusions of the child poverty consultation.

The criteria for developing such a measure, outlined in the Government's consultation, included that it should be timely, robust to scrutiny, credible with the public and consistent over time.

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[1] http://www.dwp.gov.uk/consultations/consult/2002/childpov/childpoverty.pdf

[2] http://www.dwp.gov.uk/consultations/consult/2003/childpov/final.pdf

1.3 Supporting information/indicators

In addition to the new child poverty measure for the long term, the Government's cross-cutting report on poverty and social exclusion *Opportunity for all*[3], will continue to be produced – this includes indicators around children and young people that capture many aspects of poverty such as low income (before and after housing costs), health inequalities, educational attainment and housing quality. A measure of persistence is also included as part of the low-income indicators, based on British Household Panel Survey (BHPS) data.

The UK will also continue to produce its National Action Plan[4], which sets out progress in relation to poverty and social exclusion as part of its commitment to the eradication of poverty across Europe.

1.4 Summary/conclusions

This chapter has set out the UK Government's pledge to eradicate poverty and its final conclusions on the child poverty measure to be used for the long term, following an extensive consultation exercise. A tiered approach is to be used with headline measures of low income, including absolute low income, relative low income and low income combined with material deprivation. This report focuses on the material deprivation element of the measure.

Alongside this measure, other indicators of poverty and social exclusion will continue to be produced in *Opportunity for all*, which sets out the UK Government's strategy on poverty and social exclusion, and the National Action Plan, which supports the measurement of poverty at the European level.

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[3] http://www.dwp.gov.uk/ofa

[4] http://www.dwp.gov.uk/publications/dwp/2003//nap

2 Material deprivation element of the child poverty measure

2.1 Introduction

This chapter looks at the various approaches to poverty measurement – direct and indirect – then focuses on the direct measurement of living standards via material deprivation indicators. It discusses the adoption of an enforced lack approach, whereby items lacked because they cannot be afforded are counted as constituting deprivation in our measure.

Specific features of the material deprivation element of the measure are outlined, for example the higher income threshold (70 per cent of contemporary median income). Earlier research which looked at the relationship between low income and material deprivation is also explored. The chapter concludes by detailing the analysis required, using the Families and Children Study (FACS) survey, to inform the material deprivation measure.

2.2 Approaches to poverty measurement

Poverty measures have been described as falling into two broad camps: indirect and direct measures (Ringen, 1988; Halleröd, 1995). An indirect measure would use income (typically with an income threshold or poverty line used to identify the poor, for example, Sen, 1979). Income cut-offs used to identify the poor are often viewed as arbitrary. In contrast, a direct measure would use questions that try to measure the actual outcomes *'…the living standard people actually enjoy, and poverty is measured in relation to the outcome when different kinds of resources have been transformed into living standards.'* (Halleröd, 1995, pp. 114).

Direct measures have gained wide support, with a belief that they can tackle some of the issues associated with indirect measures. For example, it is difficult to get an accurate calculation of a household's income and income is often misreported by respondents in surveys. It has long been stated that poverty is not just about money and concerns exist that focusing solely on income may miss important aspects of what it means to be poor (Nolan and Whelan, 2005). This ties in with the view that poverty is multi-dimensional, and that its measurement should encompass a variety of dimensions and not just income (Perry, 2000).

Indirect measures also assume that there is a direct and clear relationship between people's economic resources (income) and their standard of living, whereas research has shown that people with the same level of income do not necessarily share the same standard of living. However, as Halleröd (1995) points out, direct measures too have shortcomings, and a common objection is that such measures may merely reflect preferences in spending behaviour rather than an inability to buy particular items.

Direct measures of poverty, living standards in particular, may be used in isolation or in combination with income. One measure of living standards or well-being much favoured in the social policy world is material deprivation. Material deprivation indicators should compensate to some extent for the misreporting of income, which is a particular problem at the lower end of the income distribution.

2.3   What is material deprivation?

Most material deprivation measures generally ask respondents about the ownership of items regarded as 'necessities' by a majority of the population. People are then classified as 'deprived' if they go without some of these items. Poverty measures based on this type of information are also known as consensual poverty measures. Essentially, the absence of items is taken to reflect deprivation and the greater the number of items absent, the greater the degree of deprivation (Townsend, 1979; Desai and Shah, 1988; Mack and Lansley, 1985; Nolan and Whelan, 1996; Goodman and Myck, 2005).

Interest in deprivation indicators (or indicators of living standards) has been growing and is associated with the early work of Townsend (1979). Townsend's intention was to develop indicators of objective deprivation to measure when individuals lacked an amenity, or did not participate in an activity, that the majority of the population possessed or participated in. The deprivation indicators were used to identify a point in the income distribution at which poverty was indicated. An alternative approach was developed by Mack and Lansley (1985) using 'socially prescribed necessities' as deprivation indicators; they used these to directly identify the poor. In this way those who **cannot afford** items that the majority in society say are necessary were defined as poor.

More recent studies have renewed interest in direct measurement of poverty by presenting measures based on different sets of deprivation indicators. For example, the Poverty and Social Exclusion Survey of Britain was conducted in 1999 and included 54 questions (Gordon *et al.*, 2000), which aimed to do this.

2.3.1   Enforced lack approach

In most research nowadays, respondents are asked to clarify if they do not have or consume an item whether this is because: a) they do not 'need' it, or b) they 'cannot afford' it. It is, therefore, possible to distinguish between 'unenforced' and 'enforced' hardship. There has been considerable debate around this issue.

The enforced lack approach helps to discriminate between those not choosing to have necessities and those forced to do without necessities because of a lack of economic resources (Halleröd, 1995). As mentioned earlier, Mack and Lansley (1985), following on from Townsend (1979), defined poverty as an enforced lack of socially perceived necessities in order to introduce the role that choice plays in the ownership of items. Further advances were made on their research by Halleröd (1994) and Nolan and Whelan (1996).

Recent research has drawn further attention to the role choice plays and how different groups respond differently (e.g. Cappellari and Jenkins, 2004). Different social groups are likely to respond differently, with a greater or lesser likelihood of responding that an item is lacked through choice. For example, research has shown that younger people are more likely to say that they can't afford items compared to others, whereas older people are more likely to say that they don't need items (McKay, 2004). The danger is in ascribing the label 'poor' to a person that preferred to use their resources on items not included in the direct poverty measure.

McKay (2004) also comments that there is limited agreement over which items are considered those which a family should be able to afford and that there are both age and social class differences in the rating of necessities. Research has shown that some households lack several items and hence, could be classified as deprived yet they may own various items that are not deemed necessities by the rest of society, which calls into question whether this behaviour is preference rather than poverty. The author argues that you cannot assume being unable to afford something constitutes deprivation rather than merely reflecting choice over which items to own. Furthermore, the deprivation literature also assumes that people will seek essential items or necessities before they try to acquire non-essential items. An unenforced approach to deprivation can produce as reliable results as an enforced lack approach (McKay, 2004).

This evidence does not rule out the use of the enforced lack approach but merely questions it. Research evidence has not highlighted differential responding in families with children on deprivation indicators and therefore this is not an issue of concern for the group in question. Much of the literature has compared findings amongst older people and the general population, whereas **families tend to differ from the general population much less**.

2.3.2   Combining low income and material deprivation

Goodman and Myck (2005) highlight the benefit of a material deprivation measure over income, they state: *'we can use material deprivation as a proxy for long-term financial status…'* and conclude *'material deprivation seems to contain some additional information about a family's financial well-being, over and above the information summarised in the level of current disposable income.'.* This means that measuring deprivation will add to income measurement and can be more reliable in indicating long-term financial situations than a snapshot measure of income.

Muffels (1993) described income and deprivation as separate concepts in poverty measurement and concluded that they should complement each other rather than act as substitutes for each other. Ringen (1988) promotes the twin criteria approach because this means that you exclude those with a low standard of consumption for reasons other than low income in your poverty definition. The combined approach also compensates for the inability of any one poverty measure to be truly perfect.

Halleröd (1995) combined a direct and indirect measure of poverty to identify the 'truly poor'. In this way, you do not incorrectly define as poor those who are deprived and not in low income or those who are in low income but not deprived. Halleröd argues that direct and indirect poverty measures should be combined to produce a more robust measure. By combining the two methods you drop those only identified as poor by one method, in this way all the poor have both low income and low living standards. This should also minimise the role that choice plays, as discussed in the previous section, in that those who have not chosen to obtain necessities and are thereby defined as deprived will only be classed as poor when they are also in low income.

Ringen (1988) commented that there were several reasons as to why you could not assume that low income and low consumption would overlap. There is not a perfect relationship between income and living standards and it is widely recorded that measured incomes do not always reflect living standards. Perry (2000) said that this mismatch is large and generally between 50 to 60 per cent. Research looking at the overlaps in dimensions of poverty clearly shows that those who are both income-deprived and materially-deprived are very different from the non-deprived, and the difference is much more pronounced than when using one of these measures in isolation (Bradshaw and Finch, 2003). This further supports the use of a combined income and deprivation tier and highlights that this may be especially informative.

The overall aim is to achieve a combined measure of material deprivation and low income that will endure for the long term, and provide the right balance between clarity and comprehensiveness.

2.3.3   Features of the material deprivation tier of the measure

Some features of the material deprivation element of the new child poverty measure have already been agreed.

Low income and material deprivation combined

Measuring child poverty (DWP 2003) concluded that a better measure of living standards can, at any point in time, be obtained by measuring both low income and material deprivation combined so that we can focus on households whose low incomes are leading to deprivation. This is similar to the approach used in the Republic of Ireland. It has been highlighted by a number of experts in the field that using income and deprivation in combination also helps to negate the problematic issue of choice associated with deprivation items. Nolan (1999) stated: *'A more reliable measure can be constructed by combining low income with suitable direct indicators of deprivation…'.*

Equivalisation

Analysis of European Union (EU)-wide indicators, carried out by Eurostat for the EU, uses the Modified Organisation for Economic Co-operation and Development (OECD) equivalence scale. So using this scale in our long-term measure of child poverty will promote consistency with this methodology, and allow direct comparison with other EU member states.

The Modified OECD scale differs from the McClements scale in the weights assigned to adults and children. A specific difference – and an important advantage – is that the Modified OECD scale allows for significantly greater costs for young children. Analysis has shown that the use of the Modified OECD scale has a broadly neutral effect on the low-income thresholds. Compared to the equivalent poverty count on the McClements scale, however, the number of children counted as poor will increase.

Before housing costs income measure

The measure is based on a before housing costs basis in order to enable comparison with the EU.[5] No European-wide comparable data on an after-housing-costs basis is available.

Low-income threshold

Measuring child poverty concluded that the material deprivation measure will capture children in families with high unavoidable costs, such as housing costs or childcare, which can adversely impact on living standards and leave people with low disposable incomes. As it incorporates a new higher relative low income line it will count some children as poor for the first time. Using a 70 per cent of contemporary median low-income threshold in conjunction with material deprivation will lead to more children being identified as being in poverty, compared with using a 60 per cent of median low-income threshold combined with material deprivation.

