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Measuring performance:
Does the assessment depend on the poverty proxy?
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Measuring performance: does the assessment depend on the poverty proxy?

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Abstract:

Poverty indicators often disagree about whether a person is poor or not. Yet, when it comes to assessing whether a programme is successful in reaching the poor the dominant practice is to use an income poverty indicator. This paper investigates whether the choice of welfare indicator influences the pro-poorness assessment of an intervention. Using the official European Union income and material deprivation indicators, this paper compares the outcomes of three performance indicators for three types of income transfers in six European countries. The analysis indicates that income transfers are assessed as far more successful when the information from both indicators is combined.

Keywords: performance, poverty, income, material deprivation, transfers, European Union, EU-SILC

JEL: I32, I38

1. Introduction

Assisting the less well-off is often an explicit or implicit aim of public interventions and especially in policy domains such as taxation, social protection, social work, health, education and housing. Irrespective of whether an intervention is specifically targeted at the least well off or at a broader segment of the population, policy analysts need to choose an indicator to evaluate the intervention's success.

When evaluating the pro-poorness or progressiveness of interventions, income is by far the most popular indicator to assess whether an intervention i) reaches the poor / is progressive, ii) has an impact and iii) is cost-effective. The advantages of income as an indicator of 'success' are that the information is widely available in administrative and survey data; it typically reflects families' most important source of financing their living standard; and, particularly in large samples, its near-continuous distribution allows assessing income differences between groups as well as changes over time with considerable precision.

Income, however, is not without shortcomings and it is also not the only available indicator of success. Asset holdings, for instance, can also finance a family's living standard (Brandolini, Magri, & Smeeding, 2010). In the case of assets, ignoring such information underestimates a family's financial resources while for debts the reverse holds. Moreover, the value of in-kind transfers and indirect taxes is typically not accounted for in assessing a family's income which may also misestimate a family's resources (Garfinkel, Rainwater, & Smeeding, 2006; Paulus, Sutherland, & Tsakloglou, 2010). In all of the above cases the missing information can explain why discrepancies between a family's income and its actual living standard may arise. A further shortcoming of income is that the indicator implicitly assumes that the goods and services can be purchased from well-functioning markets ignoring market imperfections and market failures such as rationing and public goods (Bourguignon & Chakravarty, 2003). Sen (1999) further argued that, albeit important, income is merely a means to an end; and, that in addition to the above mentioned shortcomings, there are contextual differences between individuals (be they personal, environmental, social, cultural or intra-household) that can explain why individuals with the same income and desires may end up with different outcomes.

In addition to using better or complementary indicators of financial resources, an alternative group of indicators focuses on a family's material outcomes to assess the success of policy interventions: the advantage of such indicators is that they measure a family's or person's living standard in direct way.[1] In Europe, Australia, Canada and developing countries such indicators are typically labelled as 'material deprivation' (Nelson, 2012; Saunders & Wong, 2011) while in the United States the term 'material hardship' has more currency (Cancian & Meyer, 2004; Huston & Bentley, 2010; Lim, Livermore, & Davis, 2010; Wu & Eamon, 2010; Zilanawala & Pilkauskas, 2012). In either case, the indicators are measuring whether the family or person is involuntarily missing an item or aspect considered to be normal or typical for the society in which they live (Guio, 2009; Townsend, 1979). Examples of such indicators are whether the

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[1] The advantages and shortcomings of such indicators are further discussed in section 3.

family was cut off from basic utilities such as water and electricity, or whether the family can afford to have fresh fruit every day.

As the use of non-monetary indicators increased, scholars have investigated the degree to which monetary and non-monetary poverty proxies overlap at the level of families and individuals (see for instance in Europe: (Fusco, Guio, & Marlier, January 2011; Nolan & Whelan, 2010); and in the United States: (Cancian & Meyer, 2004; Sullivan, Turner, & Danziger, 2008). Using different definitions of indicators and covering different countries, the common finding among such studies is that while there is a positive correlation between monetary and non-monetary proxies, they only partially overlap resulting in significantly sized groups being poor according to one but not the other and a 'core' group being poor according to several indicators. Rather than selecting the 'best' one, the proxies are generally seen as complementary and in poverty analyses it is now common practice to monitor poverty using various proxies. For instance, the European Union annually reports on poverty and social exclusion by using a portfolio of indicators (Marlier, Atkinson, Cantillon, & Nolan, 2007).

In policy analyses, however, the effect of programmes and policies on poverty is typically evaluated using either a monetary or a non-monetary poverty proxy. This is problematic because as these indicators only partially identify the same group of individuals as poor or less well off, different indicators may assess a programme's performance differently. This is exactly what Cancian and Meyer (2004) find when using an income poverty proxy and material hardship indicators to assess the living standard of TANF participants in Wisconsin.

This paper investigates this issue further by focusing on the question: how influential is the choice of welfare indicator when assessing the pro-poorness of policy interventions? The research takes a cross-national perspective comparing six EU member states and focuses on key income transfers to households with working age adults: social assistance, housing allowances and family allowances. Included are Germany, France, United Kingdom, Ireland, Netherlands and Sweden: these countries have a similar average living standard but have different social protection systems. We use two welfare indicators that are used by the EU to construct poverty measures: income and material deprivation. Both indicators are measured at the household level; the EU material deprivation indicator is the number of deprivation items (nine in total) that a household is lacking. Rather than using the official EU poverty and material deprivation indicators, which yield different estimates of poor population groups, we analyse pro-poorness by looking at the 20 percent of the population based on the *pre-transfer* income and material deprivation distributions. A transfer is considered pro-poor when it reaches the least well off and/or when the sum of transfers is distributed progressively.[2] The natural variation existing between these countries and the design of their income transfers provide ample scope for investigating whether using different poverty proxies affects the pro-poorness assessment and over what range such assessments can differ. The latter is particularly important not only because it informs those involved in impact studies and policy evaluations but also because it provides an indication of whether the differences are likely to be large enough to reassess the interventions.

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[2] The analysis in this paper does not attempt to isolate the effect of the intervention (i.e. income transfers) from other factors influencing families' well-being such as their capabilities, behaviour or other help received.

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After discussing a number of key considerations relevant for (pro-poorness) assessments, this paper explains the methods and data used. This is followed by the presentation of the findings and a concluding discussion.

2. Assessing pro-poorness

The problem of evaluating the pro-poorness of an intervention appears simple in theory but is less straightforward in practice because the analyst faces a double identification problem: she needs to assess whether an individual is poor and whether this person is an intended beneficiary of the intervention. If the sole objective of the intervention were to exclusively assist every poor individual then, in theory, it is successful when poor individuals participate and non-poor individuals do not (see Table 1A). In practise, the analyst has to rely on proxies to make this assessment. Even if data quality and misreporting are not an issue, a proxy is only a guess of whether this is the 'right' individual. Using an income poverty proxy, for example, we may identify a millionaire living off his/her assets as poor (false positive) and a modest-income family with high-cost needs as non-poor (false negative). Consequently, there is uncertainty around the failure / success labels in Table 1A. Using several poverty proxies jointly will not solve this fundamental problem either. Unless the proxies completely overlap, the potential target population increases (Table 1B).

Table 1A: Evaluating pro-poorness in theory (in practice)

	Intervention	
Economic well-being	**Participates**	**Does not participate**
Poor	Success (?)	Failure (?)
Not poor	Failure (?)	Success (?)

Table 1B: Evaluating pro-poorness with multiple proxies (in practice)

	Intervention	
Economic well-being	**Participates**	**Does not participate**
Proxy I: poor	Success (?)	Failure (?)
Proxy II: poor	Success (?)	Failure (?)
Proxy I & II: poor	Success (?)	Failure (?)
Proxy I & II: not poor	Failure (?)	Success (?)

Moreover, most interventions do not aim to exclusively reach every poor individual. Even programmes whose primary aim is to assist the poor are often explicitly designed to include the 'near poor'. This is to prevent behavioural disincentives resulting in poverty or welfare traps but also in acknowledgement of the above mentioned measurement problem. Furthermore, the experience of poverty and the escape from it is seen as a gradual process rather than a discrete event. There are also programmes serving a broader population, which may not have an explicit or exclusive poverty reduction objective, but which nevertheless assist the least well off (such as universal health insurance or child benefits). Thus, while assistance to non-poor participants represents a failure when strictly applying the pro-poorness criterion, it may still be considered a

success when a somewhat broader criterion is applied.[3] Therefore it is desirable to also study the pro-poorness, or better, progressiveness of an intervention encompassing a larger part of the population. Given these reasons, this paper looks at the poorest 20 percent of the population rather than the percentage of the population deemed poor according to the official EU income poverty and material deprivation indicators.

Finally, there may be circumstances in which one proxy may be preferred over another. For instance, some programmes are designed to address the problems of specific subpopulations of the poor (i.e. the chronic poor, the poor elderly or the poor with low levels of human capital) and it may well be that one proxy tends to be more successful at identifying this sub-population than other proxies.

3. Data and methods

To investigate how different welfare indicators influence the assessment of the progressiveness of policy interventions this study takes a comparative approach involving six European Union member states, three categories of income transfers, two welfare indicators and three performance indicators. The countries have been selected because they have a similar average living standard but different social protection systems and different social and economic structures. This natural variation serves as a background against which to explore the degree to which pro-poorness assessments may differ when different welfare indicators are used. A practical advantage is that for these countries information from a harmonized data source is available.

3.1 Data

This paper uses microdata from the 2007 cross-sectional component of the European Union Statistics on Income and Living Conditions (EU-SILC). The EU-SILC data (available from 2004 on) provide comparative annual statistics on income, poverty and social exclusion that are collected by the national statistics offices of 32 European countries. A common framework is used to collect harmonized variables on private households and individuals.[4] The database holds a range of individual and household level income information including disposable income and income from transfer categories such as pensions, unemployment benefits, disability benefits, family and child related allowances, housing allowances and social assistance allowances. The database further holds information on a range of material deprivation items as well as information on the characteristics of the household and its members (demographics, health, labour and education). Although the EU-SILC data are by far the best data around for this type of analysis, the cross-national comparability is not perfect. Comparability issues are thus flagged in the remainder of this section. Table 2 lists the number of observed households per country.[5]

3.2 Welfare indicators: income and material deprivation

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[3] From a program management perspective reaching a non-poor but intended participant is also a success.
[4] For more information on the EU-SILC consult Eurostat's website:
http://epp.eurostat.ec.europa.eu/portal/page/portal/microdata/eu_silc
[5] Unless mentioned otherwise, all results are weighted taking survey design into account. The variables accounting for survey design have been programmed using the coding developed by Tim Goedeme (2011).

