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Non-cash benefits from social housing in Europe: a comparative perspective

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Abstract

Most of the available comparative empirical evidence on levels and trends in income inequalities and poverty in OECD countries relies on the concept of household disposable *cash* income, thus ignoring the services governments provide to households. Including those services matters a lot, however, for policy interpretation. While cash housing benefits are generally included in household disposable income, the effect of social housing is not accounted for. This may provide a misleading picture of the impact of overall housing policies on inequality and poverty, as some countries use different policies to help households meet their housing expenses. In this paper we study the value of the in-kind benefit households receive by living in social housing accommodation. For this purpose we calculate estimates of imputed rent, which until now has mainly been used to estimate the benefit derived from homeownership. We then analyse how these benefits are distributed over the population and how they help to combat poverty. Finally, in a case study for Germany, we compare cash and in-kind social benefits for housing.

Keywords: Social housing, Non-cash income, Imputed Rent, Income distribution

JEL codes: D31, H4, I31, I32

1 Introduction

While cash housing benefits are generally included in household disposable income in distributive studies, the effect of social housing is not accounted for. This may provide a misleading picture of the impact of overall housing policies on inequality and poverty, as countries use different policies to help households meet their housing expenses (Gardiner *et al.*, 1995; Whitehead and Scanlon 2007). When, for instance, country A heavily subsidizes social housing, whereas country B has no such provision at all, this difference will not show up in traditional income distribution statistics, even though the financial implications for the households in the two countries may differ considerably. Hence, this inclusion matters for policy interpretation. In times of austerity measures, this is even more important, as cuts in housing benefits may be compensated by an increase in social housing, or on the contrary exacerbated by cuts in social renting too. This last scenario might be the more likely one for countries that have seen a reduction in their social housing stock (e.g. the Netherlands and the United Kingdom), while the number of applicants has increased. In times of economic crisis social housing is increasingly under pressure, which is reflected by increases in evictions, homelessness, a growth in waiting lists for social housing, and increased indebtedness in relation to utilities such as heating and water (CECODHAS, 2012b; Frazer and Marlier, 2011).

In this paper we study the value of the in-kind benefit households receive by living in social housing accommodation. Recent years have seen an increasing academic literature on the distributive implications of publicly-provided services (see Aaberge and Langørgen, 2006; Aaberge *et al.*, 2010; Marical *et al.* 2008; OECD, 2008 and 2011; Paulus *et al*., 2010; Vaalavuo, 2011; Verbist *et al*., 2012), but most of these studies focus on the larger categories of public services like education and health care. Including these services has been shown to matter a lot. Here, we focus on the impact of incorporating the benefit derived from social housing and its impact on the *distribution* of resources across households as it can be expected that this impact is not the same across countries. For this purpose we calculate estimates of imputed rent, which until now has mainly been used to estimate the benefit derived from homeownership. We then analyse how these benefits are distributed over the population and how they help to combat poverty.

In section 2 we compare social housing systems and user rates in Europe. We then explain how the value of social housing is estimated, using the concept of imputed rent. For 17 EU countries we present in section 4 the distributive outcomes of including the value of social housing in the income concept. Section 5 presents a case study for Germany, where we compare the distributive effect of cash and in-kind housing benefits. Section 6 concludes.

2 Social housing in a comparative perspective

Social housing refers to housing which is owned and supplied by public authorities, which can be the state or municipalities, but also independent organisations, such as housing associations (Andrews *et al*. 2011). Social housing can be provided either in the form of rental dwellings, or through favourable provisions for buying a dwelling. In most countries, social housing generally refers to social rental dwellings. This means that dwellings are typically provided at below-market rents and allocated outside market mechanisms. There is wide variation across countries in terms of conditions of access to social housing. In countries like the Netherlands and Sweden, access to social housing is not explicitly linked to individuals' resources, while for instance Belgium and Germany apply a means-test for access to social housing (Andrews *et al*., 2011).

Using information from the OECD Housing Market survey which was conducted beginning of 2010, Andrews *et al*. (2011) classify social housing systems along two dimensions, namely the size of social housing, and the distinction between broad-based and targeted systems of social housing (see Table 1) (see also Kemeny 1995, 2006 for a similar classification).

Table 1: Types of social housing systems, based on eligibility and allocation criteria

Size: Percentage of social housing in total dwelling stock	Broad-based system	Targeted system	
	No income limit; Waiting list	Income limit, waiting list with some combination of priority groups	Income limits, needs/priority based allocation
0-5%	Luxembourg	Estonia, Norway, Slovak Republic	Italy, Portugal, Hungary, Greece, Slovenia
6-10%		Belgium, Ireland	Germany
11-20%	Sweden	Poland, Spain	Czech Republic, Finland, France, United Kingdom
More than 20%	Denmark, Netherlands	Austria	

Source: Andrews et al. (2011), based on OECD Housing Market Questionnaire.

Broad-based systems operate jointly with the private rental market, with social housing playing a market-regulating role (CECODHAS, 2012). In Sweden for instance, no income ceilings are used in the allocation of dwellings from public housing companies, in order to avoid social segregation (CECODHAS, 2012). In principle, social housing organized along these lines is open to all citizens, though this does not exclude the possibility that in some countries local governments can reserve part of the dwellings for individuals with special needs (*e.g*. in Sweden and the Netherlands), or that some groups are excluded (Fitzpatrick and Stephens, 2007). Targeted systems of social housing operate separately from the private rental market and apply income thresholds to identify eligible households, assuming that these households are unable to find decent housing on the market.

Andrews *et al*. (2011) further distinguish two models within the targeted systems: on the one hand housing can be allocated to eligible tenants on the basis of waiting list, possibly in combination with consideration of priority to specific groups (*e.g*. in Belgium, Poland and Austria), while on the other hand the needs of the most vulnerable households play a greater role than the time on the waiting list (*e.g*. in Italy, Germany and the United Kingdom).

Table 2: Frequency of different categories of tenure status in EU countries, comparison of EU-SILC with other data sources

	EU-SILC (2011)				CECODHAS (2012)	
	% of households				Social rental stock as % of	
		Tenant				
	Owner	Private market	Reduced rent	Rent free	Total housing stock	Rental stock
AT	50.0	29.3	**12.7**	8.0	**23**	56
BE	66.4	22.6	**9.4**	1.6	**7**	24
BG	86.1	2.0	**1.9**	10.0		
CH	39.0	55.9	**3.7**	1.4		
CY	65.9	12.8	**1.2**	20.2	**0**	na
CZ	77.9	13.9	**4.8**	3.5	**17**	na
DE	45.2	47.3	**4.4**	3.1	**5**	8
DK	57.5	42.4	**0.0**	0.1	**19**	51
EE	79.9	2.8	**3.1**	14.3	**1**	25
ES	79.6	12.1	**2.8**	5.5	**2**	15
FI	67.9	13.1	**17.9**	1.1	**16**	53
FR	60.0	17.4	**18.9**	3.8	**17**	44
GR	71.7	21.1	**1.6**	5.6	**0**	0
HR	90.7	1.9	**1.7**	5.7		
HU	88.3	3.4	**3.4**	5.0	**4**	53
IE	70.4	13.9	**14.1**	1.6	**9**	41
IS	71.9	13.2	**11.7**	3.2		
IT	71.7	13.7	**4.7**	9.9	**5**	28
LT	92.0	1.4	**1.2**	5.4	**3**	43
LU	64.0	30.3	**3.2**	2.5	**2**	7
LV	81.4	8.3	**5.1**	5.1	**0.4**	2.5
MT	77.3	2.3	**15.2**	5.3		
NL	57.1	42.3	**0.0**	0.6	**32**	75
NO	78.2	13.9	**0.5**	7.4		
PL	79.9	4.0	**2.0**	14.2	**10**	64
PT	73.7	12.7	**6.2**	7.4	**3**	16
RO	96.4	1.3	**0.8**	1.5		
SE	62.6	37.0	**0.4**	0.0	**18**	48
SI	75.9	6.1	**2.8**	15.2	**6**	na
SK	90.1	7.9	**0.6**	1.4	**3**	87
UK	66.0	13.6	**19.1**	1.3	**18**	54

Sources: Own calculations from EU-SILC (2011); CECODHAS (2012).

The scale of social housing varies considerably from country to country with relatively high shares in countries like the United Kingdom, Finland, France and Ireland according to EU-SILC and other sources (Table 2), namely the European Social Housing Observatory (CECODHAS (2012),

http://www.cecodhas.org/)[1]. For most countries correspondence between the various data sources turns out to be reasonable. For a number of countries, however, EU-SILC seems to seriously underestimate the proportion of households in the social rent sector: this appears to be the case for Austria, Czech Republic, Poland and Sweden. For Portugal, on the contrary, the EU-SILC figures seem to report higher shares of social renters (Table 2). There may be various reasons for these differences. EU-SILC considers only private households (excluding institutionalised households) and the definition of reduced rent tenants includes various forms of reduced rent (not only social housing sector, also but also housing provided by other actors at a reduced rate such as employers, cf. infra). CECODHAS looks at the social housing only and as a share of the total housing stock. When it comes to a comparison of the relative level of social housing (e.g. budgetary efforts as a share of GDP), unfortunately, no internationally comparative estimates are available.