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[5] This is because the UK Government's aspiration is to be amongst the best in Europe.

Using a higher low-income threshold in the material deprivation tier will also help us to capture more of the poverty faced by families with low disposable incomes; these families face certain unavoidable high costs, for example, in areas where rents are high for even basic accommodation. It will also allow us to identify those families at the margins, whose apparently higher income may not be commensurate with their standard of living.

The 70 per cent of median income introduces a second threshold into the poverty measure, which reduces the risk that it could introduce pressures for policies to focus unduly on those with incomes just below a single, arbitrary point.

2.4 Introduction of deprivation items to the Family Resources Survey

As a first step towards the new material deprivation tier, work was commissioned to look at the choice of deprivation items to form the measure and the relationship between low income and material deprivation over time.

When measuring material deprivation, it is not necessary to include a long list of goods and services. The new suite of questions included in the Family Resources Survey (FRS) was arrived at through analysis of all existing UK deprivation data to identify a set of questions which best discriminates between poor and non-poor families. A range of analytical methods was used to select the best subset of questions (McKay and Collard, 2004). The items selected for inclusion in the FRS were selected on the basis of being robust over time and less affected by technological advances or reduced costs. They do not, for example, include consumer durables or food items. Durable goods have been described elsewhere to be widely owned yet not classified as essential by society as a whole (McKay, 2004).

There is a strong relationship between material deprivation and persistent low income. As time spent in low income increases, so does the severity of deprivation (Berthoud *et al.*, 2004). More recently, Goodman and Myck (2005) looked at the relationship between income and material deprivation in lone-parent families, also confirming that income is negatively correlated with material deprivation, as the former goes up the latter goes down; there is also a greater effect on deprivation at the lower end of the income distribution.

The suite of deprivation items was introduced to the FRS' 2004/05 data collection – this block of the survey interview is attached at Appendix A.

2.5 Analysis required to inform the material deprivation element of the measure

Work has already identified the questions that were to be added to the FRS to measure material deprivation. McKay and Collard's analysis showed that it is the **whole suite** of questions that best identifies deprivation and, therefore, all of the deprivation items included in the FRS will be used in the final measure. Since the questions for the deprivation tier have already been determined by research, this left several issues to be resolved, following the child poverty consultation, around how the measure would be constructed. These included how to create deprivation indexes, whether or not to weight items to reflect their importance, how to define deprivation thresholds and how often to update the measure over time.

2.6 Summary/conclusions

The chapter started by discussing general approaches to poverty measurement. Deprivation measures, and their popularity in recent times, are then outlined. The enforced lack approach has been adopted, which means that an item is counted as lacking if it cannot be afforded. It has been noted that some academics have criticised the measurement of deprivation on the grounds that the ownership of specific items may be as much a product of preference as of poverty.

The advantages of using a combined approach (those that are both income and materially deprived) to identify the poor are discussed. Other features of the measure are detailed in the chapter and include: a higher income threshold, use of the Modified OECD scale for equivalisation, and income calculated on a before housing costs basis.

Questions on deprivation have already been introduced into the FRS and other research has helped inform the relationship between low income and material deprivation and assessed how best to measure material deprivation. The analysis presented in this report considers how the deprivation index should be constructed, how a threshold can be selected and how the measure should be updated over time.

3   Analysis of the Families and Children Study

3.1   Introduction

This chapter provides detail about the Families and Children Study (FACS), including some historical information about this survey data source, as well as its measurement of material deprivation over time. Some limitations of this survey are mentioned, for example, the lack of a derived income measure for the self-employed. The chapter also covers how income was treated and how a Households Below Average Income (HBAI) equivalent income threshold was achieved, plus details of the data checks conducted.

The chapter focuses on how the material deprivation items were selected in the FACS survey to match as closely as possible those questions included in the Family Resources Survey (FRS). The chapter explains the benefits of using the FACS survey, such as how the FACS survey has allowed an insight into how the deprivation items may behave over time.

3.2   Scoping work using FACS

In order to inform the methodology for the material deprivation measure, analysis has been conducted using the Department for Work and Pension's (DWP's) FACS survey. This study includes many (though not all) of the deprivation items that are being used in the FRS[6], and has afforded the opportunity to conduct analysis in advance of the FRS data becoming available in 2006.

Although the FACS survey will not be used to derive the deprivation tier used in the child poverty measure, in the absence of FRS deprivation data it provides a useful

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[6]   The FACS survey had 12 items consistently across four waves, compared with 22 items on the FRS.

tool with which to conduct analysis. The FACS survey includes a number of material deprivation questions and given the overlap between the two survey data sources it was clear that these could be usefully utilised here. Furthermore, a key advantage of the FACS survey is that it allows us to look at material deprivation over time, as it is a longitudinal panel survey that has included measurement of material deprivation since its inception. This is the only data source that can provide some indication of the likely changes to deprivation over time.

3.3   The FACS survey data

3.3.1   Measurement of material deprivation

As mentioned, the FACS survey has included questions on material deprivation since its inception in 1999, so allowing us the opportunity to look at deprivation over time.

The questions newly introduced to the FRS include some deprivation items that are already measured in the FACS survey. Some of the deprivation items in the FACS survey exactly match those contained in the FRS whereas others can only act as proxies. Appendix B includes a table, which details the material deprivation items included in the FRS and where equivalent items or proxy measures were available in the FACS survey – see Section 3.6 for further information on proxy measures.

3.3.2   The survey sample

The first two waves of the FACS survey, 1999 to 2000, only included interviews with low-income families. From 2001 onwards, the survey included all families with dependent children. Analysis has, therefore, been carried out for **all** children, according to family income status, for the years 2001 to 2004.

3.3.3   Income derivation

Income is not currently derived for the self-employed in the FACS survey, but deprivation for this group has been shown separately in some parts of the analysis for comparison. Some low-income studies have noted issues relating to the findings among the self-employed group, which can be anomalous in relation to living standards. The HBAI, 2005 report states: *'…it should be noted that a significant proportion of this group* [self-employed] *are believed to report incomes that do not reflect their living standards and that there are recognised difficulties in obtaining timely and accurate income information from this group'.*

3.4   Data manipulation and checks conducted

Various steps were taken to construct the datasets for this analysis. For example, child level datasets were constructed where these were not already available. Further checks were also conducted on the FACS survey datasets, for example in calculating Organisation for Economic Co-operation and Development (OECD) income before housing costs and comparing the FACS survey income series against

the FRS. Further technical information about data construction and data checks is detailed at Appendix C.

3.5   Income poverty threshold

An HBAI equivalent approach was applied to the FACS survey data, in order to achieve proportions of children in income poverty capable of grossing/comparison to the national picture.

The process of identifying which children were income poor in the four waves (2001-2004) of the FACS survey was a relatively complex one. Given the greater accuracy of the HBAI data, the process of identifying children as coming from poor families in FACS started with inspecting the HBAI data. In each of the relevant years, the **proportion** of children in HBAI with equivalent incomes[7] below 70 per cent of median family income, before housing costs, were identified. The FACS survey data were then ordered on the basis of family income and the **level of income** in the FACS survey data equivalent to the **proportions** in poverty at the 70 per cent threshold in HBAI, were determined. These levels of income were then used to identify poor children in the FACS survey.

This meant selecting children in the bottom X per cent of the income distribution, in line with the proportions of children in income poverty found in the HBAI (70 per cent of OECD median before housing costs) whole population.[8] For example, if HBAI revealed that 32 per cent of children had incomes below 70 per cent of median equivalent income in 2002/03, **the level of family income** equivalent to the 32nd percentile in the 2002 FACS sample, when ordered on the basis of family income, would act as the threshold indicator for poverty at the 70 per cent level for that year. This approach was adopted to ensure that the proportions of children found in income poverty in any analysis were consistent with HBAI definitions, and with other analysis carried out within DWP that has adopted a similar methodology.

3.6   Grossing

In the FACS survey, a grossing regime is only applicable from 2001 onwards, at the point that the FACS survey became a survey of all families with children.[9] The existing grossing weights were designed to gross to the number of families and not designed specifically to estimate the numbers of children in the population.

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[7] Family income variables, equivalised by the OECD modified scale.

[8] The proportion of children in income poverty varies in line with the year of the survey being investigated.

[9] In the first two waves of FACS, 1999 and 2000, only low-income families were interviewed. At this time the survey was known as the Survey of Low-Income Families (SOLIF).

3.7   Selection of material deprivation items

The starting point for many researchers is to identify a set of 'basic' or 'primary' deprivation items, which constitute 'generalised deprivation' and that they want to include in their measure. For example, Callan *et al.* (1996) stated that aggregating items into a single index may lead to the loss of valuable information as different items can represent different aspects of deprivation. They clustered deprivation items into groups, which identified different dimensions of deprivation, using factor analysis.

All of the items collected in the FRS are to be used to create a summary index in the final child poverty measure, factor analysis will not, therefore, be necessary. In this work we have tried to create as similar a set of items in FACS to those included in the FRS.

As mentioned before, FACS does not measure material deprivation in exactly the same way as the FRS. We had to, therefore, make judgements about which questions could be deemed comparable across the two surveys. Items in FACS were selected if they were a close match (or proxy) to those collected in the FRS to warrant inclusion in the deprivation indexes constructed. Appendix B provides details of how the FRS measures material deprivation and how FACS compares to this. Proxy measures are those in which a question in FACS was deemed to be measuring the same (or similar) construct as a question included in the FRS, although the question is asked, collected or worded in a different way.

Initially, a comparison of deprivation items in FACS was made against those newly collected in the FRS; this was in order to judge what items could be considered in FACS to be equivalent to the FRS items to create a deprivation index. The closest match between FACS and the FRS was obtained from 2003 onwards where 14 deprivation items were considered comparable. In 2001 and 2002 there were 12 and 13 items respectively that were considered a match. When looking at FACS over time, predominantly 2001 to 2004, it makes sense to restrict the analysis to the 12 items common to these four consecutive waves.

For three deprivation items (measured in the FRS) there was no equivalent measure, or measures that could act as a proxy, in FACS. As mentioned, consideration was given to measures that could act as a proxy for deprivation items measured in the FRS for which no directly equivalent measure existed in FACS. Seven proxy measures were considered in all (as marked 'proxy' in Table B.1) and the closest match to the FRS question was sought.

Three proxy measures were dropped as a consequence of analysis.

3.8   Material deprivation over time

As mentioned in Section 3.2, a key advantage of the FACS survey is that it allows us to look at material deprivation over time. One of the first things looked at was how material deprivation items behaved over time (Table 3.1). As you can see, on the whole, those reporting they lacked an item because they could not afford it reduced over time. Progress is not uniform across all the items, however, with the child items being slower to show progress.