The pro-poorness assessments are performed using the pre-transfer income distribution and the pre-transfer material deprivation distribution. The first distribution is based on households` total disposable income before transfers. This variable is calculated as total disposable income minus the sum of family, housing and social exclusion allowances (European Commission, March 2009a, p. 110-111). The income variable is largely comparable across these countries with main differences being the method of data collection (self-administered, interview or register) and whether income sources are collected in net or gross amounts (see Table A1 in the appendix). It should be noted that this definition only provides an approximate pre-transfer distribution because the transfer variables are collected in gross values while many transfers are subject to income tax.[6] Moreover, though it is common practice to calculate the pre-transfer distribution using a static simulation technique, a limitation of this method is that it holds all other factors (including behavioural changes such as labour supply) constant.

For illustrative purposes we have also included the official EU income-poverty rates in Table 2 which vary from 10.7 per cent in the Netherlands to 21 per cent in the United Kingdom. This is the so-called 'at-risk-of-poverty' rate which has been calculated using the adult equivalent income distribution (using OECD-modified equivalence scales) and a threshold set at 60 per cent of national median income (p. 133). The limitations of using income as a poverty proxy have already been set out in the introduction of this paper.

The second proxy is the pre-transfer material deprivation distribution which is based on the estimated number of deprivation items that the household cannot afford *before* the receipt of transfers. The deprivation items are stored as binominal variables and include the following items: 1) to pay rent or utility bills (i.e. payment arrears), 2) to keep the home adequately warm, 3) to face an unexpected expense of about 800 Euro, 4) to eat meat, fish or a protein equivalent every second day, 5) a week holiday away from home, 6) a car, 7) a washing machine, 8) a colour TV, and 9) a telephone. As the data provide information on the items that a household cannot afford given their current *post-transfer* income, we estimate the *pre-transfer* distribution using a negative binomial regression model to estimate the income effect of (not having) the transfer on the number of material deprivations of the family. The methodology and results are explained in further detail in appendix 2.

In the EU, these items are used to calculate the material deprivation rate; a household is considered materially deprived if they lack three or more items. These items were selected because they "reflect the lack of an ordinary living pattern common to a majority or large part of the population in the European Union and most of its Member States" (Guio, 2009, p. 3). The Eurobarometer survey provides an external validation for these items in the sense that these items are considered to be absolutely necessary or necessary by 50 per cent or more of the EU-27 population (p. 4). While the survey questions have been designed to assess whether the households experiences an enforced lack of an item due to limited resources (rather than a preference based choice), the use of material deprivation indicators as a poverty proxy is not without its limitations. As their income increases, individuals` expectation about their material

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[6] While there is a simulated tax variable in the database (an estimate based on total household income), it is unfortunately not possible to deduct the net value of each transfer category. Consequently, the pre-transfer disposable income variable is thus likely to underestimate a household's pre-transfer but post-tax disposable income.

well-being also tends to increase. Consequently, households with a lower living standard may report that "they do not want things that are impossible to obtain" (p. 3). Moreover, feelings of shame may result in underreporting of enforced lack of items.[7] Also, material deprivation is a relative measure meaning that the list of deprivation items needs to be regularly reassessed including new items and dropping old items (p. 5). Unlike relative income-poverty, where the poverty threshold is automatically re-set every year by using the new median income, the material deprivation items are used for longer time periods and, in this case, are selected to reflect social necessities across 27 EU member states with considerably different average living standards.

According to the commonly agreed EU definition, a household and all its members are materially deprived if they miss three or more deprivation items (Guio, 2009). Table 2 shows the item deprivation rates and the material deprivation rates at different cumulative deprivation thresholds: using the official threshold of three or more items material deprivation rates range from 6.0 per cent in Sweden to 13.8 per cent in Germany. As the selected countries have the highest average income levels in the EU, it is not surprising that some of the item deprivation rates are very close to zero (washing machine, colour TV and telephone). Table 2 also shows that the income poverty and material deprivation proxies overlap only partially: while 74 to 85 per cent of the population is not poor according to either proxy, 2-7 per cent is poor for both while 4-16 per cent is poor according to one proxy but not the other. Using the two official proxies of the EU, these calculations show that the identification problem set out in the previous section is significant: the potential target population in the studied countries varies from 2-15 per cent in Sweden and the Netherlands to 5-26 per cent in Ireland. It is further very likely that these groups also differ in the extent to which they are poor as well as the circumstances explaining their situation.

This paper focuses on the 20 per cent poorest population groups according to each welfare indicator (ranked from least to best well off) instead of the percentage of poor. This approach has the advantage that it yields equally sized target groups for each welfare indicator and, thus, that differences in pro-poorness are not simply due to differences in the generosity of poverty thresholds. It further takes into account that (escaping / entering) poverty is not a discrete event and that including the 'near' poor into the target group reduces welfare traps (see previous section).

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[7] Shame was also mentioned as a possible explanatory factor by Breunig and McKibbin (2011) who find that differences in survey design lead to differences in reporting deprivation. Using two Australian surveys with identical deprivation questions, deprivation rates collected through self-completed questionnaires were higher than those found in face-to-face computer assisted interviews.

Table 2: Summary statistics (unit of analysis: household)

Observations	DE	FR	IE	NL	SE	UK
# of households	14,015	9,973	5,522	10,010	6,734	8,679
# of households with children (age 0-17)	3,711	3,445	1,605	3,595	2,616	2,497
Income poverty (%)						
- 50% of national median income	11.3	6.8	10.3	5.1	7.2	12.6
- 60% of national median income (income proxy)	17.9	12.7	21.4	10.3	11.6	20.8
- 70% of national median income	25.8	20.2	31.1	20.5	19.5	28.9
Material deprivation indicators (%)						
- payment arrears for rent or utility bills	5.1	8.5	7.0	3.7	4.7	6.7
- cannot afford to keep home adequately warm	6.1	5.0	3.6	2.1	2.1	4.9
- is not able to face unexpected expenses [1]	38.9	33.0	39.2	23.6	20.3	26.0
- cannot afford to eat meat, fish or a protein equivalent every second day	12.1	6.7	2.1	2.2	3.9	4.0
- cannot afford a week holiday away from home	25.4	30.2	20.7	17.0	13.5	20.5
- cannot afford a car	7.3	3.9	10.0	8.0	5.3	5.4
- cannot afford a washing machine	0.7	1.5	1.1	0.2	0.0	0.5
- cannot afford a colour TV	0.7	0.3	0.3	0.1	0.9	0.1
- cannot afford a telephone	0.4	0.9	0.7	0.0	0.0	0.2
Number of deprivations (%)						
- 0 deprivations	53.3	56.1	55.8	68.6	72.2	67.1
- 1 deprivation	18.9	17.5	20.9	15.6	13.5	12.8
- 2 deprivations	14.1	14.6	13.3	8.9	8.2	10.4
- 3 deprivations (mat. deprivation proxy)	7.9	6.7	5.7	4.7	4	5.8
- 4 or more deprivations	5.8	5.1	4.3	2.2	2.0	4.1
Overlap poverty proxies (%)						
- Both	6.9	4.3	5.3	2.0	2.0	4.7
- Only income-poor	11.0	8.3	16.1	8.3	9.6	16.1
- Only materially deprived	6.9	7.6	4.7	4.8	4.0	5.0
- Neither	75.2	79.8	73.9	84.9	84.3	74.2
Mean number of material deprivations	0.97	0.90	0.85	0.57	0.51	0.68
.Mean disposable household income [2]	20,009	18,775	25,529	20,904	19,840	24,342
Mean income before transfers [2]	19,242	17,881	23,681	19,835	19,014	22,959
Mean transfer income [2][3]	2,126	2,240	2,617	2,572	2,461	3,486

[1] Amount (in Euro) varies per member state: DE: 860, FR: 800, IE: 875, NL: 850, SE: 865 and UK: 733.
[2] Expressed in adult equivalent annual Euro amounts.
[3] Includes family, social exclusion and housing transfers; averaged over recipient households only.
Source: EU-SILC (2007)

Table 3: Comparison income and material deprivation distributions (at 1st quintile)

	DE	FR	IE	NL	SE	UK
Overlap first quintile (%)						
- Neither	71.1	71.4	71.1	71.9	69.7	70.7
- Only 1st quintile income	8.9	8.6	8.8	8.1	10.3	9.2
- Only 1st quintile materially deprivation	8.9	8.6	8.9	8.1	10.3	9.2
- Both	11.1	11.4	11.2	11.9	9.7	10.8
Mean disposable household income[1]						
- In either or both 1st quintiles	10,978	11,120	13,563	12,243	12,582	13,261
- Only 1st quintile income	8,332	9,041	11,361	10,402	10,060	10,081
- Only 1st quintile materially deprivation	12,405	12,007	14,675	13,243	14,038	15,179
- In both 1st quintiles	8,781	9,027	11,613	10,833	10,379	10,915
Mean income before transfers[1] **(family, housing & social inclusion allowances)**						
- In either or both 1st quintiles	9,415	9,034	9,787	9,203	10,899	9,745
- Only 1st quintile income	6,607	6,496	6,947	6,463	7,928	5,732
- Only 1st quintile materially deprivation	10,447	9,612	10,393	9,300	12,258	10,791
- In both 1st quintiles	6,214	5,593	5,789	4,769	7,563	4,232
Mean number of deprivations						
- In either or both 1st quintiles	2.42	2.22	2.12	1.67	1.47	1.94
- Only 1st quintile income	2.21	1.92	1.90	1.45	1.18	1.66
- Only 1st quintile materially deprivation	3.09	2.91	2.81	2.25	2.14	2.71
- In both 1st quintiles	3.25	2.91	2.94	2.27	2.25	2.84
Mean number of deprivations before transfers **(family, housing & social inclusion allowances)**						
- In either or both 1st quintiles	2.78	3.09	2.89	2.74	1.75	2.91
- Only 1st quintile income	2.71	3.12	2.96	2.94	1.59	3.04
- Only 1st quintile materially deprivation	3.59	4.06	3.85	3.74	2.54	4.07
- In both 1st quintiles	4.09	4.86	4.74	4.74	3.04	5.31

[1] Expressed in adult equivalent annual Euro amounts.
Source: EU-SILC (2007)

Table 3 compares the 1st quintiles of the income and material deprivation indicators. With the effect of the poverty threshold removed, the overlap between the welfare distributions is now strikingly similar for the studied countries. About 30 per cent of the population is either in the lowest income quintile, the highest material deprivation quintile or both. And 10 per cent of the population is in the lowest quintile of both distributions. Due to the ranking process, the average income level of households in the 1st income quintile is lower than that of households in the 1st material deprivation quintile. Similarly, households in the 1st material deprivation quintile have on average a higher number of deprivations than households in the 1st income quintile. What is interesting though is that the group of households that is present in both quintiles is worst off in any indicator (pre or post transfer, income or material deprivation).

