HERMAN DELEECK
CENTRE FOR SOCIAL POLICY

Sarah Marchal & Wim Van Lancker

The measurement of targeting intentions in complex welfare states: a proposal and empirical applications

WORKING PAPER

No. 18.01

January 2018

University of Antwerp
Herman Deleeck Centre for Social Policy
centrumvoorsociaalbeleid.be

The measurement of targeting intentions in complex welfare states: a proposal and empirical applications

Sarah Marchal - Herman Deleeck Centre for Social Policy (sarah.marchal@uantwerpen.be)

Wim Van Lancker - Herman Deleeck Centre for Social Policy & Centre for Sociological Research, University of Leuven (wim.vanlancker@kuleuven.be)

Working Paper No. 18/01

January 2018

ABSTRACT

The extent to which welfare states target resources to the poor and the effect this may have on redistribution and public support remains an important question in contemporary social policy and welfare state research. Usually in this line of research, targeting is measured as the extent of transfers accruing to the lowest income groups. Such an outcome measure depends on both policy design and contextual factors, such as the composition of the population. For some research questions however, researchers may want to separate the effect of the design of benefit schemes, i.e. targeting intentions, from the context in which targeting takes place. For instance to assess the effect of policy design on redistributive outcomes, or to track whether policymakers resorted to more or less targeting in their benefit schemes over time. Therefore, in this article we develop an *institutional* targeting indicator that captures the policy intention to target towards the poor. Our indicator summarizes policy design into one parameter, and captures the complexity of benefit design in contemporary welfare states in a meaningful way. Drawing on the OECD Benefits and Wages data that capture the rules and legislation of tax benefit systems, we demonstrate different empirical applications for this indicator.

Keywords: Targeting, universalism, redistribution, policy design, model family simulations, concentration coefficient

1 Introduction

The debate on targeting social welfare is as old as the debate on the welfare state, both in the academic and in the political arena. In their seminal article, Mitchell, Harding, and Gruen (1994) show that the question *how* to distribute social welfare benefits, and to *whom*, dates back to the early nineteenth century. Indeed, the allocation of resources is at the very core of the welfare state. Although the concept of targeting has been defined rather loosely in the welfare state literature, the overlapping consensus is that it concerns the question who should get what and how should they get it? Benefit schemes differ according to their objectives and their underlying logic, yet it is hard to imagine a benefit that is not targeted at a particular category of beneficiaries.

A longstanding question, however, is whether benefit schemes should be targeted by level of income *within* those categories. Here, welfare states tend to differ greatly as the choices with regard to welfare provision made today are path dependent and reflect each country's historical trajectory; the contrast between the 'universal' social-democratic welfare states of the Scandinavian countries and the 'targeted' liberal welfare states in the Anglo-Saxon world being among its most well-known examples. A recent inquiry into the design of child benefit systems, for instance, showed how child benefits are equally spread amongst families with children across the income distribution in Sweden whilst being highly targeted towards low income families in the UK (Van Lancker & Van Mechelen, 2015).

One important piece of the puzzle that is largely missing in the literature on targeting is the question of policy design, i.e. whether benefit schemes are actually *intended* to end up with certain income groups or not. Benefits may appear targeted (or not) because of so-called composition effects: universal child benefits will appear to be targeted if poor families have more children on average, while educational benefits that are intentionally targeted towards low income families may appear to be regressive given the particular composition of the student population. Most studies make abstraction of this fact, and operationalize targeting as the outcome of the redistributive process rather than as the intention built into the benefit program. Whereas this is a valid approach for some research questions, this is not helpful to address the question how policies should be *designed* in order to yield certain redistributive outcomes since composition and design effects are conflated. In this article we propose, discuss, and test a new approach to measuring *targeting intentions* in complex welfare states. In doing so, it is our aim to develop and apply a complementary *institutional* targeting indicator that captures the design of benefits. Such indicator contributes to the literature in three ways: 1) it summarizes policy design into one parameter; 2) it enables to trace important policy changes and trends over time; and 3) it highlights and helps understand the role of policy design in the redistributive process.

The above-mentioned difference between categorical and income targeting on the one hand and between universal versus targeted welfare states on the other, are testament to the conceptual opacity that obfuscates the scientific discussion about targeting. For that reason, we will, first of all, pay due attention to the concept of targeting intentions: what do we precisely mean by it, and how should it be measured appropriately? Second, we will discuss

to what extent a measure of targeting design should be able to meaningfully capture the complexities of different benefit systems. Third, on the basis of a hypothetical income distribution, we will test different approaches towards measuring targeting, and discuss to what extent they fulfil the conditions necessary for being a useful indicator. Finally, we will demonstrate the potential of the proposed targeting indicator on the basis of publicly available datasets.