Others have noted the reduction in deprivation over time in the FACS survey series (Berthoud *et al.*, 2004; Goodman and Myck, 2005). Chapter 6 discusses how often a deprivation measure should be reviewed.

Table 3.1   Income poor (70 per cent of median OECD income before housing costs) by the proportion in deprivation for each item

Deprivation item	2000	2001	2002	2003	2004
Family:					
Keep home warm	18	14	13	12	12
Two pairs of shoes	37	25	22	20	18
Home in decent state of decoration	NA	NA	15	14	15
Money to spend on self	54	39	35	35	36
Regular savings	86	80	80	79	81
Friends or family for a meal once a month	36	23	21	18	21
Replace/repair electrical goods	NA	NA	NA	11	10
One-week holiday	74	62	57	56	59
Behind on any household bills	41	33	30	31	31
Child:					
Hobby/leisure activity	NA	13	13	13	12
Friends round for tea	NA	5	5	5	5
Enough bedrooms	27	26	26	27	28
Leisure equipment	26	17	13	12	9
Celebrations	28	17	15	12	12

Note: FACS 2000, 2001, 2002, 2003 and 2004. Income-poor children only (below 70 per cent of OECD median income).

NA = not applicable, item not collected at that wave. Weighted by cross-sectional weight in 2000 and grossing weight applied 2001 onwards.

3.9 Differences between FACS and the FRS

There are differences between the FACS survey and the FRS. For example, the FACS survey is a panel survey of families, interviewing the same families year-on-year, whereas the FRS is a cross-section survey of households, interviewing different households each year. This may lead to slightly different responses to the deprivation questions[10] and, therefore, some difference in results can be expected. In addition, FACS is based on those in receipt of Child Benefit (ChB) whereas the FRS may pick up some families with dependent children who are not in receipt of ChB.

3.10 Summary/conclusions

This chapter has focused on the data source used for the analysis. It discusses the deprivation information collected in the FACS survey and its collection over time. This data source allows analysis prior to the FRS new deprivation suite of questions becoming available in 2006.

Various checks and steps were required in setting up the data to be analysed, for example, constructing child level data for earlier waves of FACS. The chapter details historical detail and the limitations of the FACS survey data source, as well as key decisions, such as how income was treated and an income threshold achieved.

Questions in the FACS survey were selected on the basis of closely measuring the same construct as those in the FRS or being judged to be able to act as a proxy measure. The proportions lacking deprivation indicators have reduced steadily over time in the FACS survey.

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[10] It is possible that a panel survey produces some 'conditioned' responses where panel members remember the questions from previous years.

4 Creating material deprivation indexes

4.1 Introduction

There are many different approaches to the measurement of material deprivation. The next part of the report explores two possible options, for the ways in which the material deprivation index could be used as part of the child poverty measure, and shows what these could look like in practice. To do this, we have analysed the Families and Children Study (FACS) survey data to gain a picture over time, to enable us to draw conclusions and recommendations on the shape of the measure.

A simple count and prevalence weighted index are presented. The chapter discusses the application of an enforced lack approach in setting up the deprivation summary score indexes, the preference for a prevalence weighted approach to weighting and anchoring to a baseline. There is limited coverage of other potential methods to creating an index and to weighting. The chapter concludes with a brief look at the characteristics of these according to the deprivation index.

4.2 Enforced lack approach

The initial deprivation index is set up by awarding a score of one when an item is lacked because it cannot be afforded. It is important to note that we did not have this information for all of the deprivation items because in some instances we have had to use proxy measures in FACS to replicate what is measured in the Family Resources Survey (FRS).

4.3 Simple count approach

The possible approaches were refined to two different methods: the simple count and a weighted approach. In the simple count approach, each family receives a summary score of the number of items they lack because they cannot afford them.

Table 4.1 shows the proportion of children and the number of items lacked for both those families in income poverty (70 per cent of median income before housing costs) in 2004 and those families not in income poverty.

In the simple count approach, just over one-third of children (36 per cent) who were not from income-poor families lacked no items i.e. they were not in deprivation; the results for the self-employed were broadly similar. In contrast, only a small proportion of children from families defined as income poor did not lack any items (eight per cent) (Table 4.1).

The income poor commonly lacked one to four deprivation items whereas their non-poor counterparts most often lacked one or two items and predominantly only lacked one item. The income poor were also more likely to lack five or more items than the non-poor. The proportion of children lacking items declined steadily for the income poor from four items onwards and for the not income poor from two items onwards (Table 4.1).

Table 4.1   Number of deprivation items lacked by income poverty (70 per cent of median OECD income before housing costs)

					Column percentages	
	Income poor		**Not income poor**		**Self-employed**	
Number of items	**%**	**Cumulative percentage backwards**	**%**	**Cumulative percentage backwards**	**%**	**Cumulative percentage backwards**
		100		100		100
None i.e. not in deprivation	8	92	36	64	35	65
1	16	76	33	31	38	27
2	18	58	14	17	14	13
3	19	39	9	8	7	6
4	13	26	4	4	3	3
5	10	16	2	2	2	1
6	8	8	1	1	*	1
7	4	4	1	0	1	0
8	3	1	*	0	*	0
9	1	0	0	0	*	0
10	*	0	0	0	*	0
11	*	0	0	0	0	0
12	NA		NA		NA	

Note: FACS 2004, 12 deprivation items. Weighted by wGROSSP.

NA=not applicable, *= less than 0.5 per cent, numbers may not sum to 100 due to rounding.

Figure 4.1 shows the simple count index, the number of items lacked (because they cannot be afforded) are displayed for those children in income-poor families and those in non-poor families.

Figure 4.1   Number of deprivation items lacked by income poverty (70 per cent of median OECD income before housing costs)
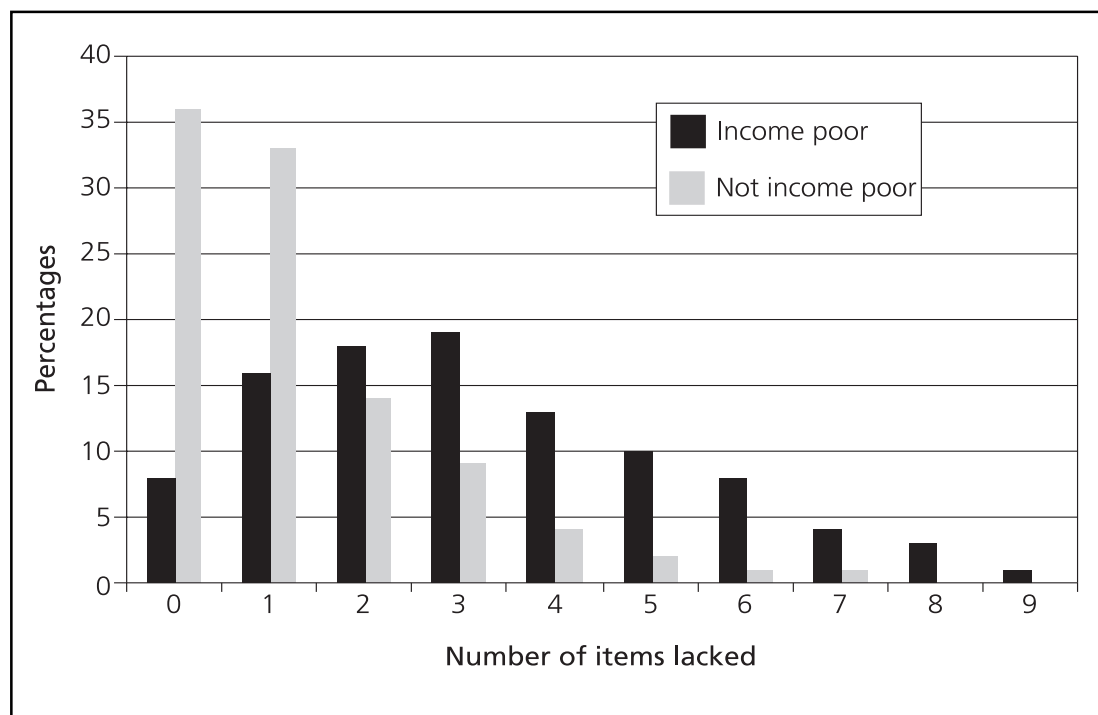
The table showing the number of deprivation items lacked by income poverty (Table 4.1) has, additionally, been presented in Appendix D (Table D.1) based on the 12 items that are available in all four consecutive waves of FACS, 2001 to 2004. In this way you can see how the same summary score has changed over time. The updating of items is looked at later in Chapter 6.

Over time, typically about one-third (34-36 per cent, 2001 to 2004) of those who were not income poor did not lack any items and again, only a small proportion of those defined as income poor did not lack any items (seven–eight per cent) (Table D.1).

4.3.1   Advantages and disadvantages of a simple count approach

Advantages

• It is simple to understand.

• It is easy to communicate to non-specialists and, therefore, has the advantage of presentationally 'not hiding anything'.

Disadvantages

• A non-essential or not widely owned item may be ranked equally with an item that is perceived as much more important (only a weighting approach can overcome this).

• A single item can have a disproportionate effect on the overall measure.

4.4   Weighted approach

4.4.1   Background

As mentioned, the possible approaches were refined to two different methods. Secondly, the weighted method was considered in which the index is weighted in some way.

It was considered whether each item of which a family is deprived should count equally or if they should be weighted in some way. This treats some of the items in our material deprivation questions as more important than others. In particular prevalence weighting was looked at, in which more weight in the deprivation measure is given to the items that most people already have, thereby making the level of deprivation of those who are lacking such items more acute. This concept of weighting is that the extent of relative deprivation for an individual increases, the larger the share of the population who actually 'have' the item the individual is lacking (Muffels and Fouarge, 2003). Academics have identified that lacking an item that most people have will contribute more to a sense of deprivation than lacking an item almost nobody possesses (Desai and Shah, 1988; Muffels, 1993).

Desai and Shah (1988) believe that you should take into account subjective feelings of deprivation. This depends on the amount of deprivation in society, since the greater the proportion of ownership of a particular item in society, the stronger the feeling if one cannot afford the item (Muffels, 1993).

4.4.2   Weighting approach

As the items chosen for the child poverty measure are from existing surveys where they were already highlighted as essentials, it was not necessary to discriminate on this basis (see McKay and Collard, 2004). Instead, the focus is on weighting and prevalence of ownership.

The lack of agreement on what constitutes a necessity mentioned earlier in this chapter has meant that some have abandoned the 0/1 division in favour of assigning weights to individual items. In a simple count approach, a lacked item receives a score of 1 and an item not lacked receives a score of zero. A weighting approach will adjust the score of 1 awarded to a lacked item in some way so that individual items are assigned different weights within the index.

The approach to weighting can be varied: the main approaches have been to weight each item by the proportion in the sample that consider the item a necessity or by the proportion in the sample who have the item (prevalence weighting).