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Just like choosing a poverty threshold the choice for looking at quintiles rather than quartiles for instance is somewhat arbitrary. Table 4 provides another perspective on the degree of overlap between the two welfare indicators: about a 20-30 per cent of the 1st quintile households are in the 2nd quintiles of the other distribution while 15-25 per cent are ranked in the three best off quintiles for the other indicator.

Table 4: Rank of 1st quintile households ranked in the other welfare distribution (%)

	DE	FR	IE	NL	SE	UK
In the 1st material deprivation quintile and:						
- In 1st income quintile	55.5	56.9	55.8	59.6	48.3	53.8
- In 2nd income quintile	24.1	26.2	25.2	24.8	27.0	22.7
- In 3-5th income quintiles	20.5	16.9	18.9	15.6	24.7	23.4
In the 1st income quintile and:						
- In 1st material deprivation quintile	55.5	57.0	55.9	59.6	48.3	53.8
- In 2nd material deprivation quintile	27.5	20.3	21.3	23.9	29.2	23.3
- In 3-5th material deprivation quintiles	17.0	22.7	22.9	16.4	22.5	22.9

Source: EU-SILC (2007)

3.3 Income transfers

This paper focuses on income transfers to test how the choice of welfare indicators influences the pro-poorness assessment of interventions for two reasons: firstly because income transfers represent a key instrument for supporting less well-off households in these countries and secondly, because this information is jointly available with the required income and material deprivation information.[8] Social transfers in the EU-SILC are defined as "current transfers received by households during the income reference period and intended to relieve them from the financial burden of a number of risks or needs, made through collectively organised schemes, or outside such schemes by government units and Non Profit Institutions Serving Households" … "In order to be included as a social benefit, the transfer must meet one of two criteria. First, coverage is compulsory (under law, regulation or a collective bargaining agreement) for the group in question. Second, it is based on the principle of social solidarity (i.e. if it is an insurance-based pension, the premium entitlements are not proportional to the individual exposure to risk of the people protected)." … "Social benefits do not include benefits paid from schemes into which the recipient has made voluntary payments only, independently of his/her employer or government" (Commission Regulation (EC) No 1980/2003 of 21 October 2003).[9]

We analyse three categories of income transfers separately and in several stages of aggregation: family and child related allowances, housing allowances and social exclusion transfers. These

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[8] For a detailed description of income and transfer variables we refer to the *Description of SILC user database variables* (European Commission, March 2009a) and the *EU-SILC user database description* (European Commission, March 2009b) which are also available online (https://circabc.europa.eu/faces/jsp/extension/wai/navigation/container.jsp).
[9] With acknowledgements to Van Rie and Marx (2011, p. 10-11) who assembled this definition from the EU-SILC documentation.

transfer categories were chosen because, in comparison to insurance based transfers, they are more likely to include last resort type of transfers i.e. transfers that aim at providing a basic minimum income. As poverty reduction is often an explicit objective, it makes sense to use these transfers as cases to test whether the pro-poorness assessment differs by welfare indicator. As the data for these categories have been collected at a household level and programme eligibility / transfer amounts are also often contingent on the household context, households are the unit of analysis. The reference population for social exclusion and housing allowances is the total household population; for family allowances where the reference population only includes households with children under the age of 18.[10]

The transfer information used in this paper is stored in three EU-SILC variables that are labelled as "Family/children related allowances", "Housing allowances" and "Social exclusion not elsewhere classified". These variables report the amount of transfers received in the reference year and are claimed to be fully or largely comparable according to the data quality reports (see Table A1 in the appendix). A transfer variable may include a range of interventions whose programme design varies both within and between countries. Thus, even within one transfer category for one particular country, one might find universal, income-tested and means-tested allowances targeting different population groups with different eligibility criteria and different levels of generosity. While this variation allows for a good testing ground for the influence of using different poverty proxies, the grouping of several interventions into one category limits the scope for a more detailed analysis on the relation between different styles of programme design and the pro-poorness assessment.[11] A further challenge is that the EU-SILC documentation fails to provide detailed information on what country specific arrangements are included in each category. To enhance the ability to triangulate and better interpret the results, this study addresses this challenge in two ways. Firstly, representatives of the national statistics offices were contacted to provide additional information on the included arrangements. Secondly, this study collected information on the main design features of each arrangement. Table 5 summarizes the type of programmes (universal, income-tested or means-tested) that are included in the transfer categories for each county while Table 6 summarizes the incidence rates (coverage) and mean transfer amounts. More detailed information is provided in appendix 3.

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[10] Given the diversity in income transfer programs across countries the reference populations are an approximation. In some countries, family allowances also cover families with children above the age of 17 years while in other countries social assistance transfers only cover families with adults up to pensionable age while other transfer programs are in place to cover persons of pensionable age.
[11] It may well be that one welfare indicator is more successful in identifying a program's target group than another. In such a case, it may be appropriate to prefer a specific welfare indicator when conducting a program evaluation or impact assessment.

Table 5: Type of transfer programmes available (grey cells: not included in transfer variable)

	DE	FR	IE	NL	SE	UK
Family allowances						
Universal programmes	yes	yes	yes	yes	yes	yes
Income-tested programmes	yes	yes	yes	yes	no	yes
Means-tested programmes	no	yes	yes	no	no	no
Child care programmes for very young or sick children	yes (stay at home parents)	yes (sick children)	yes (working parents)	no	yes	no
Maternity related programmes (contributions related or not)	no	no	no	no	yes	yes
Social exclusion allowances						
Income-tested programmes	no	yes	no	yes	yes	yes
Means-tested programmes	yes	no	yes	yes	yes	yes
Housing allowances						
Income-tested programmes	yes	yes	no	no	yes	no
Means-tested programmes	no	no	yes	yes	no	yes

Source: own research, see also appendix 3.

Table 6: Summary statistics of transfer indicators

	DE	FR	IE	NL	SE	UK
Coverage						
Any household transfers (family, social exclusion, housing)	36.1	39.9	70.6	41.6	33.6	39.7
- Social assistance (social inclusion and/or housing benefits)	8.0	26.2	32.3	20.3	10.7	18.5
- Social inclusion	2.8	24.8	30.6	15.2	9.5	13.5
- Housing	5.6	5.0	4.0	10.4	3.1	10.8
- Family [2]	98.3	79.2	99.8	95.8	84.5	94.5
Mean amount of transfers (averaged over recipients only) [1]						
Any household transfers (family, social exclusion, housing)	3,789	4,060	5,130	3,664	4,634	5,796
- Social assistance (social inclusion and/or housing benefits)	4,670	3,346	2,262	6,975	3,594	8,156
- Social inclusion	1,154	2,232	1,533	1,796	2,146	5,083
- Housing	5,671	3,747	838	7,748	4,413	5,508
- Family [2]	3,752	3,681	6,692	1,699	4,665	3,460

[1] Expressed in annual Euro amounts.
[2] Only households with children age 17 or below.
Source: EU-SILC (2007)

Of the three transfer variables, the one on family allowances includes by far the widest range of transfer programmes. Triangulating the results from our own research with the information provided by representatives of the national statistics offices it is found that this variable is a 'catch all' for universal, means-tested, income-tested and social insurance related transfers, which may be provided through transfer programmes or the income tax system. Furthermore, in

some cases important family related transfer programmes are either not incorporated or categorized under another transfer variable (indicated by the grey shaded cells in Table 5). The Netherlands, for instance, has quite a number of income-tested transfers which are distributed via the tax system but these programmes are not included in the family allowances variable or elsewhere. Maternity related programmes on the other hand tend to be classified under "Sickness benefits" (not studied in this paper) but are included as part of family related allowances for the UK. These limitations do not affect the analysis presented in the remainder of this paper: if we want to compare the performance of transfer categories and countries, the current information suffices. However, given these blind spots in the data, one has to be very cautious in interpreting the pro-poorness findings as reflective of actual national efforts to assist households as they do not necessarily represent all relevant parts of the transfer system in these countries.

The summary statistics in Table 6 show that coverage rates among families with children under the age of 18 years are above 95 per cent for most countries thus confirming the role of universal programmes in this transfer category. [12] The lower coverage rate of France (80 per cent) can be attributed to the fact that only families with two or more children are eligible for the universal programme.[13] In Sweden the universal allowance applies to children aged 0 to 16 years (or 20 if in full-time study) but these factors alone seem insufficient explanation of why 15 per cent of the households with children under 18 are not registered as receiving family allowances. Table 6 further shows that there is quite some cross-national variation in the average amounts of family transfers. Dutch households receive on average the lowest amount but, as noted above, income-tested transfers through the tax system are not included. The most generous amounts are found in Ireland, with households receiving on average close to 6,700 Euros annually.