2 Revisiting an old question: who gets what?

The aim of this study is to construct an indicator to properly measure the targeting intentions built into the benefit systems of modern welfare states. Before doing that, it needs to be strictly defined what we mean by 'targeting intentions'. Four issues are relevant to discuss here. First of all, in the literature the concept of targeting is usually treated in a rather vague way, e.g. it is not always clear how it is distinct from related concepts such as universalism, selectivity or means-testing. In their seminal 1998 article *The Paradox of Redistribution*, for instance, Korpi and Palme consider universalism and targeting as two extremes on one continuum: "whether social policies should be targeted *or* universal, that is, should they be organized for the poor only or should the welfare state include all citizens" (1998: p. 661, our emphasis). In their view, benefit systems are either universal or targeted. Recent studies on the issue, however, define targeting as a feature of benefit systems distinct of universalism (see also van Oorschot and Roosma 2016). Brady and Bostic (2015), Marx et al. (2016) and Van Lancker and Van Mechelen (2015), for instance, argue that benefits can be universal *and* targeted at the same time, echoing Theda Skocpols 'targeting within universalism' (1991). In that view, the opposite end of universalism is selectivity ('who is entitled?') while targeting is about the allocation of resources across those who are entitled ('what do they get?'). Here a distinction is made between entitlement on the hand and benefit amounts on the other. On the one hand, universal benefits cover all citizens while selective system do not cover all of them. It is important to realize that all benefits are selective in one way or the other, since they are usually meant to cover a particular group of citizens such as pensioners, the unemployed, or children. However, if every one of the 'reference group' is covered by the benefit, it is considered universal (Van Lancker et al. 2015). A useful example is that of a universal child benefit system covering all families with children versus a selective child benefit system covering only a selection of the reference group based on certain characteristics, such as working families with children, working families with young children, or low-income families with children. On the other hand, targeting is a continuum ranging from low-income targeting (lower incomes get more) over no targeting (everyone is entitled to equal amounts) to high-income targeting (higher incomes get more). Targeting hence may occur in benefit systems that are either universal or selective in nature. The only issue, however, is that selective systems are always targeted *if* entitlement is restricted to a specific group of people based on income. We will come back to this issue below. Means testing, then, is a means to an end, a way to determine who gets what, not a distinct feature of benefit systems.

Second, targeting is usually regarded an outcome of redistributive process rather than a feature of benefit design. When Korpi and Palme (1998) regarded targeting as being anathema to effective reduction of inequality, they actually meant the systems that *appear* targeted, i.e. the share of transfers that accrue to the lowest incomes. The obvious problem here is that policy intentions do not necessarily match policy outcomes. If all children are entitled to an equal benefit amount, but only low income families have children, than child benefits will appear targeted towards the lowest incomes. The policy design, however, is not targeted. The proper measurement of targeting intentions therefore needs to be isolated from these so-called composition effects.

Third, Barr (2001) identifies two redistributive principles within contemporary welfare states: horizontal redistribution (between groups over the lifespan) and vertical redistribution (from rich to poor). While benefit programs in many cases embody both principles at the same time, it is generally possible to identify a 'dominant logic'. The traditional social insurance programs, for instance, predominantly focus on horizontal redistribution. They aim to smooth consumption over different life phases by insuring against the loss of living standards upon the occurrence of certain social risks that impact on one's market earning potential (Barr, 2001; Bonoli, 2007; Cantillon & Van Mechelen, 2014). A clear example is unemployment insurance, which is usually financed by contributions made during the period of employment and guarantees a benefit in periods of unemployment. A similar logic is observed in disability benefits, pensions, and sickness benefits. In addition to these (often earnings-related) contributory benefits, types of non-contributory benefits may also be founded on such horizontal logic. For instance, child benefits redistribute the costs of raising children over the entire population, hence they redistribute from childless persons to persons with children. In contrast to income replacement benefits, the idea is not to insure against the (potential) loss of market income upon the birth of a child but rather to reimburse (some of) the costs associated with childrearing.

In contrast, programs undergirded by a vertical redistribution logic are designed to redistribute resources from richer to poorer groups. Clearly, means-tested minimum income benefits aim to provide a social floor to the very poor, and they are generally financed through general tax revenues. Also other benefits explicitly entail a vertical redistribution focus, for instance various means-tested cost-compensating measures, such as housing or heating allowances. Yet, also many of the larger social insurance programs incorporate characteristics that ensure that there is some vertical redistribution, for instance through capping the maximum benefit one can receive in an earnings-related benefit. The same is true for child benefits, which often combine benefits for all children with additional allowances for poor families. In addition, in many cases different benefit programs will be relevant at the same time, each one of those with their own main redistribution logic. A measure of targeting intentions hence needs to be able to cope with both contributory and non-contributory types of benefits.