A prevalence weighting approach was adopted following the method introduced by Desai and Shah (1988) in which they weight each item 'in relation to the proportion of the total community **not** deprived'. Each item is weighted by the proportion owning/or taking part in that item/activity in the overall sample, for that year. In this way, the higher the proportion in the sample that own that item, the more the inability to afford it contributes to the measure.

Each score of 1 (indicating where an item is lacked because it cannot be afforded) is multiplied by the proportion in the sample who owned that particular item. The scores on each item are then summed and then divided by the total maximum score; resulting in a continuous distribution of scores ranging from 0 to 1. These resulting scores were multiplied by 100 to make them easier to interpret. The final scores, therefore, ranged from 0 to 100, with those lacking all items which everyone else owned potentially scoring 100. In reality, no family lacked all of the deprivation items in question because they could not afford them and scores, therefore, did not approach 100. In looking at the distribution of scores, it was determined that scores of 50 or more could be combined into a single '50 or more' category given the small proportion of families falling at this end of the distribution.

Figure 4.3 shows the continuous distribution of prevalence weighted material deprivation summary index scores for those children who were from income-poor and not income-poor families. The scores were clearly clustered around the bottom end of the distribution for both groups, with the not income poor having a large peak at zero (those not encountering any degree of deprivation).

Figure 4.4 shows the bottom end of the weighted distribution in more detail by displaying just those cases which achieved a prevalence weighted score of 25 or less. This shows clearly that the income poor were more likely to achieve a score between 10 and 20.

Figure 4.2   Continuous distribution of prevalence weighted deprivation summary index scores by income poverty (70 per cent of median OECD income before housing costs)
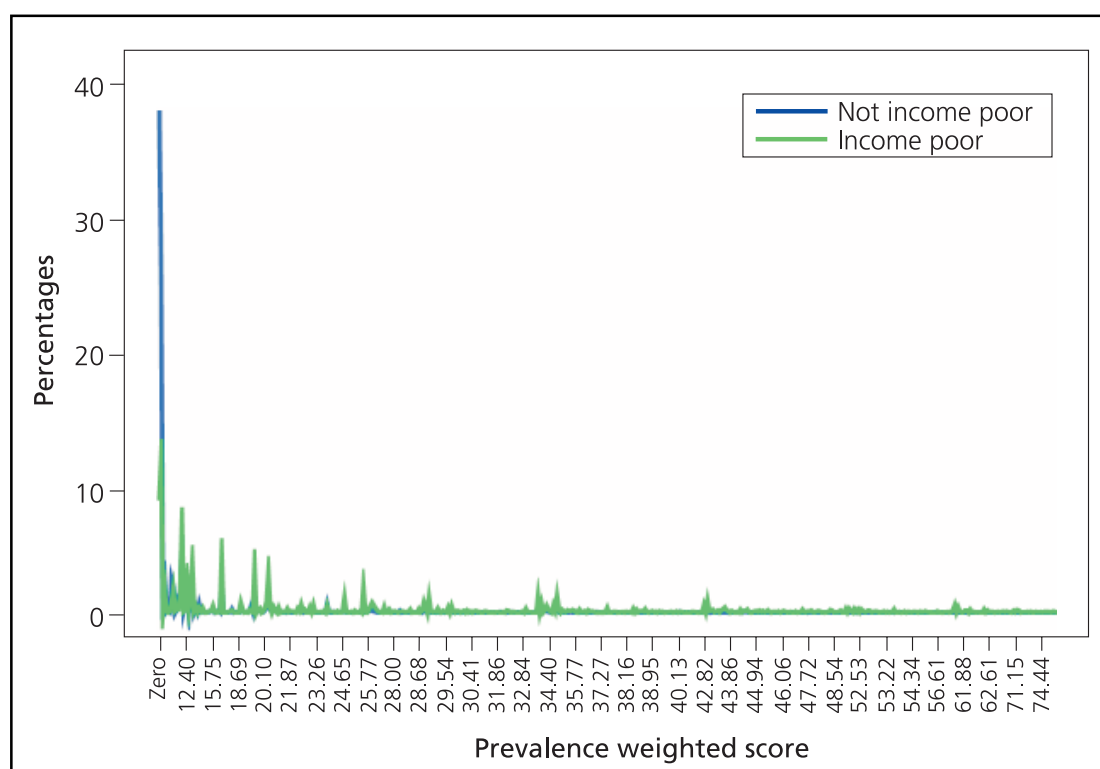
Figure 4.3   Distribution of prevalence weighted deprivation summary index scores up to 25 by income poverty (70 per cent of median OECD income before housing costs)
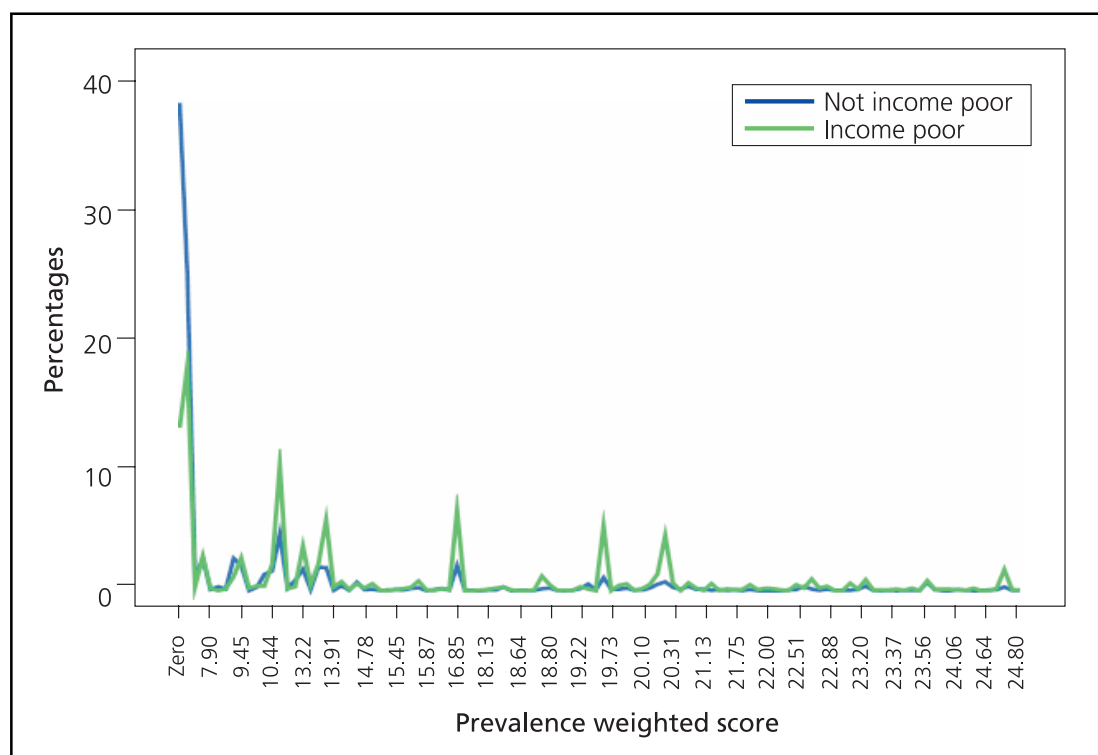
A score of 50 does not mean that half of the items are lacked. Also, note that in a weighted approach a family can become more or less deprived year-on-year without the actual number of items they cannot afford having changed. This reflects the actual items in the basket of goods becoming more or less commonly owned over time (Goodman and Myck, 2005).

4.4.3   Anchoring the weights to the baseline

It was also considered whether or not to anchor to a baseline. For example, the weights applied could be adjusted each year to take into account changing levels of ownership or this could be set to the year in which the measure starts i.e. the baseline.

Table 4.2 shows the weighted material deprivation summary index scores in 2004 for all children anchored to the baseline year (2001).

The income poor were more likely to be deprived than the non-poor on a prevalence weighted basis.

The self-employed, for whom there is no readily available income measure, appeared to look similar to the not income poor in terms of the degree of deprivation observed. This group is not presented in the remainder of the analysis.

Table 4.2   Prevalence weighted deprivation summary index score by income poverty (70 per cent of median OECD income before housing costs)

Column percentages

Score (0 to 100)	Income poor %	Income poor Cumulative percentage backwards	Not income poor %	Not income poor Cumulative percentage backwards	Self-employed %	Self-employed Cumulative percentage backwards
		100		100		100
Zero, i.e. not in deprivation	8	92	36	64	35	65
Less than five	11	81	23	41	29	36
Over five but less than ten	5	76	9	32	9	27
Over ten but less than 15	16	60	13	19	12	15
Over 15 but less than 20	11	49	6	13	6	9
Over 20 but less than 25	10	39	5	8	4	5
Over 25 but less than 30	11	28	3	5	1	4
Over 30 but less than 35	5	23	2	3	2	2
Over 35 but less than 40	6	17	1	2	1	1
Over 40 but less than 45	5	12	1	1	*	1
Over 45 but less than 50	3	9	*	1	*	1
50 or more	9	0	1	0	1	0

Note: FACS 2004, 12 deprivation items. 2001 prevalence weights applied. Weighted by wGROSSP.

*= less than 0.5 per cent, numbers may not sum to 100 due to rounding.

Figure 4.3 shows the distribution of weighted material deprivation summary index grouped scores for those children in income-poor families and those not in income poverty.

Figure 4.4   Prevalence weighted deprivation summary index grouped scores by income poverty (70 per cent of median OECD income before housing costs)
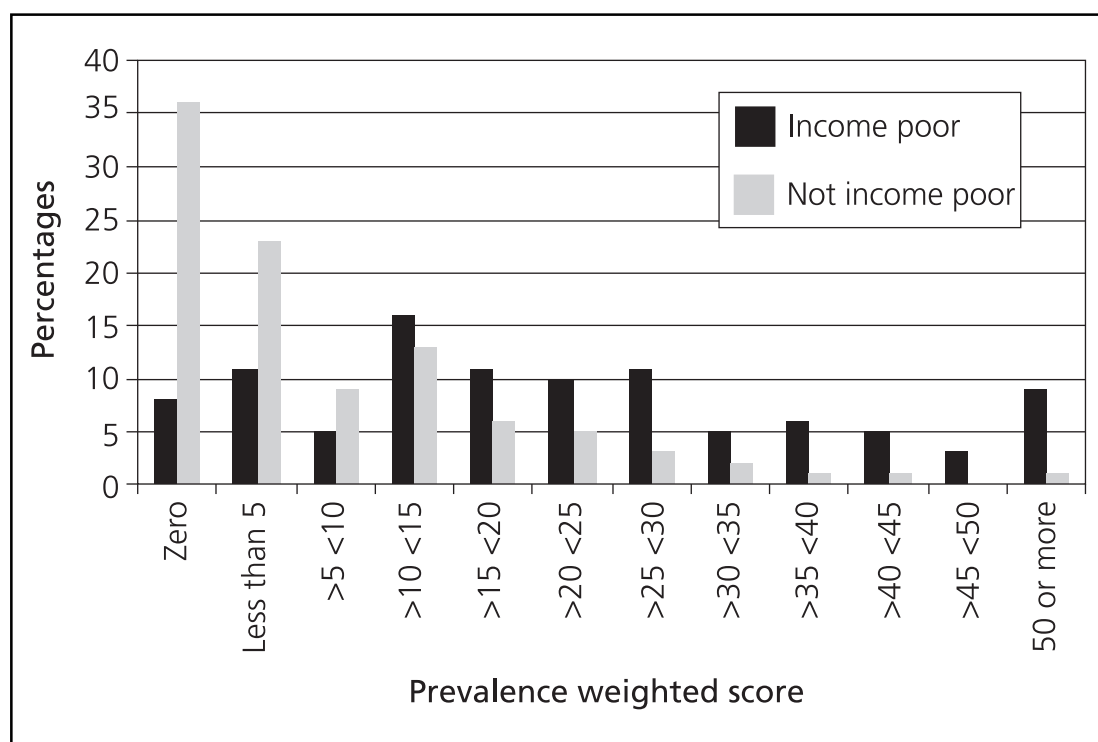

The table showing the prevalence weighted deprivation summary index score by income poverty (Table 4.2) has additionally been presented in Appendix D based on the 12 items that are available in all four consecutive waves of FACS, 2001 to 2004. In this way you can see how the same summary score has changed over time. See Chapter 6 for a discussion around updating.