3 Estimating the value of social housing for households in the EU

Estimating the distributive effect of social housing is difficult, as it requires quantifying the size of the implicit benefits provided. We refer to the concept of imputed rent, to provide an estimate of the in-kind benefit households derive from living in social housing (see section 3.1). In section 3.2 we explain how we have derived these estimates for a selection of EU countries, using the EU-SILC data. Note that in our estimation we abstract from potential second order effects; one needs to bear in mind, however, broad-based and/or sizeable social housing systems probably affect rents on the private market.

3.1 Estimating imputed rent for measuring the value of social housing

A method to take account of the income value households derive from living in a publicly-provided house at lower rent, is to estimate the value of *imputed rent*. As Frick et al. (2010, 177) argue "… looking at housing policies targeted at low income renters, the economic position of those being subsidized via means-tested cash transfers will be captured accurately by a monetary measure, whereas the implicit income advantage of the in-kind subsidization via public housing tenants can only be adequately approximated by using an imputed rent approach".

The EU Commission regulation (EC) No. 1980/2003 defines imputed rent as follows: "The imputed rent refers to the value that shall be imputed for all households that do not report paying full rent, either because they are owner occupiers or they live in accommodation rented at a lower price than

[1] Scanlon and Whitehead (2007) provide figures for a more limited number of countries. Their estimates are close to those of CECODHAS.

the market price, or because the accommodation is provided rent-free. The imputed rent shall be estimated only for those dwellings (and any associated buildings such as a garage) used as a main residence by the households. The value to impute shall be the equivalent market rent that would be paid for a similar dwelling as that occupied, less any rent actually paid (in the case where the accommodation is rented at a lower price than the market price), less any subsidies received from the government or from a non-profit institution (if owner-occupied or the accommodation is rented at a lower price than the market price), less any minor repairs or refurbishment expenditure which the owner-occupier households make on the property of the type that would normally be carried out by landlords. The market rent is the rent due for the right to use an unfurnished dwelling on the private market, excluding charges for heating, water electricity, etc."[2]

According to this definition three groups of potential beneficiaries of imputed rent can be identified: owner-occupiers, rent-free tenants and tenants with below-market rent (including social housing and rent-reduction by employers or relatives). Most work on imputed rent until now has focused on estimating the benefits owner occupiers derive from their owning the house (e.g. Canberra Group 2011; Frick & Grabka 2003). Analogously, a measure of imputed rent can be derived for tenants who rent in the public sector at a below-market rent. However, very little conceptual and empirical work has been done on that issue so far.

A general description of the various approaches that can be used to calculate imputed rent on the basis of micro data can be found in Frick and Grabka (2003), Frick *et al.* (2006) and Frick *et al.* (2010). They propose three methods:

1. the ***opportunity cost approach*** (also known as the 'rental equivalence method'), which seeks to impute a rental value for all property of potential imputed rent beneficiaries using information from those households living in the private (non-subsidized) rental market. It is often based on a hedonic regression approach, following in principle a two-step procedure. This is the method used in this paper, and its practical implementation will be discussed in more detail further below.
2. the ***capital market approach*** (also called the 'user cost method'), which starts from the idea of alternative use of capital on the capital market. It focuses on the trade-off between investing in one's own home or in financial assets that would yield income flows through interests or dividends. A problem of this approach is that it is based on the homeowner's

[2] Regulation (EC) No 1980/2003 of 21 October 2003 implementing Regulation (EC) No 1177/2003 of the European Parliament and of the Council concerning Community statistics on income and living conditions (EU-SILC) as regards definitions and updated definitions.

own estimation of the current market value, which may lead to an overestimation of its value (Frick *et al.*, 2010). Moreover, for rented accommodation, this information is in general not available in survey data (here: EU-SILC), so it cannot be used here.

3. the ***self-assessment*** approach, which is based on the assessment of respondents of the rental value of their home. In EU-SILC the following question is asked to owners and rent-free tenants: "Can you make an estimate of the monthly rent you would have to pay for your dwelling if you would have to rent it?" The amount answered on this self-assessment question is taken to be the value for imputed rent. Reduced-rent tenants are not asked what their rent would be if they would rent at market prices. Consequently, the self-assessment approach is only applicable to owners and rent-free tenants, and not for the group we look at.

3.2 Estimating imputed rent in EU SILC

The empirical analyses in this paper are carried out on 2011 micro data from the European Union Survey on Income and Living Conditions (EU SILC) which is available for 28 EU countries as well as for Iceland, Norway and Switzerland. The income reference period is 2010. EU-SILC distinguish five types of tenure status, namely outright homeowners, homeowners on mortgage, private market tenants, reduced rent tenants and those living for free (cf. Table 2). Reduced rent tenants can include those (a) renting social housing, (b) renting at a reduced rate from an employer and (c) those in accommodation where the actual rent is fixed by law. No differentiation between these three types is possible on the basis of the data at hand, which may lead to an overestimation. When the term 'social renter' is used in the following, this refers to this category of reduced rent tenants.

In principle, estimates for imputed rent should be available for all countries as separate variables in EU-SILC as from the 2007 dataset onwards, as all countries are obliged to provide gross and net imputed rent (i.e. before and after deduction of relevant housing costs, such as mortgage interest payments). EUROSTAT advises the member states to use a regression approach to derive imputed rent. However, in reality, in the 2011 dataset there are no values of imputed rent for reduced rent tenants in Bulgaria, Germany, Denmark, Iceland, the Netherlands, Norway and the Slovak Republic. Moreover, the documentation on how imputed rent is derived in the individual countries' datasets is very limited and often unclear. In the internal EUROSTAT document "Countries' experience: Imputed Rent (HY030G)" an overview is provided of the construction of variable HY030G and the choice of method for 2007. This document provides a mixture of intentions on how IR will be calculated in a specific country, as well as reports of how it has been done. Unfortunately, in this documentation it is

not clear for all countries how the estimations are done. Juntto and Reijo (2010) and Törmälehto and Sauli (2010) already point to some important issues of comparability for EU-SILC 2007. In their analysis of the distributive impact of imputed rent in EU-SILC, Törmälehto and Sauli (2013) indicate that there is still lack of transparency for more recent waves of SILC. Based on an analysis of metadata, these authors describe that, in general, countries report to have made just a few changes in their quality reports since 2007. In addition, if the same methodology is used to derive imputed rent for owners and for reduced rent tenants, it is likely to be inappropriate (e.g. because of different types of selection bias for owners compared to social renters).

Table 3: Frequency of different categories of tenure status (tenants, households) and whether IR is estimated with Heckman or OLS

	Number of households that rent at		Estimation?
	market rent	reduced rent	
AT	1,672	771	Heckman
BE	1,242	465	Heckman
BG	91	101	No
CH	3,626	261	Heckman
CY	366	34	No
CZ	1167	341	Heckman
DE	5716	496	Heckman
DK	1,407	0	No
EE	117	98	No
ES	1109	361	Heckman
FI	933	1,180	Heckman
FR	1,703	1966	Heckman
GR	765	60	No
HR	77	93	No
HU	383	365	Heckman
IE	535	580	OLS
IS	306	255	Heckman
IT	2252	859	Heckman
LT	39	46	No
LU	1182	196	Heckman
LV	511	329	Heckman
MT	86	646	No
NL	2,982	0	No
NO	458	16	No
PL	460	202	Heckman
PT	649	337	Heckman
RO	73	42	No
SE	2028	21	No
SI	426	187	Heckman
SK	379	30	No
UK	834	1,414	OLS

Source: Own computations from EU-SILC 2011.

For all these reasons, we provide our own estimates of imputed rent for reduced rent tenants, using the opportunity cost approach (or 'rental equivalence method'). Using information from those households living in the private (non-subsidized) rental market, a rental value for reduced rent

tenants is estimated. As the number of reduced rent tenants may be larger than the size of the social housing sector, results should be interpreted as an upper boundary. In some countries there is no clear distinction between market rent and social rent, *e.g*. because (almost) all renters are in social housing, rendering the concept of market rent meaningless. This is apparently the case in the Netherlands, Denmark and Sweden. In this case, tenants are all classified as renting at prevailing or market rent. Consequently, no derivation of imputed rent is possible in these two countries, as there is no reference group from which an equivalent rent can be derived.

Table 3 provides an overview of the number of cases of both private and social renters. No estimates are provided for countries where there are too few cases (defined here as less than 100) for either private market tenants or reduced rent tenants. This is the case for Bulgaria, Cyprus, Denmark, Estonia, Greece, Croatia, Lithuania, Malta, the Netherlands, Norway, Romania, Sweden and the Slovak Republic. Hence, the analysis is confined to 17 EU countries.