The social exclusion variable includes transfers provided as part of minimum income programmes as well as support for households with low (but above minimum) financial resources. Usually countries have a combination of transfer programmes managed by welfare offices and tax credits though the tax system. Eligibility always depends at minimum on an income-test and often on a means-test assessing both household's income and assets. As with the family allowance variable, not all relevant transfers are included in this variable. For Germany, transfers from the non-contributory unemployment assistance programme (Arbeitslozengeld II) are grouped together with the unemployment insurance under the unemployment benefits variable, which may explain the very low coverage rate (2.8 per cent). Unemployment assistance in France is also not included but despite this the social exclusion coverage rate is very high (25 per cent). For the Netherlands and Sweden the income-tested tax credit programmes are again not included. Furthermore, the asset-test in Ireland is very lenient (high maximum income and low claw back rate) which is consistent with the high coverage rate (31 per cent). In sum, our research indicates that the social exclusion variable includes either means-tested programmes only or a mix for (DE, IE, NL, SE, UK) or income-tested programmes only (FR and effectively

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[12] Universal should be interpreted here as not income- or means-tested. Other criteria such as age of the child, the number of children or whether the child is in full time education might in part determine eligibility and can thus explain why there is no full coverage among our benchmark households with children under the age of 18.
[13] We tested this hypothesis by calculating the coverage rate for families with two or more children. For this group the coverage rate is 97 per cent.

IE). In terms of generosity, the UK is an outlier with the average transfer amount being more than double that of the other countries.

The housing allowances variable is the least complex. It includes only one transfer programme (or, in the UK, two complementary programmes with the same means-test). For two countries (NL, UK) the housing allowances are means-tested while for four countries the allowances are income-tested (DE, FR, SE and effectively IE because of a very lenient asset test). Coverage rates vary from 3 per cent in Sweden to 11 per cent in the UK. In terms of generosity, housing allowances are considerably lower in Ireland (800) with average amounts in the other countries varying from 3,700 (FR) to 7,700 (NL).

We also aggregate the information to a variable including all household level transfers and joint variable for housing and social exclusion allowances. This is because the three transfer variables often include transfer programmes that are designed as complementary programmes. For instance, households receiving social exclusion allowances in the UK can additionally qualify for housing allowances and child related tax credits. [14] As a consequence, recipients of social exclusion transfers are thus more likely to also receive housing allowances. In comparison to other countries, Germany has low coverage in social assistance transfers. As explained above, this is likely due to the fact that recipients of unemployment assistance are counted as part of unemployment transfers.

In sum, the above discussion has shown that there is a wide cross-national variation in coverage and generosity of transfers, thus providing a diverse sample to investigate the relationship between choice of pro-poorness indicator and the assessment of a programme's success. The lack of overlap between pro-poorness indicators gives rise to the *hypothesis that this assessment is expected to differ between income and material deprivation indicators*. If the analysis provides evidence in favour of this hypothesis, then it would be desirable that programme evaluations would also include material deprivation and/or other indicators of financial well-being.

3.4 Measures of pro-poorness / progressiveness

This study uses three measures of pro-poorness because transfers may be pro-poor in one aspect but not according to another aspect. [15] The first measure is the coverage rate which is the percentage of families receiving the transfer which can be seen as a measure of success in reaching the target group. The second measure is the average transfer amount going to the first quintile of the well-being distribution. It is a measure for the generosity of the transfer. The third

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[14] Given the complementarity of the household level transfers, another way of assessing pro-poorness would be to assess the total amount of household transfers received by households with children receiving social assistance transfers.

[15] We also planned to include the share of total benefits received by the lowest quintile households (as a percentage of total benefit expenditures in the program) as a fourth performance indicator. However, the differences between point estimates with and without using population weights were very large. We tested whether the results would become more similar by top coding the values of outlier households in terms of high population weights and high benefit amounts but the differences in point estimates were still large. For the three performance indicators used in this paper, the differences between weighted and unweighted point estimates are small.

measure is the average benefit share which is measured as the contribution that transfers make to disposable income of 1st quintile households. The pro-poorness or progressiveness of a transfer increases as i. the percentage of first quintile households receiving the transfer increases, ii. the average amount of transfers distributed to the poorest households increases, iii. the benefit share increases.

4. Results

The aim of this paper is to find out whether one should be concerned that the current practice of using income as a performance indicator for assessing the pro-poorness of programmes systematically biases the judgement of a programme's success. Using the selected countries and categories of income transfers as a comparative case study, this section compares whether the 'success rate' of such interventions to reach the poorest households significantly differs when using either an income or a material deprivation measure. As a reference group for the poor we look at the poorest 20 per cent of households according to each welfare indicator. The minimum criterion that should be met is statistical significance i.e. whether we can reject the null-hypothesis that the point estimates of the performance indicators are the same. Given that we have six countries, three transfer categories (plus two aggregations of these categories) and three performance indicators, there are 90 cases on which this hypothesis is tested. There is reason for concern when there is a systematic pattern of rejections of the null hypothesis for these cases.

Table 7: Summary of comparison performance indicators between 1st income and material deprivation quintiles (Number of times Wald test reported a P-value < 0.01)

	By performance indicator[1]	Cases with P-value < 0.01	Total cases
By country			
DE	2+1+3	6	15
FR	3+4+3	10	15
IE	1+0+0	1	15
NL	3+1+1	5	15
SE	1+3+4	8	15
UK	1+1+3	5	15
Total	11+10+14	35	90
By transfer category			
Total transfers	6+4+4	14	18
Housing & social exclusion	2+1+2	5	18
Social exclusion	1+0+1	2	18
Housing	2+2+3	7	18
Family[2]	0+3+4	7	18
Total	11+10+14	35	90

Notes:
[1] Ordered as: coverage rate, average transfer amount, average income share of transfer
[2] Only including households with children under age 18

Table 7 summarizes the number of times that there is a statistical significant difference in performance. In 35 out of 90 cases there is a significant difference in performance levels. Of those 35, the 'total transfers' category had the highest incidence (14), followed by France (10). Given that each of the countries has at least one universal family transfer programme, it is not

surprising that we find very similar coverage rates. Tables 4.1-4.3 in appendix 4 report the actual values of the performance indicator and the Wald test. Looking at the first performance indicator, it can be seen that the coverage rates for the first material deprivation quintile are higher than those for the first income quintile (Table 4.1). An assessment based on material deprivation would thus suggest a higher success rate in reaching the least well off. However, one would reach a different conclusion for the second and third performance indicators, where in all of the significant cases (10 +14) the first income quintile receives a higher average transfer amount which also represents a higher share of disposable income (Table 4.2). In sum, in about two thirds of the cases the performance indicators yield similar conclusions and, in the remaining cases, the coverage rate attributes more success when using material deprivation while the other two indicators suggest that transfers are assessed as more generous using income.

Are these differences large enough to have policy relevance? For coverage rates we find percentage point differences ranging from 14 to 2 percentage points with the separate transfer categories having differences from 6 to 2 points. In terms of transfer amounts the difference ranges from 2,400 to 250 Euro annually. The largest differences are found for the aggregate transfer category and family allowances (most notably Sweden). The differences for income shares vary from 9 to 4 percent of disposable income. From the perspective of a household that is struggling to make ends meet, even modest amounts of 250 Euro would make a difference. From a programme evaluation perspective, however, most of the differences do not seem large enough to warrant reforms in terms of programme spending, delivery instruments and eligibility criteria. The case of family transfers in Sweden would be one that merits further investigation.

Following from the acknowledgment that income and material deprivation proxies each have their limitations (as discussed in the introduction), it is generally argued that these proxies provide complementary information. Therefore this paper also investigates whether the joint use of these proxies would change the performance assessment. The approach taken is to compare the performance indicators between households who are least well-off according to both indicators with the two groups of households least well-off according to only one indicator. Table 3 showed that 10-11 percent of the household population is ranked in the first income quintile as well as in the first material deprivation quintile; about 9 percent of the households are ranked in the first income quintile only while a similar percentage is ranked in the first material deprivation quintile only. It was also shown that households that are in both first quintiles have on average the highest number of deprivations and the lowest income. The idea behind this is that by (also) focusing the performance assessment on this group of 'consistent' poor[16], one is evaluating whether the transfer is successful in reaching that part of the population for which one can be more confident that it actually belongs to the target group.

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[16] The concept 'consistent poor' has been introduced and studied by Brian Nolan and Christopher Whelan in several publications (starting with 1996).

Table 8: Summary of comparison performance indicators between overlap groups (Number of times Wald test reported a P-value < 0.01)

	By performance indicator[1]	Cases with P-value < 0.01	Out of
By country			
DE			
P-value ($Q1_{y\,md} = Q1_y$)	4+2+5	11	15
P-value ($Q1_{y\,md} = Q1_{md}$)	4+5+5	14	15
FR			
P-value ($Q1_{y\,md} = Q1_y$)	4+4+5	13	15
P-value ($Q1_{y\,md} = Q1_{md}$)	5+5+5	15	15
IE			
P-value ($Q1_{y\,md} = Q1_y$)	2+4+4	10	15
P-value ($Q1_{y\,md} = Q1_{md}$)	4+4+5	13	15
NL			
P-value ($Q1_{y\,md} = Q1_y$)	4+4+3	11	15
P-value ($Q1_{y\,md} = Q1_{md}$)	4+5+5	14	15
SE			
P-value ($Q1_{y\,md} = Q1_y$)	4+3+3	10	15
P-value ($Q1_{y\,md} = Q1_{md}$)	4+5+5	14	15
UK			
P-value ($Q1_{y\,md} = Q1_y$)	4+3+5	12	15
P-value ($Q1_{y\,md} = Q1_{md}$)	4+5+5	14	15
Total			
P-value ($Q1_{y\,md} = Q1_y$)	22+20+25	67	90
P-value ($Q1_{y\,md} = Q1_{md}$)	25+29+30	84	90
By transfer category			
Total transfers			
P-value ($Q1_{y\,md} = Q1_y$)	6+6+6	18	18
P-value ($Q1_{y\,md} = Q1_{md}$)	6+6+6	18	18
Housing & social exclusion			
P-value ($Q1_{y\,md} = Q1_y$)	5+6+6	17	18
P-value ($Q1_{y\,md} = Q1_{md}$)	6+6+6	18	18
Social exclusion			
P-value ($Q1_{y\,md} = Q1_y$)	6+2+5	13	18
P-value ($Q1_{y\,md} = Q1_{md}$)	6+5+6	17	18
Housing			
P-value ($Q1_{y\,md} = Q1_y$)	5+3+4	12	18
P-value ($Q1_{y\,md} = Q1_{md}$)	6+6+6	18	18
Family[2]			
P-value ($Q1_{y\,md} = Q1_y$)	0+3+4	7	18
P-value ($Q1_{y\,md} = Q1_{md}$)	1+6+6	13	18
Total			
P-value ($Q1_{y\,md} = Q1_y$)	22+20+25	67	90
P-value ($Q1_{y\,md} = Q1_{md}$)	25+29+30	84	90

Notes:
[1] Comparing performance indicators of households in both 1st quintiles ($Q1_{y\,md}$) with those that are only in 1st income quintile ($Q1_y$), and with those that are only in the 1st material deprivation quintile ($Q1_{md}$)
[2] Ordered as: coverage rate, average transfer amount, average income share of transfer
[3] Only including households with children under age 18

The results are summarized in Table 8 while tables 4.4 to 4.6 in appendix 4 report the results in more detail. In 67 cases (out of 90) the performance indicators for the consistent poor differ statistically significant from that of the group that is only in the first income quintile. In comparison to households that are only in the first material deprivation quintile, differences are significant in 84 out of 90 cases. The consistent poor are much more likely to receive transfers than the other two groups. The differences in coverage rates are not only significant in a statistical sense but they are that large that they are also significant in a policy sense. Moreover, the consistent poor typically receive higher transfers than the other two groups and the transfer itself also represents a larger share of the household's disposable income. Transfers thus appear much more successful if the assessment is based on a combination of well-being indicators.