4.4.4   Not anchoring the weights to the baseline

Prevalence weights for each individual year were also applied to the four consecutive years, 2001 to 2004. These are presented in Appendix D. The figures remained very similar to those presented in which 2001 prevalence weights (i.e. anchoring to the baseline) were applied to all four consecutive years.

As a consequence of these results, anchoring to 2001 prevalence weights has been adopted. The analysis reported throughout the remainder of the report has been conducted on this basis.

Anchoring to a fixed year (or baseline) also means that it will be easier to track progress over time, otherwise people could appear worse off even if their own particular circumstances hadn't changed each year. The academic experts who have commented on this report also agreed that using weights anchored to the baseline was the most sensible approach.

4.4.5   Advantages and disadvantages of a weighted approach

Advantages

- It considers the relative importance of each item in terms of ownership within the overall index rather than simply aggregating the items. For example, the Poverty and Social Exclusion survey, which uses simple counts was criticised for comparing missing a dictionary as the same as lacking a fridge. In this way, more importance is given to an item that is lacked when it is owned by a greater proportion of the sample.

- A weighted approach can give more 'control' over the numbers found to be deprived, compared to simple integer cut-offs.[11]

- There is a general perception by experts that weights that do not rank deprivation items equally will perform better.

- Anchoring the weights to a single year is straightforward and works well for a time-limited target like the PSA.

Disadvantages

- It can be difficult to understand and to communicate a weighting procedure, but it is possible to do this.

- A weighted approach can be criticised for giving more 'control' over the numbers found to be deprived, compared to simple integer cut-offs (the inverse of the above argument).

4.4.6   Other weighting methods

A range of alternative methods to weighting have been used and discussed by others; an exhaustive coverage of the alternative methods is not provided here. A popular method in comparison to prevalence weighting, mentioned earlier, is to weight by the proportion of the population that regards the item as necessary (Halleröd, 1995).

Some approaches to weighting have been quite complex, for example Mayer and Jencks (1989) weighted their index according to the relative importance of each indicator to the family. Weights were computed by regressing the answers from respondents on how they rated their standard of living on each of the items. Muffels (1993) builds in a mechanism which allows item possession to compensate in some way for the lack of an item.

Other examples of weighting methods include weighting by: the total number of items owned; the relative welfare contribution of each item; and, cost of items. The prevalence weighting method adopted takes account of the cost of items to some extent because those items owned most widely are likely to be the most affordable.

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[11] A scoring system, for example, out of 100, allows more flexibility for selecting cut-off points than a simple count of the number of items lacked.

Weighting methods can also choose to adjust for differences in preference, for example controlling for gender, age groups, household types and region (Halleröd, 1995).

4.5   Other approaches to creating an index

A range of other statistical methods and variations to the above have been used by others, covered briefly here, to construct deprivation indexes. For example, factor analysis and cluster analysis have been employed. Such methods are primarily concerned with selecting items to include in a single summary index that captures 'latent' or 'primary' deprivation.

More complex statistical models have been used by others, for example, multivariate probit models (Cappellari and Jenkins, 2004). The evidence to date does not offer significant support for choosing a more complex approach to measurement over a more simple measure.

Similarly, there are alternative methods that could be used to rank the importance of items in a weighted approach. For example, within prevalence weighting, it would be possible to argue for a non-linear mapping of ownership to the relevant score (e.g. applying exponentially increased weights, rather than linearly increased weights, to items that most people have). There is no definitive answer on the best approach. A weighted approach, however, does add further confidence to a measure, which is to be used over time, although it adds complexity to its understanding.

In our opinion, other methods which could be used to provide confirmatory analysis are often too complex, and do not yield any more relevant or useful information. For example, in using factor analysis in the past (Calandrino, 2003), the analysis could not be used to draw firm conclusions.

It was also recognised throughout the analysis that one of the key recommendations from the consultation was that the measure should be clear and understandable to as wide an audience as possible. Whilst it is possible to design more complex measures attempts have been made to keep the measure as simple as possible, whilst being the best robust discriminator between those who are deprived and those who are not.

4.6   Characteristics of those in deprivation

A range of characteristics were looked at to see where those groups typically defined as deprived were located. This was done independently of the income measure.

The characteristics of children in income poverty (against those who were not income poor) were explored. This was repeated for both the simple count and prevalence weighted approach. These characteristics included:

- family type (lone parent/couple);

- family work status (lone parent: working 16+ hours; lone parent: not working 16+ hours/couple both working 16+ hours; couple: one working 16+ hours; couple: neither working 16+ hours); and

- number of dependent children (1/2/3+).

As expected, higher proportions of lone parents, workless families and large families (three or more children) were observed located higher up the deprivation indexes and fewer of these groups were not in deprivation. Higher proportions of these groups encountered deprivation if they were income poor.

4.6.1 Material deprivation by region

Selected material deprivation thresholds were looked at by Government Office Region. London and Scotland consistently appeared in the top five most deprived regions for any degree of deprivation on either measure (simple count or prevalence weighted).

4.7 Summary/conclusions

The chapter has examined the possible methods of creating a summary score deprivation index. A simple count index and prevalence weighted index have been presented for comparison. The enforced lack approach has been adopted, which means that an item is counted as lacking if it cannot be afforded.

The weighted approach presented is that of prevalence, which ranks the relative importance of deprivation indicators by the level of ownership in the population. This means that a greater importance, when an item is lacked, is assigned to those items that are more commonly owned in the population. It was concluded that the weight should be constrained (or anchored) to the 2001 baseline ownership level. A whole array of different methods exist which can be used to weight deprivation indexes.

There are also a range of other methods, covered briefly in this chapter, which could be used to create a deprivation index.

The analysis of characteristics and region found that those in deprivation display the typical features observed in the poor, for example lone parenthood. Regional analysis found that those in deprivation were commonly situated in the London region.

A number of different ways in which a summary score measure could be constructed have been examined, and following discussions with academics with expertise in the area, it is believed that the trends in the results should not alter between them in any major way. There are, however, questions over the way in which items are brought together and what constitutes the best approach.

5   Creating material deprivation thresholds

5.1   Introduction

The new child poverty measure will be based on the items in the Family Resources Survey (FRS), introduced as a new module in the 2004/05 data collection. A threshold cannot, therefore, be determined for the FRS survey until the data becomes available and results have been obtained. This chapter looks at threshold setting, as applied to the Families and Children Study (FACS) and, how thresholds can be identified and applied to the simple count and prevalence weighted summary score indexes discussed in the previous chapter.

5.1.1   Threshold setting

Income threshold approaches have been around for some time; they measure poverty by looking at the numbers of people whose income falls above or below a selected cut-off, i.e. the poverty line. The main difficulty in any such approach is in identifying the threshold or cut-off at which people should be defined as 'poor'. Often a range of relative low-income lines are presented to overcome this problem, for example, 50 per cent, 60 per cent and 70 per cent of median income.

Identifying a threshold is the last stage of the method generally employed to create deprivation indicators. The aim is to identify a point at which a shift in the experience of deprivation occurs (McKay, 2004). A direct measure of deprivation supplies us with a deprivation index, which details the degree of deprivation, however it does not signify a cut-off point or threshold at which people should be defined as poor (Halleröd, 1995). Some attempts have been made to make the method with which a deprivation threshold is identified more systematic and objective.

5.1.2   Why select a threshold?

Defining income cut-offs or income thresholds, whilst easy, has traditionally attracted criticism for being arbitrary. Deprivation thresholds have also been criticised for being arbitrary, in terms of the fact that the number of items on which

a person is judged to be deprived has no scientific foundation. This is perhaps inevitable, but it is clear that no measure such as this can be designed without some kind of threshold being set.

The threshold defined needs to capture enough people in poverty but it also needs to capture only the truly deprived in order to be meaningful. In particular, the interaction between the 70 per cent before housing costs income threshold and the deprivation threshold needs to be considered.

5.1.3 Selecting the threshold

Various thresholds were tested, looking at simple count and prevalence weighted measures. Thresholds over time were also looked at to see how deprivation has changed over time.

A judgement can be made by eye to determine where the cut-off should be drawn, i.e. at what point is a child considered to be 'truly' deprived. This point is the point that best discriminates between the poor and the non-poor.

Figure 5.1 shows graphically the optimal position for a poverty threshold. It demonstrates how the not poor can be identified as poor if the poverty threshold is set too high and the poor can be identified as not poor if the poverty threshold is set too low.