Table 4: Covariates used to estimate the value of social housing, opportunity cost approach, EU-SILC 2011

Type of the dwelling: • Detached house • Semi-detached house • Apartment/flat in building with <10 dwellings • Apartment/flat in building with ≥10 dwellings
Size of the dwelling: • 1 room in house • 2 rooms • 3 rooms • 4 rooms • 5 rooms • 6 or more rooms
Quality of the dwelling: • Moisture free? • Possible to keep home adequately warm? • Modern comfort present? (bath / shower / indoor flushing toilet) • Dwelling too dark? • Central heating?
Quality of the neighbourhood • Noise from neighbours / street? • Pollution, grime or other environmental problem? • Crime, violence or vandalism in the area?
Geographical location • Densely populated area • Intermediate area • Thinly populated area • Region (where possible a variable based on NUTS2 was included)
Occupancy in years
Household disposable income (logarithmic) Number of household members

We estimate the extent to which tenants in the social rental sector are paying rent below the amount they would pay if they were renting the same accommodation in the private market. The opportunity cost approach is used, relying on a hedonic regression estimation of the logarithm of rent actually paid by main tenants on the private housing market (so excluding social housing and any other reduced rent payments). The covariates are presented in Table 4 and refer to characteristics of the dwelling and its environment, as well as Household disposable income and number of household members that are used as a proxy for unobserved characteristics.

The possibility of selection bias between private and reduced rent tenants is investigated. Selection bias may result from e.g. different quality of housing between private and social renters. The selection bias is supposed to run along the criteria for eligibility and other factors like social segregation. The selection variables used are household income, the capacity to face unexpected financial expenses, size of the family, whether or not the family is a lone parent (all of which can be considered as indicators for the eligibility criteria) and whether or not the head of household has a migration background (country of birth = non-EU) as an indicator for possible segregation.

A two-step Heckman procedure is applied to predict the logarithm of rent:

> *Step 1*: running of a semi-logarithmic regression model with log(rent) as dependent variable based on the population of tenants in the private market. The covariates that have been used refer to type and size of the dwelling, quality of the dwelling and the neighbourhood, occupancy in years, geographical location (see Table 3 for an overview)[3]. Most of the independent variables were recoded into dummy variables, with the most frequent one as reference category is (which may differ across countries). A Heckman selection correction is applied to correct for potential selectivity into the rent status.
>
> *Step 2*: application of the resulting coefficients to otherwise similar reduced-rent tenants.

If there is no convergence of the estimation, then an OLS-regression is run, using the same dependent variable and covariates; this is only the case for Ireland and the United Kingdom (see Table 3).

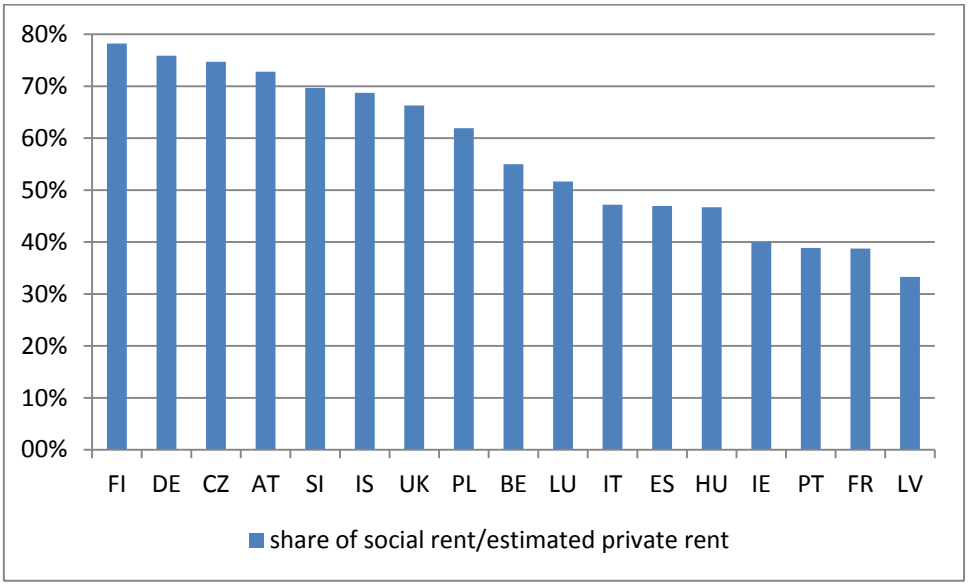
Next, an error correction term is added in order to maintain variation in the resulting estimates of imputed rent for reduced rent tenants. This error component is randomly chosen from a distribution characterised by zero mean and a variance set equal to the difference between the standard deviation of the actual rent variable and the standard deviation of the predicted imputed rent

[3] Occupancy in years is missing for Finland and Latvia. Geographical location is missing for Slovenia, and has only two (instead of three) categories in Iceland and Latvia.

variable for tenants. A measure of imputed rent is derived by taking the antilog of the estimated monthly imputed rent, deducting from it actual rent paid. Finally, annual amounts are arrived at by multiplying the estimates by 12; as over the year tenants can move and/or change housing status, this is an approximation. Negative values of imputed rent are put to zero. Negative values may arise because of overlapping distribution of social and private renters, e.g. because the geographical categorisation used in the regression is too rough.

The figure below show the relationship between actual rents paid by reduced rent tenants and the estimation of the rent they would have to pay on the private market. There are substantial differences across countries. The impact is relatively modest in countries like Finland, Germany, the Czech Republic and Austria, where the actual rent paid is more than 70% of what these tenants would have to pay on the private market. In other countries, the advantage is much more substantial, as the actual rent paid is 40% or less than what one would have to pay on the private market for a similar dwelling; these countries are Ireland, Portugal, France and Latvia.

Figure 1. Rent paid by reduced rent tenants as a share of estimated rent they would have to pay in private market (average per household), 2012



Source: own calculations

4 Distributive impact of including the in-kind benefit of social housing in the income concept.

Previous studies (e.g. Gardiner et al., 2005; Saunders and Siminski, 2005) suggest that social housing is probably the category of government services that benefit the poor the most. We now look at distributive outcomes from three angles:

1) Where are benefits of social housing located in the income distribution?
2) How important is the value of social housing across the income distribution?
3) What is the impact on inequality and poverty of including imputed rent for social renters in the income concept?

We rank all individuals on the basis of their equivalised disposable income[4], and then divide them into quintiles, which are five groups of equal size (Q1 is the poorest 20% of the population and Q5 the 20% richest). Empirical outcomes are given for the 17 EU countries for which we have been able to estimate imputed rent (see section 3.2).

Where are benefits of social housing located in the income distribution?

Table 5 gives the share of beneficiaries of social housing in each quintile, while Figure 1 shows how the total mass of social housing benefits is distributed over these quintiles. These outcomes confirm that social housing is often targeted at low income households. In most countries, the share of beneficiaries decreases in all countries when moving up the income ladder. For instance in France 38% of individuals in the bottom quintile lives in social housing. Also in Finland, Ireland, and the United Kingdom, around 30% of the population in the bottom quintile benefits from social housing. These are countries with overall high shares of social housing, and apparently these are concentrated among the poorer segments of the population, as intended by the means-test that applies in all these countries. In most countries, the share of individuals from the top quintile living in social housing is very small (<2%), though in some, 5 à 10 % of persons in the top quintile live in social housing; in Austria it is almost 10%. It may be surprising that social housing is still present in the top quintile, even when eligibility criteria include income ceilings. But often income ceilings apply at the moment of entry; the social renters may meanwhile improve their income position over time without being obliged to move to other housing. Moreover, in some countries (*e.g*. Austria, France and Germany) maximum income ceilings for eligibility are set high enough to encourage income mixing of tenants (CECODHAS, 2012).

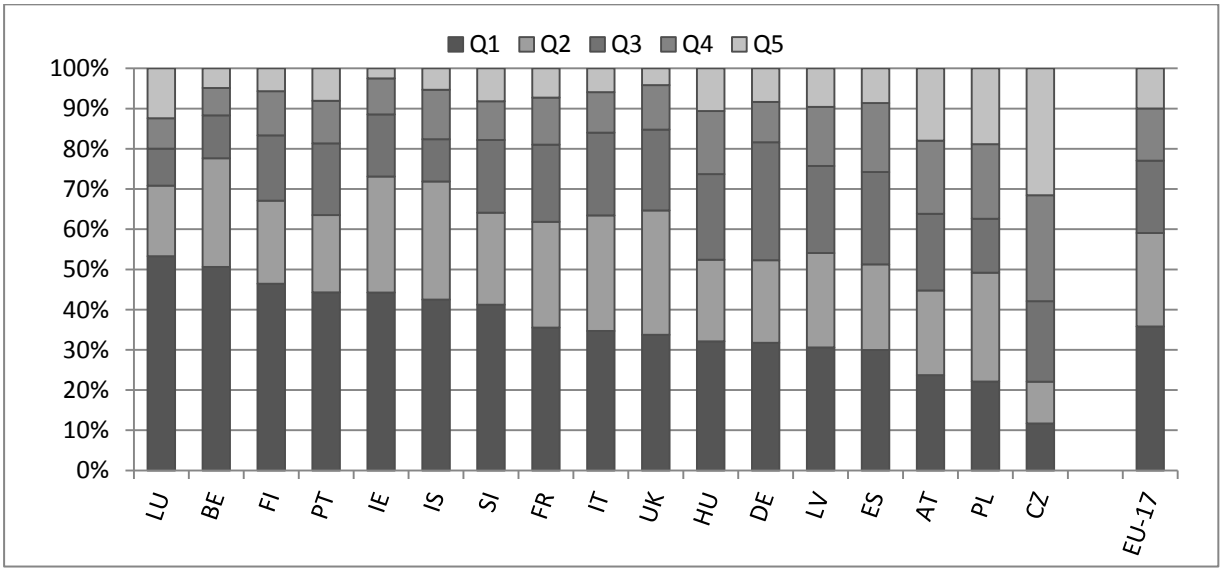
[4] Disposable income is household income after inclusion of cash transfers and deduction of taxes. Equivalised income is derived by dividing income by the so-called 'modified OECD scale', which assigns a weight of 1 to the first adult in the household, 0.5 to every other adult and 0.3 to each child (aged below 14 year).