Only for family allowances this is not a consistent pattern. This is to be expected for the coverage rates as every country has at least one universal transfer programme in the family allowance variable.[17] In terms of generosity of transfers, only in Ireland do consistent poor families receive higher transfers. In the other countries, these households receive similar benefit amounts as the households in the lowest income quintile only (Germany, France, Netherlands and the UK) or the households in the lowest income quintile are receiving higher amounts (Sweden).[18] Across the board, it appears that the consistent poor families get the same treatment as the low income families. A potential point of concern is the fact that households that are only in the first material deprivation quintile receive a far less generous treatment.

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[17] Only for France the coverage rates of family transfers differ between groups. This is likely due to the fact that the universal transfer program in France only kicks in when a family has a second child while the other transfer programs have at least an income-test.
[18] For Sweden and the Netherlands these findings may be related to the fact that the income tested tax credits are not included in the family transfer variable.

5. Concluding discussion

This research investigated whether the choice of welfare indicator influences the pro-poorness assessment of an intervention. The motivations underlying this work are, firstly, the consistent finding that there is a lack of overlap between monetary and non-monetary poverty measures and, secondly, the current practice of using a monetary indicator (income) as a performance indicator for assessing the pro-poorness of programmes. The implication of the first aspect is that welfare indicators frequently 'disagree' about whether a programme's participant belongs to the target group or not. The second aspect further implies that the dominant use of income as a criterion could systematically over or underestimate the judgement of a programme's success.

To investigate whether there is reason for concern, this study has taken a comparative approach involving six EU member states, three categories of income transfers and three performance indicators. The aim behind this selection of countries has been to exploit a natural variation in programme interventions while controlling for differences in living standard and data collection. As welfare indicators we used the official wellbeing proxies of the EU, namely income and material deprivation. This study focused on family, housing and social exclusion allowances because these transfer categories included programmes aimed at assisting the least well off. Section 3 shows that the [lack of] overlap between the income and material deprivation distributions[19] is extremely similar across countries while the programme information shows a large variation in the coverage, generosity and design of transfer programmes. These findings confirm the appropriateness of case selection.

Comparing the success between the 20 per cent poorest households in terms of income and those in terms of material deprivation, this study finds that the performance indicators yield similar conclusions in about two thirds of the cases. For the remainder of cases, the coverage rate attributes more success when using material deprivation while the other two indicators attribute more success when using income. While statistically significant, most of the performance differences do not seem large enough to warrant adjustments in terms of programme spending, delivery instruments and eligibility criteria. However, when combining the income and material deprivation indicators, the performance assessment is significantly different: with very few exceptions, transfers are much more successful in reaching households that are among the least well-off according to both indicators.

Why is that transfers appear much more successful when the information from two noisy indicators is combined? As discussed in the introduction, key limitations of the income indicator are firstly that they do not take alternative resources into account (financial or otherwise) and, secondly, that they do not inform about the specific needs of households and the costs associated with them (such as chronic illness or a disability). As discussed in section three, key limitations of the material deprivation indicators are that for reasons of shame and (changes in) aspirations the less well off may not report that they miss a deprivation item due to financial constraints while better off households may be more inclined to report the reverse while the reason for not

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[19] Using the pre-transfer distributions and focusing on the overlap between the first quintiles of the material deprivation and income distributions.

having the item may be more related to spending priorities rather than insufficient resources. Thus part of the noise in each indicator is due to false negatives while another part is due to false positives. By combining the information from these indicators and imposing a stricter criterion, one reduces the noise caused by false positives i.e. households having (enough) alternative resources and of households whose deprivation levels are (in part) the result of choice rather than a lack of resources. Also, as income support programmes often use a combination of income and asset tests and / or have special provisions for households meeting other needs-based criteria, the stricter information criterion may better mimic the criteria according to which eligibility is determined in such programmes. However, this is not to say that the group of 'consistent poor' should be seen as the 'true poor' or 'sole deserving'. Combing information on income and material deprivation does, for instance, not tell us much about special needs that a household may have. Furthermore, even if poverty reduction is the primary aim, there are additional reasons favoring a wider target group (as discussed in section 2).

Concluding, this study has shown is that when survey data are used to assess the pro-poorness of income transfers, the dominant practice of using an income indicator is systematically underestimating the performance of such programmes. While not investigated in this paper, the differences are that substantial that they are likely to also influence cost effectiveness assessments. It would therefore be adviseable that other available information regarding households alternative resources, needs or living standard outcomes would be used. Material deprivation indicators appears to be a relatively simple and low cost way of doing so.[20]

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[20] This research does not suggest that it would be recommendable to use material deprivation as information on the basis of which to determine program eligibility. These indicators are not suitable because they can easily be manipulated by prospective beneficiaries.

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Appendix 1: Comparison of income and material deprivation variables

Table 1.1: Cross-national comparability of variables used to construct income and material deprivation proxies

	DE	FR	IE	NL	SE	UK
Source income data [1]	Self-administered questionnaire	Interview	Interview and register	Register	Register	Interview
Reference period income data [1]	2006	2006	12 months prior to interview	2006	2006	12 months prior to interview
Collected income data at component level in gross or net amounts[1]	Gross	Net of social contributions but gross of taxes	Gross and net	Gross	Gross	Gross and net
Comparability of income variables[2]:						
- Disposable household income	Fully	Fully	Fully	Largely	Fully	Largely
- All income transfers (except pensions)	Fully	Fully	Fully	Largely	Fully	Fully
- Family / children related allowances	Fully	Fully	Fully	Largely	Fully	Fully
- Social exclusion payments (not elsewhere reported)	Fully	Fully	Fully	Fully	Fully	Fully
- Housing allowances	Fully	Fully	Fully	Fully	Fully	Fully
- Unemployment benefits	Largely	Fully	Fully	Largely	Fully	Fully
- Sickness benefits	Fully	Fully	Fully	Fully	Fully	Fully
- Disability benefits	Fully	Fully	Fully	Fully	Fully	Fully
Reference period deprivation data[3]	Past 12 months (arrears) or currently	Past 12 months (arrears) or currently	Past 12 months (arrears) or currently	Past 12 months (arrears) or currently	Past 12 months (arrears) or currently	Past 12 months (arrears) or currently
Comparability deprivation variables [3]	Yes	Yes	Yes	Yes	Yes	Yes

Sources: [1] European Commission, 2007 Comparative final quality report, version 2, June 2010. [2] European Commission, 2005 Comparative final quality report, version 2, June 2008. [3] By means of comparison of relevant questions in questionnaires of each country.

Appendix 2: Estimation pre-transfer material deprivation distribution

To assess whether transfers are reaching and assisting poor households, one requires knowing how well-off the household would have been without the transfer (family, housing and social exclusion allowances). If income is the welfare indicator, the pre-transfer amount is simply obtained by subtracting the transfer amount from disposable income. However, for the material deprivation indicator some extra efforts are required to assess the effect of the transfer on the capacity of households to afford the deprivation items. Using a multivariate regression method, we first estimate the income elasticity on the number of deprivations using disposable income (per equivalent adult, in logarithms); then we fit the model to each household to estimate the number of deprivations using pre-transfer and post-transfer income; subsequently we add this estimate of the *change* in deprivations to the actual (post-transfer) number of deprivations reported by the household. [21] [22] [23]

Because the dependent variable is a count variable (i.e. the *number* of items that the household lacks) its distribution is more akin to a Poisson type of distribution rather than a normal distribution. This implies that a standard regression technique such as Ordinary Least Squares (OLS) is not appropriate. Instead we estimate a negative binomial regression model because the dependent variable only has non-negative values and is overdispersed (i.e. the variance that is larger than the mean). This choice is supported by a likelihood-ratio test which tests whether the variance is equal to the mean (LR test of Alpha); as shown by the p-values in Table A2 this hypothesis is rejected implying that there is overdispersion in the data. The regressions are run for each country separately.

In addition to disposable income (adult equivalent, in natural logarithm) we include a range of control variables describing characteristics of the household and the respondent to the household questionnaire. Included are[24]:

- the demographic composition of the household (number of children, adults and elderly as well as a range of dummies specifying the household type)
- its (lack of) financial assets (two dummy variables indicating whether the household finds that its debt is somewhat or a heavy financial burden)
- ownership dwelling (a dummy for whether the household is renting their home)
- the respondent's education level (highest level attained)

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[21] Using the non-linear prediction syntax "nlpredict" in Stata 11. More information can be found in the do-files and log-files which are available upon request by the author.

[22] We prefer to use the actual distribution plus the simulated income effect (i.e. the change in number of deprivations between pre- and post-transfer income) because the simulated income effect is the best available (but not perfect) estimate of the impact of transfers.

[23] We further adjust the pre-transfer deprivation count such that the values fall within the feasible range of 0-9 deprivations as some household's estimated rank changes would be larger than what is actually feasible given that we only observe 9 deprivation items.

[24] There were a number of other variables which we would have liked to include but they were either not available (such as home food production, access to services, food banks) or had many missing observations (such as the household level work intensity variable for Germany, payment of wealth taxes).