Figure 5.1   Setting a poverty threshold[12]
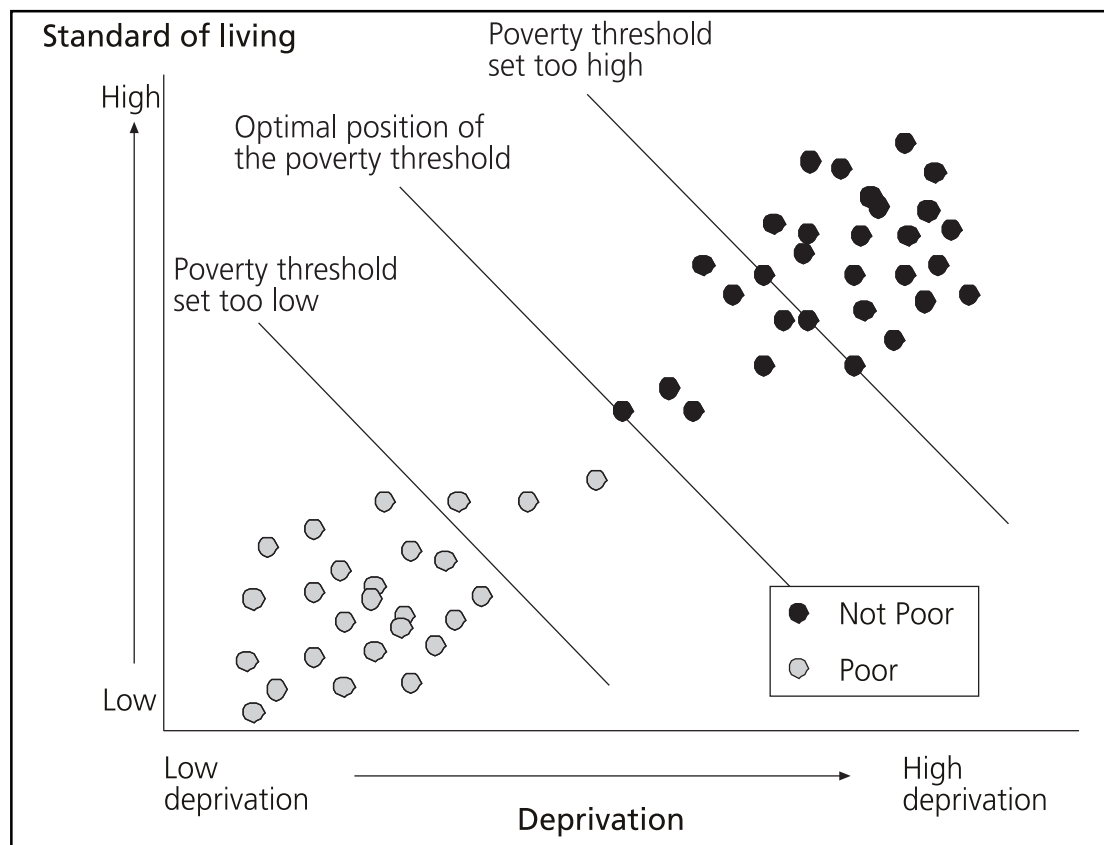
[12] Note: Figure 2 in Gordon *et al.* (2000).

Statistical testing

Approaches can be used to try to identify the poor in a more scientific way, which goes some way to counteracting criticisms that the selection of a deprivation threshold, as with income thresholds, is arbitrary. Gordon *et al.,* 2000 state: *'The optimum poverty threshold is set where statistically it maximises the differences between 'poor' and 'not poor', and minimises the differences within these groups'.*

General Linear Models have been used to determine the poverty threshold; Gordon *et al.* (2000) used both ANOVA and logistic regression. They also used Discriminant Function Analysis (DFA) or Discriminant Analysis[13] to maximise the differences between poor and non-poor children by looking at the extent to which poor children are more similar to poor children and non-poor children are more similar to non-poor children.

DFA was conducted to evaluate the cut-off point in a more scientific way and to confirm our judgement about where the cut-off should be drawn. In line with the approach of Gordon *et al.* (2000), models were run analysing deprivation as: lacking one or more items; lacking two or more items; and lacking three or more items and so on. Family type and number of dependent children were included as predictor variables. Three models were run, one without income and two that included income (the logarithm of net family income before housing costs and 70 per cent of median income before housing costs). [14] [15]

The difference in eigenvalues was greatest between models in which a continuous income measure had been used as a predictor variable as this had the ability to discriminate between the two groups over and above family type and the number of dependent children.

5.2   Summary/conclusions

A threshold for the FRS cannot be determined until the data becomes available in 2006 and results have been obtained.

Income thresholds as well as deprivation thresholds have been criticised for being arbitrary. Judgements are often made by eye as to where the poverty line should be

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[13] Discriminant Function Analysis is used to classify cases into the values of a categorical dependent, usually a dichotomy. It predicts group membership (deprived versus non-deprived) according to a set of explanatory variables. It works by assessing the between-group differences relative to within-group differences. The eigenvalue allows us to assess the extent to which within-group similarities and between-group differences vary as the poverty line is changed from one or more items, to two or more items, and so on.

[14] Model 1 and model 2 replicate Gordon *et al.* (2000) as far as possible.

[15] Organisation of Economic Co-operation Development (OECD) (modified) net family income before housing costs.

drawn. Recent attempts have tried to add more rigour to the approach used to determine a cut-off that discriminates between the poor and non-poor.

This chapter has looked at determining a deprivation threshold by eye and the possibility of using statistical analysis.

6   Measuring material deprivation over time

6.1   Introduction

It is necessary to consider how the deprivation items included in the index will change over time and how often the basket of items will need to be reviewed. This chapter discusses updating the deprivation items, rebasing the measure and the potential dangers in measuring material deprivation over time. It also highlights the differences that may occur when this analysis is repeated using the Family Resources Survey (FRS), upon which the final measure will be based.

6.1.1   Degree of material deprivation over time

Table 6.1 shows the mean number of items lacked (enforced lack) and the mean prevalence weighted score from 2001 onwards by income poverty status in the Families and Children Study (FACS). The decline in deprivation since 2001 has been very gradual, with a slight decrease for the income poor in the mean number of items lacked and the weighted deprivation score.

Table 6.1   The mean number of items lacked and mean prevalence weighted score by income poverty status

	Mean number of items		Mean prevalence weighted score	
Year	Income poor	Not income poor	Income poor	Not income poor
2001	3.54	1.46	25.58	9.94
2002	3.45	1.49	23.72	9.67
2003	3.43	1.40	22.80	8.52
2004	3.47	1.39	23.42	8.46

6.2   Updating items

Callan *et al.* (1996) state *'…the notion that expectations and perceptions of needs will change over time as general living standards rise is central to a relative conception of poverty.'*. They point out that respondents' interpretations of the meaning of items which are broad[16] may change over time and that over a longer period the possibility of incorporating new items should be available given changing attitudes and expectations of the population. Combining the same set of items with an income measure, however, does allow for changes in income over time.

In order to avoid the material deprivation measure losing its importance over time as patterns of ownership change and technological advances result in lower costs and wider choice, items will need to be updated from time to time.

The problem which arises from updating is a 'jagged edge', as commonly owned items are replaced with less widely owned ones. This could result in the progress made on the measure being stalled. Essentially, this could make measurement very difficult.

The Irish reported a substantial decline in deprivation between 1987 and 1994, with the greatest decline for those above various relative low income thresholds (Callan *et al.,* 1996). Previous work in Ireland has also shown that items have become obsolete over time. As mentioned in Section 2.4, the items selected for inclusion in the FRS were selected on the basis of being robust over time and less affected by technological advances or reduced costs.

Measuring child poverty stated: *'We need to ensure that over time the suite of questions we have identified through our analysis continue to be the best discriminators in terms of poor and non-poor families. Therefore, we may need to add new indicators from time to time as new goods and services are required to attain social inclusion. Advice from experts in this area is to review the deprivation measure every few years'*. (DWP, 2003, pp.12).

6.3   Rebasing the measure

Berthoud *et al.* (2004) argue that *'Deprivation has to be treated as a relative concept – just like low income – with indicators recalibrated every year'.* The four-year-run in FACS between 2001 and 2004 shows a slight decline in deprivation on all items by one or two percentage points, which adds further support for the argument that recalibration is not necessary every year – see Section 3.8.

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[16] For example, a broad item could be 'keeping your home in a good state of decoration', and attitudes towards what constitutes a 'good state' or indeed what constitutes 'decoration' may change over time.

In further discussions on this issue with key academic experts it emerged that rebasing about every five years could be beneficial. This would enable the measure to be updated regularly but not too often as to disguise any progress being made.

Different methods of recalibration will need to be tested (e.g. updating one or two items often versus updating many items less often) in order to establish how the jagged edge can be minimised. Gradual changes to the set of items may achieve this. Longitudinal analysis of the items was employed to test how ownership and affordability have changed in the preceding waves.

If this proves to create significant discontinuities, it may only be feasible to update the measure at points where targets are being set. Some degree of jagged edges may have to be accepted, especially as the absolute threshold will need to be updated at similar intervals.

6.4   Lessons learned and potential issues

The results for the FACS survey could look different to those obtained in the FRS for various reasons.

FACS is a panel survey, in which the same families are interviewed year-on-year, which potentially could mean that respondents become conditioned to the deprivation questions over time. This in turn could mean that they are less likely to state that they do not have an item because they cannot afford it. In the FRS cross-section, in which different households are interviewed each year, the rate of decline in deprivation may look quite different.

The placement of the deprivation questions within the survey interview can have an impact on responses. Care should be taken to ensure that the deprivation block in the FRS interview maintains the same positioning each year.

The different number of deprivation questions contained in the FACS survey and FRS will mean that the results will necessarily be different. There are more deprivation questions in the FRS, which will mean that there is a greater likelihood for families to report lacking one or more items.

6.5   Future work

Comments from academic experts have been received on this report and have provided useful guidance. Further work will draw on this advice when analysing the FRS12-month data in order to agree the final measure.

6.6   Summary/conclusions

In looking at existing measures, such as the Irish consensual poverty measure, it is clear that deprivation items will need to be updated, probably every few years, in advance of the measure being rebased possibly at five-yearly intervals. Further work is required to look at how often the material deprivation measure should be rebased.

Analysis of the FRS 12-month data needs to be undertaken to further inform the measure and the results obtained are likely to be different. The FRS is a cross-sectional survey, whereas FACS is a panel survey, and it also includes a larger number of deprivation items. In addition, measuring material deprivation in a survey over time needs to be treated with care so that responses are not adversely affected.

Appendix A
Family Resources Survey
material deprivation block

The initial question and programming Actions, which select at random one adult to respond to the Deprivation Questions is shown below.

1. Add new block of questions **QAfford** after block **QCHinc** (immediately before question **AnyAcc**).

2. Add first selection question as follows:

(Question to appear in ALL cases regardless of number of adults in the BU)

WhoDepQ	ASK OR CODE The next set of questions should be answered by (PROGRAMMER RANDOMLY SELECT 1 ADULT FROM BU IF 2 adults) ^Name. If 2 adults in BU add 'You can answer the questions together if you wish. Programmer – If 2 adults in BU display message below @/@/INTERVIEWER ENTER (^Name of randonly selected or only adult in BU) below if they are available to answer these questions now. Otherwise enter ^Name. 1. ^name1 2. ^name2 3. Interview is being conducted by proxy for this respondent/Benefit unit. <F9> NO DK / NO RF
	Continued

	F9 Help Screen Use this code ONLY in cases where the interview is conducted entierly by proxy. If (any of) the name(s) respondent(s) is/are available then these questions MUST be asked of that respondent.