Table 5. Share of reduced rent tenant per quintile

	Q1	Q2	Q3	Q4	Q5	Total
FR	38.0%	24.9%	15.8%	9.6%	4.8%	18.6%
UK	34.3%	27.6%	16.3%	7.2%	2.8%	17.6%
FI	31.5%	19.1%	12.6%	7.1%	3.7%	14.8%
IE	30.9%	19.3%	10.1%	6.1%	1.8%	13.7%
AT	9.9%	12.2%	9.9%	12.4%	9.3%	10.7%
IS	17.8%	12.3%	7.9%	4.5%	1.6%	8.8%
BE	19.8%	10.6%	5.4%	2.5%	1.5%	8.0%
PT	10.2%	5.9%	4.2%	4.0%	2.2%	5.3%
LV	10.5%	4.8%	5.0%	3.2%	2.0%	5.1%
IT	8.0%	6.1%	4.5%	2.2%	1.8%	4.5%
CZ	3.8%	3.6%	4.3%	4.3%	5.1%	4.2%
DE	8.1%	4.7%	3.2%	2.0%	1.0%	3.8%
HU	7.2%	3.5%	2.5%	2.0%	1.4%	3.3%
LU	7.5%	2.5%	1.5%	1.1%	1.0%	2.7%
ES	4.2%	3.0%	3.2%	1.6%	1.2%	2.6%
SI	5.1%	2.7%	2.4%	1.2%	0.9%	2.5%
PL	2.1%	2.1%	1.4%	1.1%	1.6%	1.7%
EU-17	14.6%	9.7%	6.5%	4.2%	2.6%	7.5%

Note : countries are ranked from high to low share of SH beneficiaries.
Source: Own calculations on EU-SILC 2011.

Figure 2. Distribution of social housing benefit over quintiles



Note: Countries are ranked in decreasing order by share of social housing expenditures in the bottom quintile (Q1).
Source: Own calculations on EU-SILC 2011.

The share of social housing expenditures going to the bottom quintile is on average 35% for the EU-17, whereas the share of the top quintile is around 10% (Figure 2). However, the share going to the bottom quintile exceeds 50% in Belgium and Luxembourg, and is around only 20% in Austria and Poland, and below 20% in the Czech Republic. Belgium, Finland and Ireland have a high share of social housing in the bottom quintile, and a fraction of this in the top quintile, indicating that the distribution of beneficiaries drives this very pro-poor pattern. In Austria, benefits are more equally

distributed over quintiles. Interestingly, the only broad-based system country for which we have data, Luxembourg (see Table 1), is characterised by a very pro-poor pattern, and it differs in outcomes hardly from most other countries that are labelled as 'targeted'.

How important is the value of social housing across the income distribution?

Table 6 shows the relative size of the benefit of social housing as the proportion of imputed rent of reduced rent tenants as a share of disposable income per quintile. Compared to other publicly provided services, like education and health care, social housing has a much lower distributive impact, because its size is so much smaller. Social housing represents on average merely half a per cent of disposable income, while for education and health this is around 10%, resp. 14% for these countries (based on Verbist et al., 2012).

Table 6. In-kind benefit from social housing as a share of disposable income per quintile

	All individuals						Reduced rent tenants only					
	Q1	Q2	Q3	Q4	Q5	Total	Q1	Q2	Q3	Q4	Q5	Total
FR	4.8%	2.3%	1.3%	0.6%	0.2%	1.2%	12.7%	9.4%	8.5%	6.7%	5.7%	7.7%
UK	4.6%	2.6%	1.2%	0.5%	0.1%	1.0%	12.7%	9.4%	7.6%	6.9%	4.0%	6.8%
FI	1.5%	0.5%	0.3%	0.1%	0.1%	0.3%	4.7%	2.7%	2.3%	2.1%	1.7%	2.4%
IE	6.0%	2.5%	1.0%	0.5%	0.1%	1.1%	19.2%	12.7%	10.2%	7.6%	4.8%	8.7%
AT	0.5%	0.3%	0.2%	0.1%	0.1%	0.2%	4.5%	2.1%	1.9%	1.2%	1.0%	1.7%
IS	1.5%	0.7%	0.2%	0.2%	0.1%	0.4%	9.0%	6.1%	3.0%	4.3%	3.6%	4.6%
BE	5.8%	2.0%	0.6%	0.3%	0.1%	1.0%	29.3%	19.2%	11.3%	12.7%	11.4%	14.6%
PT	2.0%	0.5%	0.4%	0.2%	0.1%	0.3%	19.7%	8.7%	8.7%	4.0%	3.5%	6.5%
LV	3.6%	1.5%	1.0%	0.5%	0.2%	0.8%	35.2%	31.6%	19.8%	15.1%	11.4%	18.2%
IT	1.9%	0.8%	0.4%	0.2%	0.1%	0.4%	24.6%	13.5%	9.9%	7.6%	3.5%	8.5%
CZ	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	1.8%	1.1%	1.6%	1.5%	1.1%	1.4%
DE	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	2.0%	1.4%	2.1%	0.9%	1.0%	1.3%
HU	0.8%	0.4%	0.3%	0.2%	0.1%	0.2%	12.5%	10.4%	11.8%	8.7%	5.8%	8.9%
LU	1.0%	0.2%	0.1%	0.1%	0.1%	0.2%	13.2%	8.4%	5.4%	5.2%	5.8%	6.6%
ES	1.3%	0.4%	0.3%	0.2%	0.1%	0.2%	27.1%	13.8%	9.9%	10.8%	4.9%	9.8%
SI	2.3%	0.8%	0.5%	0.2%	0.1%	0.5%	45.6%	31.0%	21.6%	19.8%	13.3%	21.9%
PL	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	5.4%	4.0%	2.2%	2.9%	1.1%	2.4%
EU-17	2.3%	0.9%	0.5%	0.2%	0.1%	0.5%	16.9%	11.2%	8.4%	7.1%	5.0%	8.0%

Note : countries are ranked from high to low share of SH beneficiaries.
Source: Own calculations on EU-SILC 2011.

Nevertheless, social housing is an important service for the beneficiaries. If the analysis is confined to reduced rent tenants only, social housing would increase their disposable income by 8% on average, with much higher shares in Belgium, Latvia and Slovenia (more than 14%). Also in other countries (Southern Europe, Ireland and the United Kingdom[5], France, Hungary and Luxembourg), social housing represents 5 to 10% of disposable income for social renters. In general and by design, the income-increasing effect of social housing is largely confined to the lower-income quintiles.

[5] Ireland and the United Kingdom both have private market rent that are market-determined, and are thus characterised by very larger differences between private and social rents (Scanlon and Whitehead, 2007).

What is the impact on inequality and poverty of including imputed rent for social renters in the income concept?

Finally, what is the impact of social housing on the level and structure of inequality and poverty? Inequality is measured by four widely used indicators (see *e.g*. OECD 2008, 2011), namely the Gini coefficient, the Mean Logarithmic Deviation (GE(0), which puts more weight on the bottom of the income distribution), the quintile share ratio of the top and bottom quintiles (S80/S20) and the percentile ratio of percentiles 90 and 10 (P90/P10). The effect of social housing on overall inequality is rather limited. The Gini coefficient drops on average with 1% (from 0.288 to 0.285) (see Table 7). Notable exceptions are Belgium, France, Ireland and the United Kingdom, with reductions of around 2% or more; as we have seen, these are the countries that combine a high share of social renters with a relatively large size of the imputed benefit. The inequality effect according to the other three measures, GE(0), S80/S20 and P90/P10, is somewhat more pronounced, though still relatively modest (with the exception of France).