- the respondent's citizenship (local, EU and Other)
- the respondent's self-reported economic status (working, unemployed, studying, retired, permanently disabled, fulfilling domestic tasks)

The regression results are summarized in Table A2. Due to the logarithmic transformation of the income variable its parameter can (by approximation) be interpreted as the percentage change. For instance, a 1 per cent increase in income decreases the number of deprivations by 0.57 per cent in Germany. The other parameters have the expected signs and most of them are statistically significant at a 5 per cent level or better.

These estimates are subsequently used to estimate the change in deprivations due to transfer income. Taking for example a German household experiencing 2 deprivations with an annual pre-transfer income of € 10,000 and receiving € 1,000 in transfers the predicted *change* in deprivations is: 2-[2*exp(-0.573*(ln(11,000)-ln(10,000)))]=2-1.89=0.11 deprivations. Thus, without the transfer we would expect this household to have 2.11 deprivations. While one would never observe a non-integer value for the number of deprivations, a convenient side effect of non-integer values is that the pre-transfer material deprivation distribution becomes less discrete which in turn facilitates the division of the population in quintiles.[25]

Table 2.1: Negative binomial regression

Dependent variable: number of deprivation items that a household cannot afford (0-9 items)						
	DE	FR	IE	NL	SE	UK
Disposable income (per equivalent adult, in logarithms)	0.573***	0.422***	0.674***	0.486***	0.537***	0.629***
Debt is heavy burden (1/0)	2.165***	2.104***	1.902***	2.625***	3.892***	2.585***
Debt is somewhat a burden (1/0)	1.377***	1.524***	1.306***	1.911***	2.254***	1.445***
Number of children below age 18	1.104**	0.974	1.054	1.079	1.123*	1.002
Number of adults	1.013	0.923	0.912	1.069	1.084	0.888*
Number of elderly (age 65 and above)	0.919	0.865	0.777*	0.571***	0.86	0.569***
Tenure status						
- Owned	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
- Rented	1.760***	1.833***	2.202***	2.409***	1.826***	2.753***
Household type						
- One person household	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
- 2 adults, no dependent children, both adults under 65 years	0.733***	0.704***	1.062	0.487***	0.509***	0.778**
- 2 adults, no dependent children, at least one adult 65 years or more	0.640***	0.783*	1.023	1.063	0.372***	1.124
- Other households without dependent children	0.899	0.882	1.091	0.621	0.531**	1.003

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[25] Consequently, for households that do not report receiving any transfers (family, housing or social exclusion allowances) the number of deprivations stays the same (an integer value). Thus while the static simulation transforms the material deprivation distribution from a 10 value discrete distribution into a more continuous distribution there are still high frequency integer values. In a number of cases these values are distributed around the threshold value of the quintile. To obtain quintiles, we *additionally* sorted households firstly by using the variable "ability to make ends meet" (taking values 1 - very difficult - to 6 - very easy -) and secondly, using pre-transfer income.

- Single parent household, one or more dependent children	1.061	1.013	1.356*	1.063	0.897	1.280**
- 2 adults, one dependent child	0.732***	0.817*	0.911	0.624*	0.562***	0.898
- 2 adults, two dependent children	0.615***	0.713**	0.929	0.454***	0.452***	0.869
- 2 adults, three or more dependent children	0.662*	0.859	0.939	0.392**	0.487**	1.035
- Other households with dependent children	0.740*	0.975	1.168	0.583	0.404***	1.319
- Other	1.299	0.796	na	0.000***	1.354	1.196
Highest education level attained						
- Pre-primary education	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
- Primary education	na	0.914	na	1.426	na	na
- Lower secondary	0.907	0.900	0.764***	1.112	0.725**	na
- Upper secondary	0.761***	0.759**	0.609***	0.981	0.803*	0.817***
- Post secondary (non-tertiary)	0.607***	0.000***	0.617***	1.006	0.744*	0.951
- First or second stage tertiary	0.531***	0.524***	0.409***	0.629	0.561***	0.566***
Country of citizenship						
- Local	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
- EU	na	0.996	1.123	1.334	0.995	1.101
- Other	1.184*	1.419***	1.032	4.608***	1.349*	1.413***
Self-defined economic status						
- Working full-time	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)	(dropped)
- Working part-time	1.240***	1.281***	1.286**	1.196*	1.649***	1.370***
- Unemployed	1.957***	1.545***	1.695***	1.974***	2.330***	1.803***
- Pupil, student or otherwise in training	1.312***	1.073	2.141***	1.243	1.832***	1.1
- Retired	1.046	0.905	1.066	1.117	1.573***	1.257**
- Permanently disabled / unfit for work	1.770***	1.393***	1.834***	2.126***	2.865***	1.924***
- In compulsory military / community service	1.31	1.160*	1.354***	1.443***	1.619*	1.525***
- Fulfilling domestic tasks and care responsibilities	1.129*	1.323*	3.272***	1.442**	1.720**	1.002
- Other inactive person	1.528***	1.281***	1.286**	1.196*	1.971***	1.370***
Number of households	14015	9973	5522	10010	6734	8679
LR test of Alpha – P-value	0	0	0	0	0	0
LR Chi 2 – P-value	0	0	0	0	0	0
Pseudo R-Squared	0.1457	0.1386	0.1853	0.1857	0.1681	0.1752

Notes: * p<0.05, ** p<0.01, *** p<0.001; not available (na); estimated in Stata 11 using nbreg command.
Source: EU-SILC (2007)

Appendix 3: Characteristics of household level transfers

Table 3.1: Summary family allowances: type of programmes

	DE	FR	IE	NL	SE	UK
Universal programmes	y	y	y	y	y	y
Income-tested programmes	y	y	y	y	n	y
Means-tested programmes	n	y	y	n	n	n
Child care programmes for very young or sick children	y (stay at home parents)	y (sick children)	y (working parents)	n	y	n
Maternity related programmes (contributions related or not)	n	n	n	n	y	y

Notes: shaded cells indicate that transfer is not included in respective EU-SILC transfer variable (HY050G/N).

Table 3.2: Family allowances - if included in HY050G/N printed in bold (monthly amounts)

	DE	FR	IE	NL	SE	UK
Universal programmes	**Kindergeld[1]** 184 € (1st & 2nd child) 190 € (3rd child) 215 € (4th and more)	**Prestation d'acceuil du jeune enfant (PAJE)[3]** 374-611 €, supplement for reduced work (CLCA?) X?, supplement for child care (CMG?) **Allocation familiale[3]** 124 € 2 children 283 € 3 children 441 € 4 children 159 € per subsequent child Supplements for children above age 11	**Child benefit[5]** 166 € per child **Early child care supplement (≤2009)[5]** 83 € per child	**Kinderbijslag[6]** Amount varies age of child and by number of children 65-128 € per child	**Barnbidrag[7]** Amount varies by number of children 114-227 € per child	**Child benefit** [8] 94 € 1st child 62 € ≥ 2nd child

		Allocation journalière de présence parentale[3] max. 902-1078 € **Allocation de Soutien Familial (ASF)**[4] € 85 per child				
Means-tested (MT) / income tested (IT)	**Kinderzuschlag (MT)**[1] max. 140 € per child **Erziehungsgeld (IT) (≤ 2007)**[2] €300 for 24 months / €450 for 12 months	**Prestation d'acceuil du jeune enfant (PAJE) (IT)**[3] 890 € birth grant, lump sum 178 € base allowance **Allocation familiale (IT)**[3][4] 161 €, for 3 or more children **Allocation de rentrée scolaire (ARS)**[3] 281-307 €, depending on age **Allocation de parent isolé (API) (MT)**[4] 187 € per child	**Qualified child increase**[5] 26 € per child **Family income supplement (IT)**[5] 60% between net earnings and net maximum earnings **Back to school clothing and footwear allowance (MT)**[5] 200-305 € annually, depending on age **One parent family payment (IT)**[5] max. 1600 € Single parent family relief €1,760 tax credit Home carers allowance Up to 770 tax credit	Kinderkorting/kindert oeslag / **kindgebonden budget** (IT)[6] 77-152 € depending on programme and number of children Alleenstaande ouderkorting (IT)[6] 79 € Aanvullende alleenstaande ouderkorting (IT)[6] 4.3% of earned income with max. of 126 € Combinatiekorting / aanvullende combinatiekorting (IT) / inkomensafhankelijke combinatiekorting (IT) [6] Tax allowance for supporting a child	No child related tax credits	**Child tax credit (IT)** [8] Basic family element: 53 € ≥1 child Baby addition: 53 € per child Child element: 222 € per child Disability element: 262 € per child Severe disability element: 106 € per child **Maternity grants (IT)** [8] 516 € birth grant

				under age 30 25-89 € depending on age child and expenses Kinderopvangtoeslag (IT) Covering 95-50% of child care costs.		
Contributions based	**Elterngeld (≥ 2007)[2]** min. 300 € – max. 1800 €, depending on income				Föräldraledighet & temporary parents cash benefit min. 409 € – max. 1,480 €, depending on contributions record	**Statutory maternity / paternity / adoption pay** [8] Up to 90% of gross earnings, up to 39 weeks, employment & earnings history
Other programmes	Ehegattensplitting[1], Entlastungsbetrag für Alleinerziehende[1], contributions for mothers to old age insurance system, other minor transfers, maternity allowance		Early childhood care and education scheme (≥2010)[5]	Bevallingsuitkering[6] 100%, up to 16 weeks		**Maternity allowance** [8] Max. € 579, up to 39 weeks, , employment & earnings history Guardians allowance, Child maintenance bonus, Lone parent's benefit run-on, Carer's allowance

Sources Germany:
[1] Tarki 2010, Kindergeld (age 0-17) becomes tax allowance after certain income level resulting in higher benefit levels (own research: this is likely what is called Kinderfreibetrag & Betreuungsfreibetrag which applies for households with an annual income as of 60,000 €); Kinderzuschlag (age 0-17) is part of means-tested unemployment benefit and social assistance and is targeted at households that fall below the needs threshold for means-tested unemployment benefits. (Arbeitslosengeld II); Ehegattensplitting are tax advantages for married couples; Entlastungsbetrag für Alleinerziehende is a tax exemption for single parents.
[2] Own research: Elterngeld is for parents who stop working or reduce their work hours because of the birth of a child (up to 14 months), does not apply to parents earning annually more than € 500,000; Erziehungsgeld is a means-tested supplementary allowance for women who stayed home to look after a newborn (up to 24 months).