SIGNAL if more than 1 adult in BU AND interviewer enters respondent NOT selected randomly by Blaise:

INTERVIEWER
The questions should have been answered by ^Name of randomly selected adult but you have entered ^Name of non selected adult. If this is because ^Name of non selected adult is not present suppress the check and continue. Otherwise ask ^Name to answer these questions.

HARD CHECK IF ONLY 1 ADULT IN BU

If WhoDepQ = 3 AND Pprox [1] = Personal (1)

INTERVIEWER
You have entered that this interview has been conducted in person but earlier you said that the interview was being conducted by proxy. If the interview is a personal interview you MUST now ask the affordability questions.

HARD CHECK IF ONLY 2 ADULTS IN BU

If WhoDepQ = 3 AND Pprox [1] = Personal (1) OR Pprox [2] = Personal (1)

INTERVIEWER
You have entered that this interview has been conducted in person by 1 or more members of this benefit unit. Earlier you said that the interview was being conducted by proxy. If the interview is a personal interview for either respondent you MUST now ask the affordability questions.

Note to programmer

Where textfills are used they are specified for the 3 possible BU scenarios a) wording used where children in BU / b) wording used where respondent and partner only / c) wording otherwise (where single person in BU only)

3.   Program the remaining questions as shown below.

{text fills –

a) wording used where children in BU /

b) wording used where 2 adults who are partners in BU/

c) wording where single adult in BU and NO children)}

Adult Deprivation Questions

If WhoDepQ = 1 or 2

Addint

"This next section is about the sorts of things that some {^families /^people / ^people} have, but which many people have difficulty finding the money for": YCONTINUE

AddHol

For each of the following things please tell me the number from the showcard which best explains whether {^you and your family /^you and your partner /^you} have it or not.

Do you {^and your family /^and your partner /^}have...READ...

...a holiday away from home for at least one week a year, whilst   not staying with relatives at their home?

(Wehave "We have this / ^We have this / ^I have this",
WeLhave "We/I would like to have this but cannot afford this at the moment",
Wenhave "We/I do not want/need this at the",
Dnapply "[Does not apply]")

AdDMel

(For each of the following things please tell me the number from   the showcard which best explains whether {^you and your family / ^you and your partner /^you} have it or not.)
Do ^you and your family /^you and your partner /^you have...READ...)

...friends or family around for a drink or meal at least once a month?

(Wehave "We have this / ^We have this / ^I have this",
WeLhave "We/I would like to have this but cannot afford this at the moment",
Wenhave "We/I do not want/need this at the",
Dnapply "[Does not apply]")

AdDShoe

(For each of the following things please tell me the number from the showcard which best explains whether {^you and your family /^you and your partner / ^you}have it or not.)

Do you have...READ...)

....two pairs of all weather shoes

^for ^text fill names of all adults?/^for ^text fill names of all adults?/^?

(Wehave "We have this / ^We have this / ^I have this",
WeLhave "We/I would like to have this but cannot afford this at the moment",
Wenhave "We/I do not want/need this at the",
Dnapply "[Does not apply]")

AdDDec
(For each of the following things please tell me the number from the showcard which best explains whether you and your family have it or not.

Do you and your family /you and your partner /you have...READ...)

....enough money to keep your home in a decent state of decoration?

(Wehave "We have this / ^We have this / ^I have this",
WeLhave "We/I would like to have this but cannot afford this at the moment",
Wenhave "We/I do not want/need this at the",
Dnapply "[Does not apply]")

AdDIns
(For each of the following things please tell me the number from the showcard which best explains whether you and your family have it or not.

(^Can I just check){add text fill if BU is HRP}

Do you and your family /you and your partner /you have...READ...)

....household contents insurance?

(Wehave "We have this / ^We have this / ^I have this",
WeLhave "We/I would like to have this but cannot afford this at the moment",
Wenhave "We/I do not want/need this at the",
Dnapply "[Does not apply]")

AdDMon
Now I want to ask a few questions about things you and your family can afford to do. For each please choose the number from the showcard.

Do you and your family /you and your partner /you...READ...

....make regular savings of £10 a month or more for rainy days or retirement??

(Wedo "We/I do this / ^We do this / ^I do this}",
WeLdo "We/I would like to do this but cannot afford this at the",
Wendo "^We/I do not want/need this at the",
Dnapply "[Does not apply]")

AdepFur

Now I want to ask a few questions about things you and your family can afford to do. For each please choose the number from the showcard.

Do you and your family / you and your partner / you ...READ...

.... replace any worn out furniture?

(Wedo "We/I do this / ^We do this / ^I do this}",
WeLdo "We/I would like to do this but cannot afford this at the",
Wendo "^We/I do not want/need this at the",
Dnapply "[Does not apply]")

Af1

Now I want to ask a few questions about things you and your family can afford to do. For each please choose the number from the showcard.

Do you and your family /you and your partner / you...READ...

...replace or repair major electrical goods such as a refrigerator or a washing machine, when broken?

(Wedo "We/I do this / ^We do this / ^I do this}",
WeLdo "We/I would like to do this but cannot afford this at the",
Wendo "^We/I do not want/need this at the",
Dnapply "[Does not apply]")

AfDep2

Now please look at Card 3. (On a slightly different note) do you have a small amount of money to spend each week on yourself (not on your family)?

(Ihave "I have this",
ILhave "I would like to have this but cannot afford this at the moment",
Inhave "I do not want/need this at the moment",
Dnapply "[Does not apply]")

AdDepLes

And do you have a hobby or leisure activity?

(Ihave "I have this",
ILhave "I would like to have this but cannot afford this at the moment",
Inhave "I do not want/ eed this at the moment",
Dnapply "[Does not apply]")

Houshe1

"For the next question please answer just yes or no. In winter, are you able to keep this accommodation warm enough?
CODE 'CAN'T AFFORD IT' AS 'NO'":

(Yes, No, Dnapply "[Does not apply]")

Child Deprivation Questions

{If any dependent child in benefit unit}

CDepint

"The next questions are asked about all the children you(and your partner) are responsible for in this household.
Please think about {^textfill names of children in BU} when answering these questions?": YCONTINUE

CdepHol

For each of the following please tell me the number from the showcard that best explains whether your child / children has /have it or not.

Does your child have / do your children have...READ...)

...a family holiday away from home for at least one week a year?

(Chave "Child(ren) has/have this",
CLhave "Child(ren) would like to have this but we cannot afford this at the moment",
Cnhave "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

{IF TWO OR MORE CHILDREN AGED 10 OR OVER IN BENEFIT UNIT OF OPPOSITE SEX}

CdepBed

And are there enough bedrooms for every child of 10 or over of a different sex to have their own bedroom?

(Chave "Child(ren) has/have this",
CLhave "Child(ren) would like to have this but we cannot afford this at the moment",
Cnhave "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

{If any dependent child in benefit unit}

Cdepeqp

Does your child have / do your children have...READ...

...leisure equipment such as sports equipment or a bicycle?

(Chave "Child(ren) has/have this",
CLhave "Child(ren) would like to have this but we cannot afford this at the moment",
Cnhave "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

CdepCel
(Does your child have / do your children have...READ...)

...celebrations on special occasions such as birthdays, Christmas or other religious festivals?

(Chave "Child(ren) has/have this",
CLhave "Child(ren) would like to have this but we cannot afford this at the moment",
Cnhave "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

CdepSum
I now want to ask some questions about whether or not your children can afford to do a number of different activities.
Please choose your answer from this card.

Does your child / do your children...READ...

...go swimming at least once a month?

(Cdo "Child(ren) do this",
CLdo "Child(ren) would like to do this but we cannot afford this at the moment",
Cndo "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

CdepLes
(Does your child / do your children...READ...)

...do a hobby or leisure activity?

(Cdo "Child(ren) do this",
CLdo "Child(ren) would like to do this but we cannot afford this at the moment",
Cndo "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

CdepTEa
(Does your child / do your children...READ...)

...have friends round for tea or a snack once a fortnight?

(Cdo "Child(ren) do this",
CLdo "Child(ren) would like to do this but we cannot afford this at the moment",
Cndo "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

{IF ANY CHILD / CHILDREN YOUNGER THAN 6 IN BU AND DO NOT ATTEND PRIMARY SCHOOL OR ANY PRIVATE OR INDEPENDENT SCHOOL
(TypeEd <> 2 or 8}

Cplay
Does / do [^name/s of child/ren in BU under 6 and do not attend primary or private school]…READ…

…go to a toddler group / nursery / playgroup at least once a week?

(Cdo "Child(ren) do this",
CLdo "Child(ren) would like to do this but we cannot afford this at the moment",
Cndo "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

{IF ANY DEPENDENT CHILD/CHILDREN AGED 6 OR OLDER IN BU OR ANY CHILD/ CHILDREN AGED YOUNGER THAN 6 AND ATTEND A PRIMARY SCHOOL OR ANY PRIVATE OR INDEPENDENT SCHOOL (TypeEd = 2 or 8}

CdepTrp
Does / do [^names of all children aged 6 or older in BU or younger than 6 and attends primary or private school]…READ…

…go on school trips? Again, please choose your answer from this card.

(Cdo "Child(ren) do this",
CLdo "Child(ren) would like to do this but we cannot afford this at the moment",
Cndo "Child(ren) do not want/need this at the moment",
Cnapply "[Does not apply]")

{If any dependent child in benefit unit}

Cdelply
"For the next question please just answer yes or no.
Does your child have / do your children…READ…)

…have an outdoor space or facilities nearby where they can play safely?

'NEARBY' AND 'SAFELY' ARE RESPONDENT'S OWN INTERPRETATION.":
(Yes, No)
{ASK ALL}
{slightly different wording in NI}

Debt Question

Debt

"I am now going to ask you about paying bills for things like electricity, gas and water rates.