Table 7. Change (%) in inequality indicators after inclusion of in-kind benefits from social housing

	Gini			GE(0)			P90/P10			S80/S20		
Income	Cash	Extended	% Δ	Cash	Extended	% Δ	Cash	Extended	% Δ	Cash	Extended	% Δ
FR	0.308	0.288	-6.4%	0.165	0.146	-11.5%	3.52	3.19	-9.2%	4.61	3.75	-18.7%
UK	0.326	0.320	-1.7%	0.186	0.179	-3.5%	3.90	3.79	-2.9%	5.34	5.11	-4.4%
FI	0.258	0.256	-0.7%	0.115	0.113	-1.5%	3.05	3.02	-1.0%	3.68	3.63	-1.4%
IE	0.296	0.289	-2.4%	0.159	0.152	-4.9%	3.70	3.53	-4.6%	4.60	4.35	-5.6%
AT	0.263	0.262	-0.2%	0.130	0.129	-0.5%	*3.10*	*3.09*	*0.0%*	*3.81*	*3.80*	*-0.4%*
IS	0.233	0.231	-0.9%	0.105	0.101	-3.7%	*2.58*	*2.57*	*-0.7%*	3.31	3.26	-1.5%
BE	0.261	0.255	-2.4%	0.122	0.116	-5.2%	3.18	3.09	-2.6%	3.86	3.65	-5.4%
PT	0.342	0.340	-0.6%	0.199	0.196	-1.4%	4.57	4.50	-1.6%	5.67	5.56	-1.9%
LV	0.347	0.344	-1.0%	0.222	0.217	-2.2%	5.10	5.03	-1.4%	6.49	6.24	-3.9%
IT	0.314	0.312	-0.7%	0.194	0.190	-1.7%	4.08	4.04	-1.0%	5.56	5.46	-1.8%
CZ	*0.252*	*0.252*	*0.0%*	*0.110*	*0.110*	*0.0%*	*2.91*	*2.90*	*0.0%*	*3.54*	*3.54*	*0.0%*
DE	0.286	0.286	-0.1%	0.145	0.145	-0.2%	*3.60*	*3.59*	*-0.1%*	*4.46*	*4.45*	*-0.2%*
HU	0.268	0.267	-0.4%	0.119	0.118	-0.8%	3.36	3.35	-0.5%	3.91	3.88	-0.8%
LU	0.269	0.267	-0.7%	0.123	0.121	-1.4%	3.27	3.22	-1.3%	3.97	3.89	-2.0%
ES	0.332	0.331	-0.3%	0.217	0.215	-0.8%	5.02	4.97	-0.9%	7.05	6.96	-1.2%
SI	0.238	0.238	-0.2%	0.098	0.098	-0.3%	3.05	3.04	-0.3%	3.46	3.45	-0.3%
PL	0.310	0.310	0.0%	0.169	0.169	-0.1%	*3.93*	*3.92*	*-0.1%*	*4.95*	*4.94*	*-0.1%*
EU-17	**0.288**	**0.285**	**-1.1%**	**0.152**	**0.148**	**-2.4%**	**3.64**	**3.58**	**-1.7%**	**4.60**	**4.46**	**-3.0%**

Note: (1) countries are ranked from high to low share of SH beneficiaries. (2) Changes that are not statistically significant at 95% confidence level are in italics (statistical significance calculated as in Goedemé et al., 2013).
Source: Own calculations on EU-SILC 2011.

Poverty is measured on the basis of the EU-definition of relative poverty using a threshold of 60% of the national median equivalent income; poverty thresholds are recalculated for the different income concepts (i.e. cash and extended respectively). The effect of including the benefit of social housing on poverty for all individuals largely confirms the story told by the inequality indicators: the overall

effect is rather limited. Only in Ireland and France do we find significant poverty reductions of 10% and more. Also in Belgium and the United Kingdom, poverty reductions are more than 5%. All these countries combine an above average share of social renters with a high share of beneficiaries and benefits concentrated in the bottom quintile.

Table 8. Poverty rates before and after social housing benefits, floating poverty line, all individuals and social tenants only

	all individuals			reduced rent tenants only			private market tenants only		
	cash	extended	%Δ	cash	extended	%Δ	cash	extended	%Δ
FR	14.0%	11.5%	-18.1%	29.4%	4.4%	-84.9%	21.3%	24.9%	16.9%
UK	16.2%	15.0%	-7.6%	30.4%	21.5%	-29.0%	*18.1%*	*18.3%*	*1.3%*
FI	13.7%	13.1%	-4.4%	30.6%	26.2%	-14.4%	*24.2%*	*24.2%*	*0.0%*
IE	15.2%	13.5%	-10.6%	36.1%	18.5%	-48.7%	19.8%	20.7%	4.7%
AT	*12.6%*	*12.7%*	*0.1%*	12.0%	10.8%	-10.0%	*24.0%*	*24.2%*	*0.8%*
IS	*9.2%*	*9.0%*	*-2.5%*	22.9%	19.4%	-15.2%	*21.3%*	*21.3%*	*0.0%*
BE	15.3%	14.2%	-7.3%	36.2%	16.4%	-54.7%	31.7%	32.7%	2.9%
PT	18.0%	17.7%	-1.8%	35.2%	25.5%	-27.5%	*25.2%*	*25.8%*	*2.6%*
LV	*19.0%*	*18.9%*	*-0.2%*	39.1%	24.1%	-38.5%	25.8%	26.6%	3.2%
IT	*19.6%*	*19.5%*	*-0.2%*	33.9%	24.3%	-28.3%	31.3%	32.0%	2.4%
CZ	*9.8%*	*9.8%*	*0.0%*	*8.2%*	*7.4%*	*-9.0%*	*21.6%*	*21.6%*	*0.0%*
DE	*15.9%*	*15.8%*	*-0.3%*	35.3%	33.0%	-6.4%	*24.6%*	*24.7%*	*0.3%*
HU	13.8%	13.6%	-1.6%	34.7%	26.3%	-24.4%	*15.4%*	*15.5%*	*0.7%*
LU	13.6%	13.0%	-4.2%	44.2%	16.7%	-62.3%	*26.0%*	*26.5%*	*1.8%*
ES	22.2%	22.0%	-0.9%	34.0%	23.2%	-32.0%	*37.4%*	*37.4%*	*0.0%*
SI	13.6%	13.6%	-0.5%	32.1%	29.0%	-9.5%	*28.9%*	*28.9%*	*0.0%*
PL	*17.7%*	*17.7%*	*-0.1%*	*24.6%*	*24.1%*	*-2.3%*	*21.6%*	*21.6%*	*0.0%*
EU-17	**15.3%**	**14.8%**	**-3.0%**	**30.5%**	**21.5%**	**-27.0%**	**24.6%**	**25.1%**	**2.2%**

Note: (1) countries are ranked from high to low share of SH beneficiaries; (2) The poverty line is set at 60% of median income of the corresponding income concept (either cash, or extended (= cash + imputed rent of SH)); (3) Changes that are not statistically significant at 95% confidence level are in italics (statistical significance calculated as in Goedemé et al., 2013).

Source: Own calculations on EU-SILC 2011.

When focusing on reduced rent tenants only, poverty reductions are much more substantial. If we look at cash incomes (so without including the benefit of social housing), it becomes clear that reduced rent tenants belong to the more vulnerable segments of society in all countries: reduced rent tenants are in general twice as much at risk of poverty than average in the countries we consider here and they have a higher at-risk-of-poverty than private market tenants. We encounter this much higher poverty risk in almost all the countries. Taking account of the in-kind benefit of social housing considerably closes the gap. Especially in Belgium, France, Ireland, and Luxembourg poverty for this

group is more than halved and is now lower than that of private market tenants[6]. Even though reduced rent tenants still have an above average risk of poverty after inclusion of the in-kind benefit, inclusion of this benefit is important to have a better picture of the income position of this group.

Table 9: Impact of in-kind benefit social housing on housing cost overburden

	All	Private market tenants	Reduced rent tenants		Reduced rent tenant & poor	
			Actual rent	Estimated private market rent	Actual rent	Estimated private market rent
FR	4.3%	15.9%	6.8%	94.5%	15.6%	98.9%
UK	13.9%	36.6%	18.1%	33.0%	33.7%	57.4%
FI	3.8%	10.8%	6.0%	9.3%	9.9%	17.7%
IE	5.6%	18.2%	8.1%	24.6%	21.0%	54.6%
AT	4.7%	11.0%	6.0%	8.5%	23.1%	41.1%
IS	9.8%	16.1%	11.5%	16.6%	39.1%	53.1%
BE	10.4%	37.3%	16.7%	67.3%	32.2%	93.1%
PT	7.1%	25.2%	6.0%	25.1%	14.4%	59.3%
LV	11.6%	15.4%	13.1%	51.6%	29.8%	74.5%
IT	8.1%	32.7%	15.7%	41.6%	35.2%	77.9%
CZ	9.2%	23.8%	27.5%	30.4%	65.2%	66.2%
DE	14.6%	18.7%	19.4%	21.1%	39.6%	42.8%
HU	11.5%	43.8%	23.5%	49.9%	41.7%	76.5%
LU	4.0%	13.5%	1.4%	39.1%	2.0%	47.9%
ES	12.9%	46.5%	19.5%	44.6%	37.9%	78.7%
SI	4.6%	17.7%	13.8%	18.3%	31.6%	42.1%
PL	9.9%	25.7%	17.1%	22.2%	39.4%	46.8%
EU-17	8.6%	24.1%	13.5%	35.2%	30.1%	60.5%

Note: (1) countries are ranked from high to low share of SH beneficiaries.

Source: Own calculations on EU-SILC 2011.

Finally, we look at the impact of the in-kind benefit of social housing on housing affordability. An indicator of housing affordability is the housing cost overburden rate, i.e. the share of the population living in a household where the total cost of housing accounts for more than 40% of household disposable income (see *e.g*. Pittini, 2012). Table 9 gives the housing cost overburden rate for the entire population and for different groups of tenants. It shows clearly that the in-kind benefit of social housing contributes to a large extent to reducing cost overburden for reduced rent tenants: if they would have to pay the estimated private market rent the share of 'overburdened' individuals would be 35.2% compared to 13.5% in the current situation (which is closer to the overall average of 8.6%). This effect is particularly strong in France, Belgium and Latvia. If we focus on the poor segment

[6] The change in poverty rate for private market tenants after inclusion of the in-kind benefit of social housing is due to the increase in median income when moving from cash to extended income.

of reduced rent tenants, then the effect is also very strong. Still, the share of 'overburdened' individuals remains high among this group (with 30.1%; without social housing it would be 60.5%).