Sources France:

[3] Own research: Allocation familiale (age 0-20); Prestation d'acceuil du jeune enfant (IT, age 0-3), IT is quite generous up to € 33,700-59,400 (varying by number of children & single parent); Allocation journalière de présence parentale is a care allowance for parents with a sick child (up to 12 months); the income-test threshold for the Allocation de rentrée scolaire varies from €27,500-32,600 depending on number of children.

[4] Tarki 2010: Allocation familiale (IT) is a supplementary allowance for families with 3 or more children; Allocation de Parent Isolé (API) is MT for income below € 748 per month.

Sources Ireland: Child benefit and qualified child increase (age 0-17, higher if child in education); Early child care supplement (age 0-5).

[5] Tarki 2010 & own research: Early childhood care and education scheme provides one free pre-school year of early child care for all children between ages 3-4; to qualify for FIS one of parents must be engaged in insurable employment (max. net earnings for a one child family are €24,960 annually).

Sources Netherlands:

[6] Own research: Kinderbijslag (age 0-17, for children born after1 Jan 1995 only age is a benefit determinant); Kinderkorting (≤2007)/ kindertoeslag (2008)/ kindgebonden budget (≥2009) are all income-tested tax benefits (paid monthly & nearly automatic) with full benefits until €28,897 after which a 6.5 per cent claw back applies; Bevallingsuitkering is for unemployed and self-employed women (16 weeks at 100 per cent pay with max. of €190 a workday); As of 2011, Alleenstaande ouderkorting & Aanvullende alleenstaande ouderkorting (IT) are combined; Combinatiekorting & aanvullende combinatiekorting have been replaced by the inkomensafhankelijke combinatiekorting in 2009, the changes also included changes in design (requiring minimum earnings of €4,734 & increase in max. tax credits from 9 to 160 € monthly.

Sources Sweden:

[7] Own research: Barnbidrag (age 0-16 or 20 if full-time student); Föräldraledighet and temporary parents cash benefit (the parental cash benefit is contributions-based but also has a basic amount for parents with low or no income; is part of sickness insurance and thus more likely to be found under sickness benefits).

Sources UK:

[8] Own research: 1£ is €1.16 (31-12-2010), Child benefit (age 0-15 or 19 if in non-advanced education); Child tax credit is IT using several thresholds with different claw back rates (> € 18,780, 39 per cent; > € 58,000, 6.7 per cent); Maternity allowance is for women who have a work history but do not get statutory maternity pay through their employer; the Maternity Grant is a social fund grant.

Table 3.3: Summary social exclusion allowances: type of programmes

	DE	FR	IE	NL	SE	UK
Income-tested programmes	n	y	n	y	y	y
Means-tested programmes	y	n	y	y	y	y

Notes: shaded cells indicate that transfer is not included in respective EU-SILC transfer variable (HY060G/N).

Table 3.4: Social exclusion allowances - if included in HY060G/N printed in bold (monthly amounts)

	DE	FR	IE	NL	SE	UK
Means-tested (MT) / income tested (IT)	**Arbeitslosengeld II & Sozialgeld (MT)**[1] 364 € for 1st adult, 328 € for 2nd adult, 215-291 € for each child (age dependent)	**Insertion minimum income (IT)**[2] €447.91 single person €671.87 two-member household €806.24 three-member household €940.61 couple with two children a supplement of €179.16 is paid for each additional child in a family ≥ 2 children. Unemployment assistance (IT)[2] Amounts not clear, as previous?	**Supplementary Welfare Allowance (MT)**[3] €742 single €1236 two adults €1324 two adults and one child	**Bijstandsuitkering (MT)**[4] €1319.85, couple €923.90, single parent €659.93, single adult Zorgtoeslag (IT) max. €146 for couple with 2 young children	**Försörjningsstöd (MT)**[5] €516, couple €440 and up, single parent €285, single adult Earned income tax credit (IT) max. €99 for a person with average municipal tax rate	**Working tax credit (IT)**[6] Basic element: €186 Couples element: €183 Lone parent element: €183 30 hour element: € 76 Disability element: € 248 Severe disability element: € 106 Child care costs (max.): € 812 1 child € 1,382 ≥ 2 children **Income Support (MT)**[6] Single person: € 304 Lone parents: € 304 Couples: € 477 **Community**

					Care Grant (IT) Discretionary
Other programmes					**Social fund grants, Other benefit, Grant for funeral expenses**

Sources Germany:
[1] Own research: Arbeitslosengeld II is a means-tested allowance covering persons who are capable of work, not eligible anymore for the contributions-based unemployment benefit and who are unable to cover their basic needs; Sozialgeld is the allowance for their dependents and also covers the cost of reasonable accommodation and heat, as well as any additional special needs for the household. Qualifiable with income up to 1,200 € (1,500 € if children) and low assets (complex threshold).

Sources France:
[2] Own research: Insertion minimum income: The benefit is reduced by the value of any income. If the beneficiary receives the housing allowance (see Family Allowances) or other housing assistance benefits, the insertion minimum income is reduced to a fixed lump sum.

Sources Ireland:
[3] Own research: SWA is subject to income (max. SWA allowance) and asset tests (value of home not included, very lenient i.e. only €1 per €1,000 [between €5,000-15,000] is taken into account).

Sources Netherlands:
Own research: Bijstandsuitkering supplements up to minimum wage including income (minimum wage) and asset (max. € 5,555 (single) – 11,110 (couple)) tests; Zorgtoeslag compensates for out of pocket expenditures in health insurance premiums and has income thresholds for single parents (< €36,022) for couples (< €54,264).

Sources Sweden:
[5] Own research: Försörjningsstöd varies with number of household members and age of child; the earned income tax credit was only introduced in 2007 and is thus not included in the EU-SILC income reference year for wave 2007.

Sources UK:
[6] Own research: the working tax credit is income tested and two thresholds with claw back rates apply (> € 7,447, 39 per cent; > € 58,000, 6.7 per cent); the Community Care Grants is a social fund grant; Income Support is to help people on low incomes who do not have to be available for employment and have income <€ 7,447 and savings < € 6,960 (also includes clawback for people having savings up to € 18,560).

Table 3.5: Summary housing allowances: type of programmes

	DE	FR	IE	NL	SE	UK
Income-tested programmes	y	y	n	n	y	n
Means-tested programmes	n	n	y	y	n	y

Table 3.6: Housing allowances - if included in HY070G/N printed in bold (monthly amounts)

	DE	FR	IE	NL	SE	UK
Means-tested (MT) / income tested (IT)	**Wohngeld (IT)** Average monthly amount: € 91	**Family housing benefit (ALF)** **Aide personnalisée au logement (APL)** **Social housing subsidy (ALS)** Average monthly amount: € 190 (ALF, APL & ALS combined)	**Rent and mortgage supplements (MT)** Max. amounts: Single person: €520 Couple: €800 Couple with 2 children: €1,200	**Huurtoeslag (MT)** i.e. max. €266 for couple with 2 young children with annual income of €17,000	**Bostadsbidrag (IT)** i.e. max. €1,151 (before income test)	**Housing benefit (MT)** max. € 348 **Council tax benefit (MT)** max. € 28

Source Germany: Own research: Wohngeld is for anyone with low income or high rent except for recipients of unemployment assistance.

Source France: Tarki 2010: ALF is for married couples (first 5 years) and families with dependent children; APL is for those renting registered accommodation and new homeowners who have been allocated subsidized loans; ALS is payable to anyone irrespective of age or employment; typically the allowance is a variable monthly amount is paid depending on rent level, income, and the number of children

Source Ireland: Own research: Rent and mortgage supplements: same income and asset tests as for Supplementary Welfare Allowance.

Source Netherlands: Own research: Huurtoeslag, the amount depends on composition household, rent amount, income (max. €29,125) and assets (€20,661).

Source Sweden: Own research: Bostadsbidrag depends on household composition, rent amount and income (max. €12,647 (lone parents) or €6,324 (family with 1 or more child); for social assistance recipients the rent may be fully covered.

Source UK: Own research: Housing benefit applies the same asset test as Income Support but the income threshold is higher with € 21,474; for the Council tax benefit, which is a tax rebate, the same MT criteria apply as for the housing benefit.

Appendix 4: Comparison performance indicators

Table 4.1: Coverage at lowest quintile (%)

	All transfers	Housing & Social exclusion	Social exclusion	Housing	Family [1]
DE					
1st quintile income	51.6	30.1	20.6	11.1	98.4
1st quintile material deprivation	65.9	31.5	22.9	10.2	98.7
P-value [2]	0.000	0.153	0.009	0.164	0.662
FR					
1st quintile income	76.3	69.1	19.6	64.8	95.7
1st quintile material deprivation	82.5	74.0	18.7	70.8	92.3
P-value	0.000	0.000	0.455	0.000	0.036
IE					
1st quintile income	88.7	58.1	12.7	53.0	99.8
1st quintile material deprivation	92.2	54.4	13.4	48.9	99.8
P-value	0.002	0.179	0.616	0.130	0.999
NL					
1st quintile income	68.6	58.9	38.1	45.9	96.8
1st quintile material deprivation	73.4	64.3	37.4	51.9	95.9
P-value	0.003	0.001	0.722	0.002	0.556
SE					
1st quintile income	56.4	36.1	12.0	32.4	84.1
1st quintile material deprivation	62.3	37.7	12.7	33.4	84.7
P-value	0.000	0.316	0.498	0.517	0.747
UK					
1st quintile income	65.6	57.8	37.6	46.0	97.8
1st quintile material deprivation	72.8	59.0	37.7	48.1	96.2
P-value	0.000	0.395	0.980	0.134	0.104

Notes:
[1] Only including households with children under age 18
[2] This is the P-value from the adjusted Wald test testing the equivalence of the mean coverage rate. The standard errors take survey design into account. The variables accounting for survey design have been programmemed using the coding developed by Tim Goedeme (2011).
Source: EU-SILC (2007)

Table 4.2: Average transfer amounts received by lowest quintile (%)

	All transfers	Housing & Social exclusion	Social exclusion	Housing	Family [1]
DE					
1st quintile income	5,096	4,562	5,994	1,238	4,363
1st quintile materially deprivation	4,623	4,670	5,894	1,171	4,123
P-value [2]	0.001	0.673	0.761	0.412	0.030
FR					
1st quintile income	5,802	3,702	3,662	2,839	4,940
1st quintile materially deprivation	4,880	3,346	3,608	2,541	4,387
P-value	0.000	0.000	0.749	0.000	0.003
IE					
1st quintile income	9,066	2,090	758	2,110	12,348
1st quintile materially deprivation	8,810	2,262	649	2,339	12,306
P-value	0.545	0.307	0.200	0.204	0.932
NL					
1st quintile income	7,317	7,608	9,491	1,885	2,102
1st quintile materially deprivation	6,713	6,975	9,391	1,879	1,810
P-value	0.058	0.065	0.763	0.895	0.000
SE					
1st quintile income	6,543	3,986	5,218	2,517	7,445
1st quintile materially deprivation	4,795	3,594	4,745	2,258	5,082
P-value	0.000	0.026	0.184	0.005	0.000
UK					
1st quintile income	10,603	8,273	6,031	5,456	6,031
1st quintile materially deprivation	9,632	8,156	5,925	5,356	5,624
P-value	0.001	0.639	0.555	0.637	0.084

Notes:

[1] Only including households with children under age 18

[2] This is the P-value from the adjusted Wald test testing the equivalence of the mean transfer amount. The standard errors take survey design into account. The variables accounting for survey design have been programmemed using the coding developed by Tim Goedeme (2011).