SHOWCARD

Sometimes people are not able to pay every bill when it falls due. May I ask, are you up-to-date with the bills on this card, or are you behind with any of them?
INTERVIEWER: THERE ARE 10 CODES.
INTERVIEWER: 'Which others' UNTIL 'No others'":

(Elec   "Behind with the electricity bill",
Gas   "Behind with the gas bill",
OthFuel   "Behind with other fuel bills like coal or oil",
CouTax   "Behind with Council Tax", {code = Not Used in Northern Ireland}
InsPol   "Behind with insurance policies",
Phone   "Behind with telephone bill",
TVVid   "Behind with television/video rental or HP",
OthHP   "Behind with other HP payments",
Water   "Behind with water rates", {text fill word "water" if not Northern Ireland}
NoDebt   "Not behind with any of these")

Appendix B
Material deprivation items: comparison across the two survey data sources

Table B.1   Material deprivation items: comparing the FRS and FACS

Family Resources Survey	Families and Children Study
Family deprivation	
In winter, are you able to keep this accommodation warm enough?	**Same wording***
Two pairs of all-weather shoes for <name of all adults in Benefit unit>?	Two pairs of all-weather shoes for each adult?
Enough money to keep your home in a decent state of decoration?	**Proxy:** How would you rate this property's state of repair? Excellent/very good/fairly good/fairly poor/very poor/none of these *[available wave 4 onwards]*
Do you have a small amount of money to spend each week on yourself (not on your family)?	**Proxy:** A night out once a month? Yes/no
Have regular savings of £10 a month or more for rainy days or retirement?	Do you save regularly? Yes/no *[available wave 2 onwards]*
Household contents insurance?	**No equivalent measure**
Friends or family around for a drink or meal at least once a month?	Are you and your family able to have friends or relatives for a meal, once a month?
A hobby or leisure activity?	**No equivalent measure**
Replace or repair major electrical goods such as refrigerator or washing machine, when broken?	**Proxy:** How would you rate the condition of your fridge/freezer/washing machine? In good working order/minor problems/major problems *[available wave 5 onwards]*

Table B.1   Continued

Family Resources Survey	Families and Children Study
A holiday away from home for at least one week a year, whilst not staying with relatives at their home?	A one-week holiday away from home, not staying with relatives?
Replace any worn out furniture?	**No equivalent measure**
Sometimes people are not able to pay every bill when it falls due. May I ask, are you up-to-date with the bills on this card, or are you behind with any of them?	Are you up to date with any of the following bills? Behind with the <*bill name*>

Child deprivation

Family Resources Survey	Families and Children Study
A family holiday away from home for at least one week a year?	No equivalent measure *[only above question asked at the family level in FACS]*
Go swimming at least once a month?	**Proxy measure considered but dropped**
Do a hobby or leisure activity?	**Proxy:** How often does (child's name) go to organised activities, such as youth clubs, music or sports lessons, scouts/guides?Every day/most days/two or three days a week/at least one day a week/less than once a week/hardly ever or never *[available wave 3 onwards]*
Have friends around for tea or a snack once a fortnight?	**Proxy:** Thinking back over the last seven days, on how many days has child's name had friends round to your home or been out with friends? None/1-2/3-5/6 or more *[available wave 3 onwards]*
Are there enough bedrooms for every child of ten or over of a different sex to have their own bedroom?	**Proxy:** Bedroom standard index (derived variable) 2 or more below/1 below/equal/1 above/2 or more above *[Family level in FACS]*
Leisure equipment such as sports equipment or a bicycle?	Toys and sports gear for the children?
Celebrations on special occasions such as birthdays, Christmas or other religious festivals?	A celebration with presents, for friends and family at special occasions like birthdays?
Go to a toddler group/nursery/playgroup at least once a week? [under six not at primary/private school]	**Proxy measure considered but dropped**
Go on school trips?	**Proxy measure considered but dropped**
An outdoor space or facilities nearby where they can play safely?	**No equivalent measure**

*All FACS items where not indicated above have the following response options:

We have this;

We would like to have this, but cannot afford it at the moment; or

We do not have/need this at the moment.

Appendix C
Data manipulation and checks conducted

C.1   Child level data

Child level data sets for 2000 and 2001 were created in-house. It was clear that within these data there were anomalies, for example, more or less dependent children were stated to exist in the family level data than the number of dependent children found in the newly produced child level data.

As the mismatch was low, it was concluded that there would be little (if any) impact on the proportions of children in income poverty or material deprivation. We applied the Households Below Average Income (HBAI) definition of a dependent child as closely as possible to the Family and Children Study (FACS)[17].

Checks on the newly created child level data for 2000 and 2001 were performed by checking all the instances in which the number of children in the child level data file did not match the number of dependent children recorded in the family level data file. Each case was checked against the household grid information and an action taken where appropriate to add or delete records. In this way many of the mismatches were resolved.

Child level data was not created for 1999 as the household grid information was not detailed enough to perform this.

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[17] The HBAI definition of a dependent child is: under-16, unmarried 16-18-year-old on a course (up to and including 'A' level standard).

In conclusion, child level data created for FACS 2000 and FACS 2001 was deemed to be accurate enough for our purposes. For 2002 onwards, where child level data was already available, steps still had to be taken to exclude non-dependent children.

C.2   Income data

C2.1   Equivalisation

Organisation for Economic Co-operation and Development (OECD) equivalised income was derived in-house for FACS 1999 to FACS 2002 as it was only available for the latest wave of data, wave 5. Checks on the OECD derivations were performed by: conducting a further check of the syntax and looking at the data to see that a random sample of cases had OECD income calculated correctly. In addition, the income distributions for each year were compared for McClements and OECD equivalised incomes.

C2.2   Income series

Comparisons of the FACS survey income series were made against the Family Resources Survey (FRS), over the same period (FRS 1999/2000 to FRS 2003/04), to see how income has changed over time in another survey data source. The FRS and FACS record similar levels of income for families (excluding self-employed) albeit the latter records lower mean and median values. The components of income observed were also similar for benefit and tax credit amounts.

Further evidence supports the observed increases in income over the period 1999 to 2002. McKay, acting as an expert consultant on FACS, observed that: for lone parents the rise in median income between 1999 and 2001 was 23 per cent in FACS and 17 per cent in FRS over the same period. His earlier work, whilst acting as an academic expert on FACS, confirms the correspondence between FACS and HBAI (FRS-based) data for families with children. It confirms that income growth between FACS 2001 and FACS 2002 follows income growth between HBAI 2001/02 and HBAI 2002/03. In conclusion, the income series in FACS is considered to be acceptable for our purposes.

Furthermore, the income distributions in FACS 1999 to 2003 were displayed against the FRS over the same period. These looked very similar and add further reassurance as to the reliability of the FACS survey income data.

C2.3   Grossing/weights

Current grossing weights gross to the number of families (for example, 6.97 million in 2003). To produce estimates of the number of children in income poverty and material deprivation, wGROSSP can be used in the child level data. A child, specific grossing weight may also be developed by in the future.

Advice from internal and external colleagues concluded that wGROSSP could be applied to the child level data. All analyses must include the self-employed in order to achieve the correct population totals, i.e. the number of children.

Trends in material deprivation items

There were steep drops in deprivation in FACS between 2000 and 2001 on most deprivation items.

In checking that the results of our data analysis were genuine, we found further supporting evidence from existing reports, which supported the decline in deprivation:

Vegeris & Perry (2003) observed a decline in deprivation on items between 2000 and 2001 for lone parents and low-income couples.

Berthoud *et al.* (2004) showed a steep decline in grouped deprivation items (daily living and financial strain[18]) between both 1999 and 2000 and 2000 and 2001. The decline tailed off for 'financial stress' between 2001 and 2002 but was still quite steep for 'daily living'.

Steve McKay (Bristol University, adviser on FACS) responded regarding the phenomenon of decreasing deprivation between 2000 and 2001. He highlighted that there were some important increases in average income between these surveys and to the larger gap between waves (the gap of 18 months or so between interviews. This meant that all sources of income, especially benefits and earnings, grew quite quickly.

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[18] 'Daily living' included 20 deprivation items from FACS on food, clothing and leisure. 'Financial Strain' included six items from FACS. Only six of the 26 items in these two sub-indexes were used in the index we created, these are all from the 'daily living' sub-indexes and include: two pairs of shoes for each adult, celebrations, toys/sports gear for children, friends round for a meal, a night out once a month (proxy) and a one-week holiday.

Appendix D
Simple count and weighted indexes over time

Table D.1   Number of deprivation items lacked by income poverty (70 per cent of median OECD income before housing costs)

							Column percentages	
	Income poor				**Not income poor**			
Number of Items lacked	**2001**	**2002**	**2003**	**2004**	**2001**	**2002**	**2003**	**2004**
None i.e. not in deprivation	7	7	8	8	35	34	35	36
1	15	19	17	16	30	31	33	33
2	15	16	18	18	14	15	15	14
3	17	17	18	19	8	8	8	9
4	14	13	14	13	5	5	4	4
5	12	10	10	10	3	3	2	2
6	8	9	7	8	2	2	1	1
7	6	6	4	4	1	1	1	1
8	3	3	3	3	1	*	*	*
9	2	1	1	1	*	*	*	0
10	1	*	*	*	0	0	0	0
11	*	0	*	*	0	0	0	0
12	NA	NA	NA	NA	NA	NA	NA	NA

Note: FACS 2001, 2002, 2003 and 2004 – *12 deprivation items* in each year.

Weighted by wGROSSP.

NA=not applicable, *= less than 0.5 per cent, numbers may not sum to 100 due to rounding.

Table D.2   Prevalence weighted deprivation summary index score (anchored to the baseline) by income poverty (70 per cent of median OECD income before housing costs)

Column percentages

Score (0 to 100)	Income poor				Not income poor			
	2001	2002	2003	2004	2001	2002	2003	2004
Zero i.e. not in deprivation	7	7	8	8	35	34	35	36
Less than 5	9	13	12	11	20	22	24	23
Over 5 but less than 10	6	6	5	5	10	9	9	9
Over 10 but less than 15	12	13	15	16	12	13	13	13
Over 15 but less than 20	10	10	10	11	6	6	6	6
Over 20 but less than 25	10	10	9	10	5	4	4	5
Over 25 but less than 30	12	10	13	11	4	4	4	3
Over 30 but less than 35	5	5	3	5	2	2	1	2
Over 35 but less than 40	8	6	8	6	2	2	1	1
Over 40 but less than 45	6	6	5	5	2	1	1	1
Over 45 but less than 50	3	3	3	3	1	1	1	*
50 or more	12	11	8	9	2	2	1	1

Note: FACS 2001, 2002, 2003 and 2004 – *12 deprivation items* in each year.

2001 prevalence weights applied to each consecutive year. Weighted by wGROSSP.

*= less than 0.5 per cent, numbers may not sum to 100 due to rounding.

Table D.3   Prevalence weighted deprivation summary index score (not anchored to the baseline) by income poverty (70 per cent of median OECD income before housing costs)

Column percentages

Score (0 to 100)	Income poor				Not income poor			
	2001	2002	2003	2004	2001	2002	2003	2004
Zero i.e. not in deprivation	7	7	8	8	35	34	35	36
Less than 5	9	13	12	11	20	22	24	23
Over 5 but less than 10	6	6	5	5	10	9	9	9
Over 10 but less than 15	12	13	15	16	12	12	13	13
Over 15 but less than 20	10	10	10	8	6	6	6	5
Over 20 but less than 25	10	9	9	12	5	4	4	5
Over 25 but less than 30	12	12	13	9	4	4	4	3
Over 30 but less than 35	5	4	3	5	2	2	1	1
Over 35 but less than 40	8	7	8	8	2	2	1	2
Over 40 but less than 45	6	6	5	3	2	1	1	1
Over 45 but less than 50	3	3	3	5	1	1	1	1
50 or more	12	11	8	9	2	2	1	1

Note: FACS 2001, 2002, 2003 and 2004 – *12 deprivation items* in each year. Year-specific prevalence weights applied to each year. Weighted by wGROSSP. *= less than 0.5 per cent, numbers may not sum to 100 due to rounding.

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