5 Housing benefit vs. social housing – the case of Germany

So far we looked at the impact of the imputed income advantage of social housing on the income distribution alone. This income advantage is, however, only one policy instrument to support tenants, also cash benefits may be in place. And important question, hence, is which public transfer type is more effective in reducing poverty, the direct cash housing benefit or the imputed income advantage of social housing? Germany is an interesting country to present as a case study, as it combines systems of both cash housing benefits and social housing, whereas many other EU countries rather focus on either of the instruments (or none). Moreover, the micro data from the German socio-economic panel study (SOEP) allow for more detail and for an analysis over a longer time span of almost 30 years. The SOEP is a representative panel survey of persons living in private households in Germany which started in 1984 and collects information on a wide range of socio-economic indicators on an annual basis since then (Wagner *et al*. 2008). The advantage of the SOEP compared to EU-SILC is that more detailed information about the housing situation, the receipt of benefits and time-series information is available. In particular the group of tenants with reduced rent can be differentiated in those living in renting accommodation provided by an employer and those living in social housing. Using SOEP data we show in a more in-depth analysis the differences between direct cash transfers in the form of housing benefits and in-kind subsidization in the form of social housing exemplary for Germany. Note that the distributive effect of housing benefits may be overestimated, if landlords discount the housing benefit to some extent in rents; this means that part of the allowance might 'leak away' to the landlords and that part of it is in fact spent on a higher rent.

5.1 Social housing and housing benefits in Germany

As discussed in section 2, social housing usually refers to housing which is owned and supplied by public authorities, which can be the state, but also independent organisations, such as housing associations. However, Germany deviates from this practice, given that not only public authorities can supply social housing but also private landlords. Private landlords in Germany can apply for subsidies for constructing private rented housing, which can be used primarily for construction costs and mortgages at a discount. In return they are obliged to rent out their dwellings below market rents for a fixed period (usually about 15 years; after the landlords have paid back all subsidies they

are obliged to rent out the dwellings for an additional 10 years below the market rent). A prevalent motivation for social housing in Germany was the high number of displaced persons after World War II and the associated housing shortage. In the 1960s and 1970s social housing was primarily build by municipalities; from the 1980s onwards private landlords where also allowed to build social houses. While in 1987 3.9 million units of social housing were promoted, this declined to 2.1 million in 2001 (the total number of private households in Germany is about 41 million in 2013, whereas 57 percent or roughly 23 million are tenant households, see Federal Statistical Office 2015a). The 2002 law on social housing aimed to reduce this transfer type. Since then the number of social housing tenants continuously decreased by about 100,000 units per year.

The number of individuals living in social housing has also heavily decreased in SOEP in the last 15 years. While in 1995 about 3.5 million persons lived in social housing the respective number shrunk by more than 60 percent to only 1.3 million in 2011. When it comes to the number of recipients of housing benefits, one can observe a similar trend: since 1995 a decrease of more than 40 percent took place to about 3.2 million individuals living in recipient households. According to the German social protection law, housing benefit can be claimed by a single person even if other household members are living in the same dwelling. Thus, based on a household panel such as the SOEP it is not possible to restrict the population of interest to recipients only. This is also a reason why official register data show a pronounced lower number of households receiving housing benefits in Germany. Housing benefit can be claimed by tenant households, but also owner-occupiers in financial need are eligible for this transfer. In practice, more than 90 percent of all recipient households are tenants (Federal Statistical Office 2015b).

The mean housing benefit is roughly 130 Euro/month. The amount depends on the number of eligible household members, living space, gross rent without heating costs and income. A one-person household usually receives about 110 Euro/month housing benefit in 2011. This nearly doubles to 207 Euro for a two-person household and then decreases with more household members – presumably because of additional incomes of other household members. Over the last 15 years, a pronounced increase in the mean housing benefit can be observed until 2005. With the introduction of the unemployment benefit II scheme in Germany at that date, the eligibility rules has been changed, making the access to housing benefit more difficult. Since then the mean housing benefit transfer shrunk to the early 2000s level.

As in section 3, we measure the cash value of the income advantage of social housing on the basis of the opportunity-cost approach (see). A net value of imputed rent for social housing is calculated on the basis of a Heckman regression; the dependent variable is gross rent per square meter (without

heating costs) for renters in the private rental market (Frick and Grabka 2003). The resulting coefficients are applied to all households with below or zero market rents, i.e. owner occupiers, rent-free households, company flats and finally for those in social housing. For the latter three the difference between the estimated coefficients for the mean market rent and the rent actually paid, yields the income advantage from imputed rent (financing costs such as mortgages, depreciation or maintenance which are relevant costs for owner-occupiers do not have to be considered).

The mean value of income advantages from social housing in Germany amounts to nearly 120 Euro/month in 2011, which is similar to direct cash housing benefits. The time trend also follows that of housing benefits, with mean values increasing up to 2005 and then slightly decreasing again. However, before 2005 income advantages from social housing were some 30 Euro/month higher than housing benefits, while after 2005 the mean value is about 15 Euro/month lower (in prices of 2010). This difference can be the result of a different composition of the eligible populations, or changes in the transfer level due to *e.g*. changes in the calculation of housing benefits.

Eligibility rules for housing benefit were changed in 2009, as the income and rent threshold were increased. Consequently, the mean transfer raised from 90 Euro to 140 Euro/month. Still, the two beneficiary groups differ in their composition. While the mean household size is for both groups about three, there are 1.5-times more children in households receiving housing benefits. The average age of the household head and the average length of occupancy are always higher for people living in social housing, given that this transfer type was very prominent before the millennium in Germany and cut since then. Also regional spread differs: the majority of persons living in social housing can be found in West Germany, while the housing benefit is much more relevant in the Eastern part (i.e. a share that is nearly twice as high as in the western part, Federal Statistical Office 2015b). In 2012 3.2% of all private households in East Germany received the benefit, while this was only 1.7% for West Germany. Regarding living space persons living in households receiving housing benefit tend to have a somewhat larger dwelling. However, compared to the mean flat size for the total population, these transfer recipients have only three-quarter of the population mean. The share of individuals living in a household where the head does not have a training qualification is higher for those in social housing, with 53 percent in 2011 compared to 36 percent receiving housing benefit.

Results from a logit regression for the observation year 2012 confirm that there are the two transfer groups are different (Table 9)[7]. The higher the age of the household head the lower is the probability that this household receives housing benefit. The descriptive finding for the region is also confirmed

[7] Both groups can overlap, given that individuals can live in social housing and receive housing benefits. This overlap is, however, limited: about 20 percent for all observation years of those living in social housing also receive a housing benefit with a slight tendency of a decrease for recent years.

with a higher probability for East-Germans receiving housing benefits. Household living in social housing have on average a smaller dwelling. The probability for receiving housing benefits is also increased with the number of children. Housing benefits recipients tend to have a higher probability to live in a building which partly needs to be renovated. Finally, the higher the income the lower is the probability to receive housing benefit compared to those in social housing and thus the lower is the poverty risk rate. This last finding can be interpreted as an indication for the lower accuracy of social housing given that no regular individual means test is needed to profit from this transfer type, while this is the case for the housing benefit (Engels 1984). A motivation for this is that municipalities expressed an intention to mix low income families with families of the middle class in social housing to prevent segregation. However, middle class families are in principle not in need to receive an income advantage of social housing. This was one of the reasons of the significant reduction of this type of non-monetary transfer since 2002.

Table 10: Marginal effects from a logit regression (2012) receiving housing benefits vs. living in social housing

	Coef.	Std. Err.	
age of hh-head	-0.0112	0.005	**
age of hh-head squared	0.0001	0.000	*
West-Germany	-0.2256	0.032	***
size of dwelling in m2	0.0027	0.001	***
occupancy	-0.0006	0.001	
number of hh. members	-0.0219	0.014	
number of children 0-14yrs.	0.0907	0.015	***
income poor	0.1773	0.039	***
log(post-gov. income)	-0.1071	0.053	**
condition of the building, in good condition (RF)			
partly in need of renovation	0.0921	0.027	***
in need of renovation	-0.0808	0.044	*
no training degree	-0.1486	0.027	***
Pseudo R2	0.2757		
N of obs.	1088		
Log likelihood	-45.91		