Source: EU-SILC (2007)

Table 4.3: Average income share of benefit at lowest quintile

	All transfers	Housing & Social exclusion	Social exclusion	Housing	Family [1]
DE					
1st quintile income	0.349	0.328	0.424	0.102	0.263
1st quintile material deprivation	0.274	0.316	0.391	0.097	0.226
P-value [2]	0.000	0.249	0.006	0.425	0.000
FR					
1st quintile income	0.399	0.321	0.400	0.222	0.226
1st quintile material deprivation	0.335	0.282	0.395	0.190	0.198
P-value	0.006	0.130	0.959	0.000	0.001
IE					
1st quintile income	0.419	0.118	0.043	0.119	0.513
1st quintile material deprivation	0.363	0.108	0.034	0.111	0.474
P-value	0.010	0.138	0.160	0.240	0.063
NL					
1st quintile income	0.506	0.542	0.675	0.135	0.103
1st quintile material deprivation	0.465	0.497	0.675	0.130	0.083
P-value	0.108	0.103	0.997	0.125	0.000
SE					
1st quintile income	0.331	0.278	0.356	0.178	0.294
1st quintile material deprivation	0.244	0.241	0.321	0.150	0.204
P-value	0.000	0.005	0.215	0.001	0.000
UK					
1st quintile income	0.598	0.489	0.329	0.345	0.327
1st quintile material deprivation	0.510	0.457	0.311	0.317	0.289
P-value	0.000	0.004	0.086	0.001	0.010

Notes:
[1] Only including households with children under age 18
[2] This is the P-value from the adjusted Wald test testing the equivalence of the mean coverage rate. The standard errors take survey design into account. The variables accounting for survey design have been programmemed using the coding developed by Tim Goedeme (2011).
Source: EU-SILC (2007)

Table 4.4: Coverage by overlap groups (%, in both 1st quintiles ($Q1_{y\,md}$), only in 1st income quintile ($Q1_y$), only in 1st material deprivation quintile ($Q1_{md}$))

	All transfers	Housing & Social exclusion	Social exclusion	Housing	Family [1]
DE					
$Q1_{y\,md}$	69.6	45.8	33.3	15.2	98.7
$Q1_y$	29.2	10.5	4.8	5.9	97.9
$Q1_{md}$	61.3	13.6	10.0	3.9	98.6
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.000	0.524
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.936
FR					
$Q1_{y\,md}$	93.2	88.7	29.9	83.8	97.9
$Q1_y$	54.0	43.2	5.9	39.8	91.5
$Q1_{md}$	68.4	54.5	4.0	53.8	81.4
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.000	0.014
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.000
IE					
$Q1_{y\,md}$	94.8	60.5	16.8	53.2	99.8
$Q1_y$	81.0	55.1	7.3	52.8	100.0
$Q1_{md}$	89.0	46.8	9.1	43.5	100.0
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.108	0.000	0.900	.
P-value ($Q1_{y\,md} = Q1_{md}$)	0.006	0.000	0.000	0.007	.
NL					
$Q1_{y\,md}$	86.5	81.1	56.6	65.3	96.3
$Q1_y$	42.1	26.1	10.7	17.2	97.6
$Q1_{md}$	53.9	39.5	8.9	32.2	95.4
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.000	0.424
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.621
SE					
$Q1_{y\,md}$	74.2	59.5	21.4	53.7	85.7
$Q1_y$	39.7	14.3	3.1	12.5	82.3
$Q1_{md}$	51.2	17.3	4.5	14.4	83.5
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.000	0.278
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.422
UK					
$Q1_{y\,md}$	89.5	83.9	58.4	71.5	98.2
$Q1_y$	37.9	27.3	13.5	16.4	96.6
$Q1_{md}$	53.4	29.9	13.5	20.9	90.6
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.000	0.318
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.016

Notes:
[1] Only including households with children under age 18
[2] This is the P-value from the adjusted Wald test testing the equivalence of the mean coverage rate. The standard errors take survey design into account. The variables accounting for survey design have been programmemed using the coding developed by Tim Goedeme (2011).
Source: EU-SILC (2007)

Table 4.5: Transfer amounts by overlap groups (%, in both 1st quintiles ($Q1_{y\,md}$), only in 1st income quintile ($Q1_y$), only in 1st material deprivation quintile ($Q1_{md}$))

	All transfers	Housing & Social exclusion	Social exclusion	Housing	Family [1]
DE					
$Q1_{y\,md}$	5,390	4,888	6,150	1,262	4,283
$Q1_y$	4,222	2,783	4,643	1,163	4,515
$Q1_{md}$	3,537	3,755	4,830	732	3,821
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.015	0.405	0.260
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.001	0.001	0.000	0.004
FR					
$Q1_{y\,md}$	6,195	4,131	3,832	3,007	5,052
$Q1_y$	4,904	2,533	2,522	2,372	4,708
$Q1_{md}$	2,515	1,661	1,374	1,583	2,833
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.003	0.000	0.237
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.000
IE					
$Q1_{y\,md}$	11,316	2,632	699	2,773	14,469
$Q1_y$	5,730	1,336	932	1,265	8,317
$Q1_{md}$	5,434	1,657	531	1,668	8,185
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.452	0.000	0.000
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.151	0.000	0.000
NL					
$Q1_{y\,md}$	8,618	8,556	10,030	1,928	1,958
$Q1_y$	3,369	3,262	5,296	1,644	2,363
$Q1_{md}$	2,193	2,181	3,414	1,732	1,536
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.001	0.032	0.000
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.002	0.000
SE					
$Q1_{y\,md}$	6,108	4,225	5,485	2,495	6,110
$Q1_y$	7,303	3,052	3,515	2,605	9,041
$Q1_{md}$	3,015	1,562	1,434	1,430	3,869
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.002	0.000	0.021	0.613	0.000
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.000
UK					
$Q1_{y\,md}$	11,870	9,018	6,138	5,578	6,117
$Q1_y$	7,115	5,603	5,488	4,836	5,782
$Q1_{md}$	5,264	5,335	4,856	4,476	4,133
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.186	0.005	0.366
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.002	0.001	0.000

Notes:

[1] Only including households with children under age 18

[2] This is the P-value from the adjusted Wald test testing the equivalence of the mean coverage rate. The standard errors take survey design into account. The variables accounting for survey design have been programmemed using the coding developed by Tim Goedeme (2011).

Source: EU-SILC (2007)

Table 4.6: Average income share of benefit by overlap groups (in both 1st quintiles ($Q1_{y\,md}$), only in 1st income quintile ($Q1_y$), only in 1st material deprivation quintile ($Q1_{md}$))

	All transfers	Housing & Social exclusion	Social exclusion	Housing	Family [1]
DE					
$Q1_{y\,md}$	0.386	0.358	0.443	0.109	0.280
$Q1_y$	0.240	0.169	0.268	0.082	0.229
$Q1_{md}$	0.115	0.142	0.179	0.036	0.124
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.001	0.000
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.000
FR					
$Q1_{y\,md}$	0.467	0.378	0.430	0.247	0.245
$Q1_y$	0.242	0.168	0.200	0.152	0.185
$Q1_{md}$	0.096	0.078	0.049	0.075	0.086
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.000	0.000
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.000
IE					
$Q1_{y\,md}$	0.529	0.135	0.040	0.140	0.612
$Q1_y$	0.255	0.096	0.053	0.093	0.325
$Q1_{md}$	0.138	0.065	0.021	0.066	0.209
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.498	0.000	0.000
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.001	0.000	0.000
NL					
$Q1_{y\,md}$	0.621	0.626	0.737	0.138	0.103
$Q1_y$	0.157	0.157	0.193	0.118	0.105
$Q1_{md}$	0.095	0.105	0.095	0.103	0.046
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.021	0.727
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.000
SE					
$Q1_{y\,md}$	0.357	0.294	0.381	0.174	0.281
$Q1_y$	0.286	0.216	0.201	0.197	0.310
$Q1_{md}$	0.091	0.070	0.053	0.068	0.112
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.177	0.035
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.000
UK					
$Q1_{y\,md}$	0.688	0.541	0.347	0.352	0.345
$Q1_y$	0.352	0.305	0.238	0.313	0.275
$Q1_{md}$	0.162	0.186	0.133	0.180	0.119
P-value ($Q1_{y\,md} = Q1_y$) [2]	0.000	0.000	0.000	0.001	0.000
P-value ($Q1_{y\,md} = Q1_{md}$)	0.000	0.000	0.000	0.000	0.000

Notes:

[1] Only including households with children under age 18

[2] This is the P-value from the adjusted Wald test testing the equivalence of the mean coverage rate. The standard errors take survey design into account. The variables accounting for survey design have been programmemed using the coding developed by Tim Goedeme (2011).

Source: EU-SILC (2007)

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