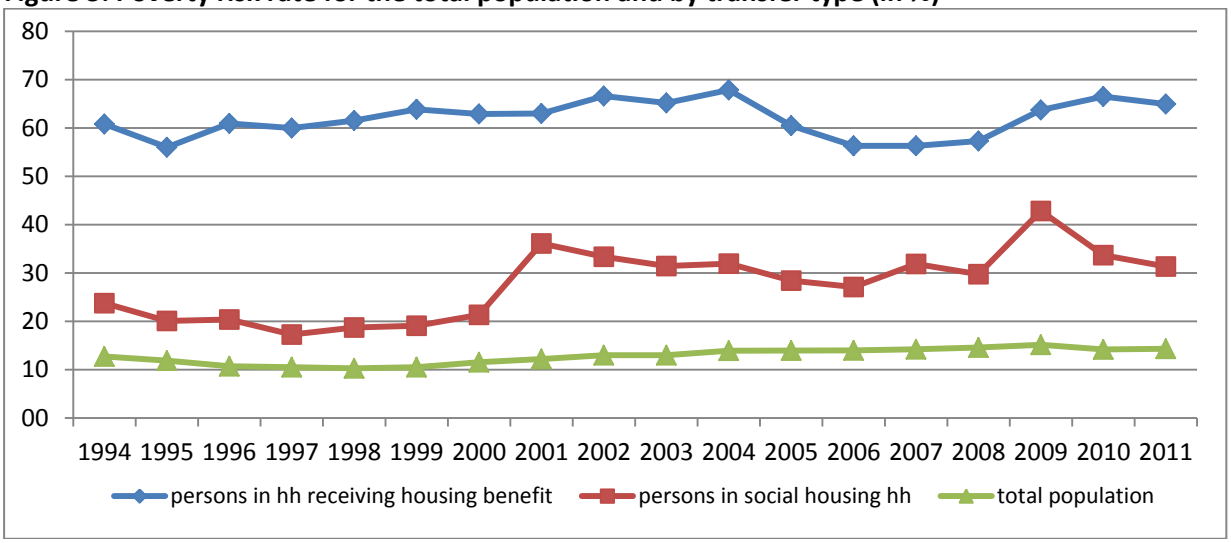
Source: SOEPv29, persons living in private households. Significance level * (<0.1), ** (<0.5) and *** (<0.01)

5.2 Distributive outcomes of cash and in-kind housing benefits in Germany

The poverty risk rate (having less than 60 percent of median equivalized disposable income) is about 14 percent for the total population in 2011 based on SOEP (Figure 3). Here again the two groups of transfer recipients differ. While the poverty risk rate is 31 percent for those living in social housing, the respective share is far higher with 65 percent for those receiving housing benefits. This reflects the better income position of those living in social housing. The mean annual post-government

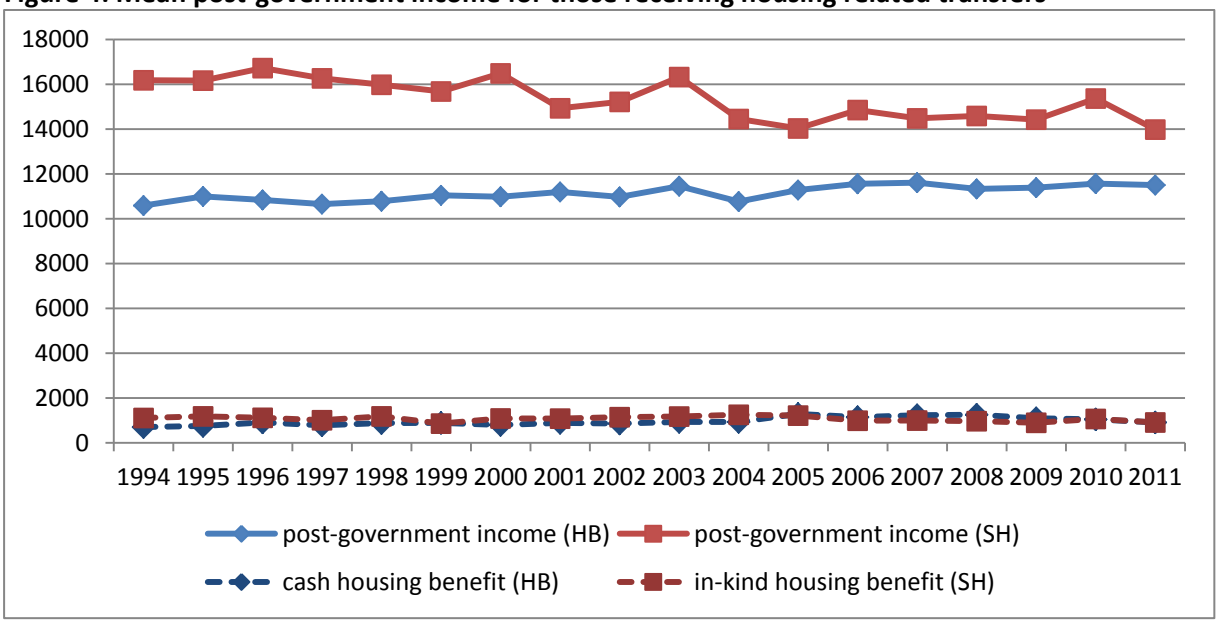
income (including the in-kind benefit from social housing) for those living in social housing is in all observation years at least 20 percent over the respective value for those receiving housing benefits (Figure 4). This can either be the result of a higher relative share of East Germans receiving housing benefits while the income level for all East Germans are still lower than in the western part, or it could also be the result of the lower accuracy of social housing.

Figure 3: Poverty risk rate for the total population and by transfer type (in %)



Source: SOEPv29, persons living in private households. Income years are presented.

Figure 4: Mean post-government income for those receiving housing related transfers

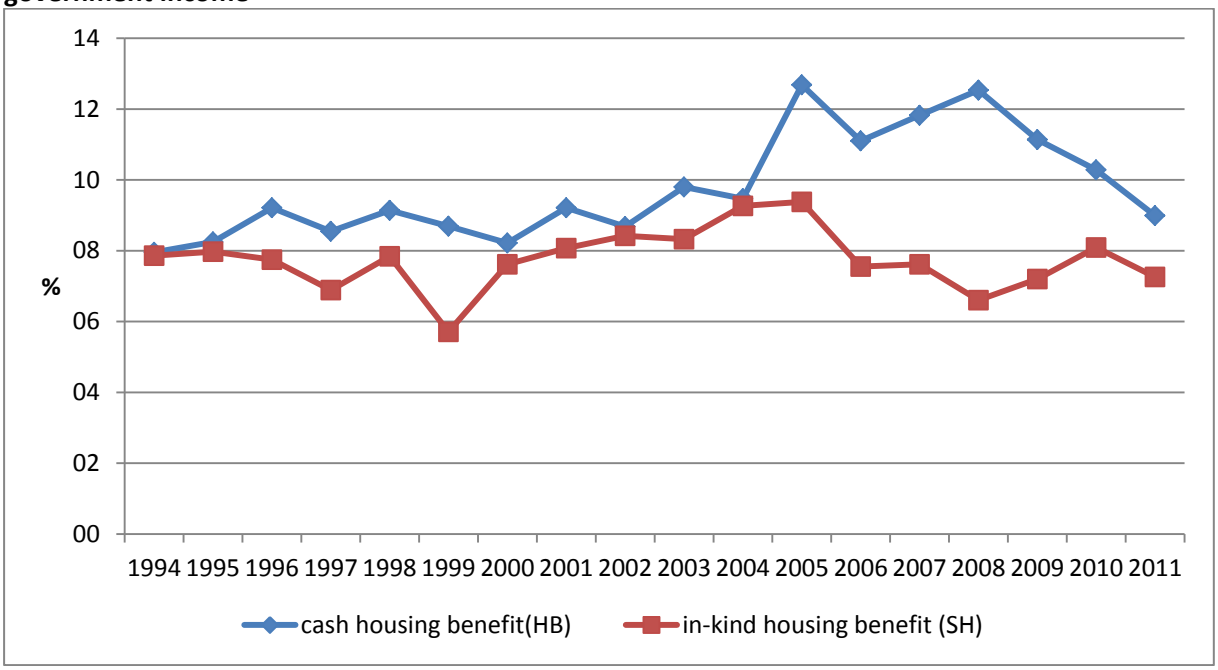


Source: SOEPv29, persons living in private households. Income years are presented

The mean income advantage from the two transfer types is rather similar. However, before 2005 the mean value for housing benefits was somewhat smaller than that from social housing and since then this has been reversed. Thus, the share of the respective transfer of post-government income is

roughly 10 percent over all observation years for housing benefit and about 8 percent for social housing (Figure 5). In the last four years this share has dropped for housing benefits which is the result of changes in the underlying eligibility rules.

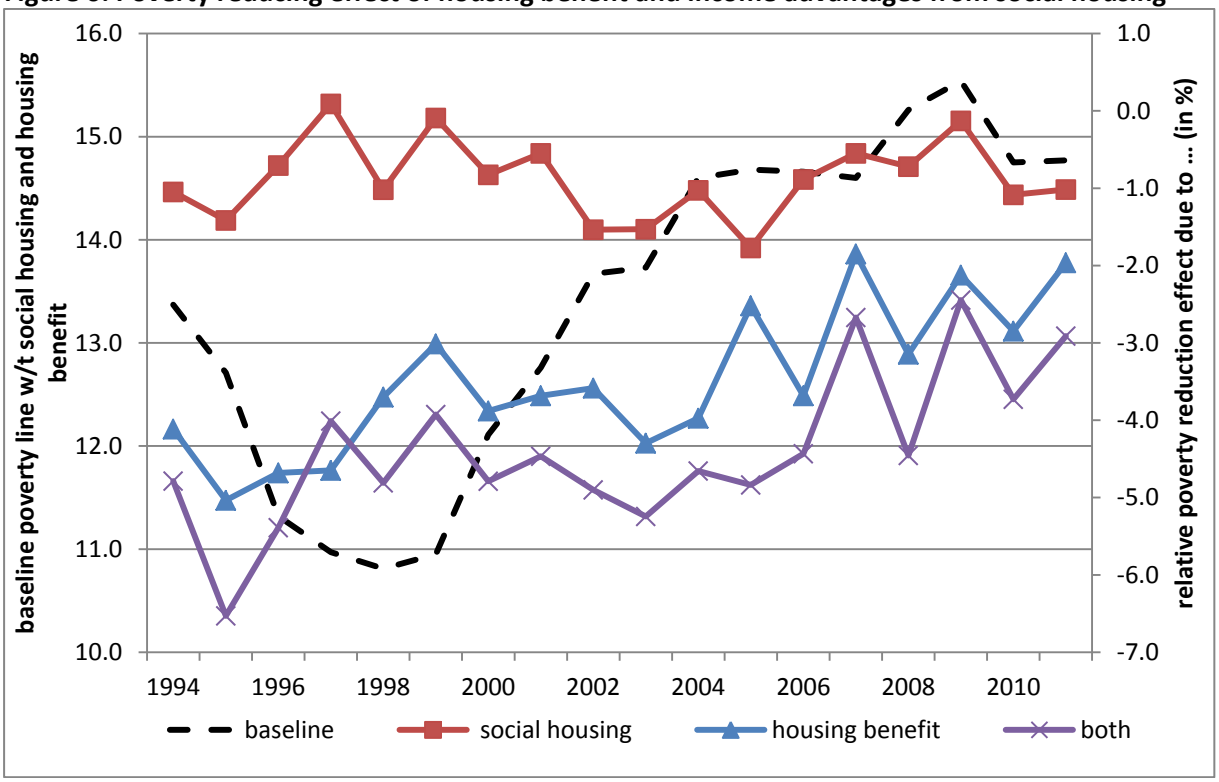
Figure 5: Housing benefit and income advantages from social housing as a percent of post-government income



Source: SOEPv29, persons living in private households. Income years are presented

Given the larger relevance of housing benefit one would also expect a more pronounced poverty reducing effect of this transfer type. In Figure 6 we show at first the baseline poverty rate based on post-government income without housing benefit and the imputed income advantage from social housing (dashed line). Here we find the well-known pattern of a strong increase of relative income poverty since 1999 from 11 percent to more than 15 percent in 2009. As expected the poverty reducing effect from social housing is smaller than for housing benefits. For social housing we observe a poverty reduction effect of about one percentage point for all observation years. For housing benefit this impact was 4-5 percentage points in the mid 1990's and since then decreased to about 2-3 percentage points. Again the stronger poverty reducing effect is the result of a higher targeting accuracy of this transfer type, given that only persons in need are eligible for this financial aid.

Figure 6: Poverty reducing effect of housing benefit and income advantages from social housing



Note: Baseline poverty rates are presented on the left hand axis, while the effect on relative poverty is given on the right hand axis.
Source: SOEPv29, persons living in private households. Income years are presented

The basic same finding is on hand when it comes to the inequality reduction effect for the two transfer types (Table 11). Again the reduction effect if stronger for housing benefit than for social housing as measured by the Gini and the MLD coefficients. The inequality reduction effect is more pronounced when making use of the MLD, given that this coefficient is more reactive to changes in the bottom half of the distribution. However, the time trend differs from the findings of the poverty reduction. While social housing showed a rather stable poverty reduction effect over time, both social housing and housing benefit lost ground in their magnitude in reducing income inequality. This is the result of a general strong increase of income inequality in the baseline income concept, thus the two transfer types are less effective in reducing overall inequality.

Table 11: Inequality reduction effect of housing benefit and income advantages from social housing

	Gini				MLD			
		inequality reduction in % points				inequality reduction in % points		
	baseline	social housing	housing benefit	both	baseline	social housing	housing benefit	both
1994	0.263	-0.4	-1.0	-1.4	0.124	-1.3	-3.5	-4.7
1995	0.258	-0.5	-0.9	-1.4	0.118	-1.3	-3.3	-4.4
1996	0.253	-0.4	-1.1	-1.4	0.112	-1.3	-3.3	-4.4
1997	0.252	-0.4	-0.9	-1.3	0.111	-1.0	-1.9	-2.7
1998	0.253	-0.4	-1.0	-1.4	0.111	-1.0	-3.1	-4.0
1999	0.251	-0.3	-0.9	-1.1	0.107	-0.6	-2.6	-3.2
2000	0.257	-0.3	-0.9	-1.2	0.116	-0.9	-2.7	-3.6
2001	0.261	-0.3	-1.0	-1.3	0.118	-0.9	-3.0	-3.9
2002	0.271	-0.4	-0.9	-1.3	0.127	-1.0	-2.8	-3.7
2003	0.273	-0.4	-1.1	-1.5	0.131	-1.0	-3.3	-4.3
2004	0.278	-0.4	-1.2	-1.5	0.135	-0.9	-3.5	-4.3
2005	0.292	-0.4	-1.0	-1.4	0.149	-1.0	-2.9	-3.8
2006	0.288	-0.3	-0.9	-1.2	0.143	-0.8	-2.5	-3.2
2007	0.289	-0.2	-0.8	-1.0	0.144	-0.6	-2.3	-2.8
2008	0.286	-0.2	-0.9	-1.0	0.141	-0.3	-2.8	-3.1
2009	0.286	-0.1	-0.7	-0.8	0.142	-0.4	-2.2	-2.6
2010	0.282	-0.2	-0.6	-0.8	0.138	-0.5	-1.9	-2.3
2011	0.288	-0.2	-0.5	-0.7	0.142	-0.6	-1.3	-1.9

Source: SOEPv29, persons living in private households. Income years are presented

6 Conclusion

In this paper we have argued that it is important to account for the in-kind benefit households derive from social housing. Firstly, there are theoretical reasons: in-kind benefits also influence the living standards of households and, hence, should be accounted for. Moreover, when comparing policy efforts across countries, taking only account of cash spending might give a misleading picture. This does not only apply for social housing, but also for other categories of publicly provided services, such as education, health care and other care services. The case of social housing has remained understudied. We think, however, that this issue is also relevant for this policy domain, as the share of beneficiaries differs considerably across countries. When, for instance, country A heavily subsidizes social housing, whereas country B has no such provision at all, this difference will not show up in traditional income distribution statistics, even though the financial implications for the households in the two countries may differ considerably.

Therefore, we have applied the methodology of imputed rent to derive a measure for the benefit that households derive from publicly provided housing at a below-market rent. For a set of 17 European countries, we have used the opportunity cost approach to estimate impute rent for social

housing. We have studied the distributive implication of including this in-kind benefit in household income. Both in terms of share of beneficiaries as in terms of size, there is considerable cross-country variation. Especially in Belgium, France, Ireland and the United Kingdom, we find sizeable effects on inequality and poverty, as these countries have a relatively high share of beneficiaries, as well as a large difference between private market and social rents. Moreover, beneficiaries are strongly concentrated in the bottom part of the income distribution; interestingly, this is also the case for Luxembourg, the country in our analysis that is characterised as being broad-based (i.e. not income targeted). In terms of at-risk-of-poverty, the gap between social renters and the rest of the population is considerably reduced when accounting for this in-kind benefit. These results indicate that social housing is indeed relevant for poverty research, and we recommend to take this in-kind benefit into account in future poverty studies.

In a country case study we put the in-kind benefit of social housing into perspective by comparing it with its cash counterpart, notably housing benefits. Germany is a country in which both transfer types of direct cash housing benefits and social housing are prevalent. We showed the incidence and relevance of cash and in-kind housing benefits. The prevalence of both transfer types has declined in Germany over the last decade, due to various legal changes. The mean amounts of both transfers are rather similar, but the housing benefit has a higher weight in post-government income (about two percentage points higher); this indicates housing benefits recipients are on average worse off than social housing beneficiaries. It also points to the higher targeting accuracy of housing benefit given that regular individual means tests have to be passed in order to be eligible for this transfer, which is not the case for social housing. Here eligibility is only checked when a household first moves into the house, but not regularly afterwards. Thus the mean post-government income for those living in social housing is significantly higher than for those receiving housing benefits. Hence, the poverty reducing effect of housing benefit is more pronounced. This lesser targeting efficiency is one of the reasons why the promotion of social housing has strongly reduced in Germany.

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ImPRovE: Poverty Reduction in Europe. Social Policy and Innovation

Poverty Reduction in Europe: Social Policy and Innovation (ImPRovE) is an international research project that brings together ten outstanding research institutes and a broad network of researchers in a concerted effort to study poverty, social policy and social innovation in Europe. The ImPRovE project aims to improve the basis for evidence-based policy making in Europe, both in the short and in the long term. In the short term, this is done by carrying out research that is directly relevant for policymakers. At the same time however, ImPRovE invests in improving the long-term capacity for evidence-based policy making by upgrading the available research infrastructure, by combining both applied and fundamental research, and by optimising the information flow of research results to relevant policy makers and the civil society at large.

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> How can social cohesion be achieved in Europe?
>
> How can social innovation complement, reinforce and modify macro-level policies and vice versa?

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