A final, related issue refers to how one identifies the reference group of different benefit programs. In most welfare states, the target population is predominantly based on

categories of people, be it families with children, the elderly, the disabled, etc. This approach is called categorical targeting (i.e. by category), or, in the words of Akerlof (1978) 'tagging'. Alternatively, beneficiaries may be identified based on their income or assets. Public resources are allocated to certain groups in case their income falls short of a certain predefined threshold. In that case a means test is usually applied. Means testing on the basis of income is riddled with difficulties and pitfalls, for instance the issue of how to acquire up-to-date income information and which kind of incomes should be included (Whiteford, Mendelson, & Millar, 2003). For that reason, while policymakers intend to allocate public resources to low income families, they might opt to use categories as proxies for low income families. An example voiced by both Akerlof (1978) and Smolensky et al. (1995) are female-headed households. This is where the blurred lines between selectivity and targeting become relevant. A selective benefit, for instance founded on a particular category of beneficiaries such as single mothers, can be more or less targeted towards lower income groups. Think of additional child benefits for single parents irrespective of their social background, which exists e.g. in Norway, or additional child benefits for single parents living on low incomes, which exists e.g. in Belgium. However, if categories are used as proxies to identify low incomes, selective systems are targeted towards low incomes as well. This implies that while selective systems will be targeted towards lower incomes in many cases, some selective benefits will be more targeted towards lower incomes than others. An indicator measuring targeting intentions should be able to capture these differences in benefit design and to isolate the issue of targeting from the coverage of reference groups.

Given all this, in this paper we will apply the following definition of targeting in order to gauge the vertical redistribution logic of social benefits: *the extent to which benefits are intended to be higher or lower for people with higher or lower incomes*, including both non-contributory and contributory benefits as well as universal and selective systems.

3 Targeting in complex welfare states

Modern welfare states are complex machineries that almost never adhere to a purely horizontal or vertical redistribution logic. In reality, the hybrid nature of benefit systems combines contributory and non-contributory benefits, uses different sources of financing, embodies different objectives, and has elements of horizontal as well as vertical solidarity mechanisms. Since targeting intentions gauge the extent to which benefits are meant to allocate more resources to one income group vis-à-vis other income groups, and are conceptually distinct from universalism and selectivity, an indicator capturing this should also be able to handle the kind of complexities inherent to welfare states.

In table 1, we provide an example of conceivable yet hypothetical benefit designs. Think of the different rows as different households or individuals ranked according to their current income position, with the benefit unit on rank 0 being poorer than benefit unit 1, and so on. In hypothetical country A, each of these benefit units receive a benefit of an equal amount (in casu 50). This is the quintessential example of a universal benefit, where everyone (of the

reference group) is entitled to a benefit and everyone receives the same amount. A common real-world example of such a benefit is a universal child benefit for families with children.

Table 1. Examples of benefit distributions across 11 individuals, ranked from low to high income

Rank	Universal (A)	Selective (B)	Targeting within universalism (C)	Targeting within selectivism (D)	Non-linear targeting within universalism (E)	Non-linear targeting within selectivism (F)	Non-linear targeting within selectivism – bis (G)	Regressive (H)
0	50	50	65	65	10	10	0	10
1	50	50	60	60	10	10	0	20
2	50	50	58	58	50	50	50	30
3	50	0	55	55	40	40	40	40
4	50	0	53	53	30	30	30	40
5	50	0	50	50	20	20	20	40
6	50	0	45	45	10	10	10	40
7	50	0	40	40	10	0	0	40
8	50	0	20	0	10	0	0	40
9	50	0	10	0	10	0	0	40
10	50	0	5	0	10	0	0	40

A targeted benefit on the other hand directs different benefit amounts according to the income situation of a person, household or benefit unit. In Table 1 we present a selection of potential variations in benefit allocation according to income. In country B, the benefit is only awarded to persons under a certain income ceiling. This is what we called supra a selective benefit scheme (and it overlaps with low income targeting). Country C has designed its benefit in such a way that – although everyone receives a benefit – persons with a lower income receive a higher benefit. This is commonly referred to as 'targeting within universalism'. The same is true for country D, although here the highest incomes are excluded from the system. Country H is its antipode, reflecting a regressive benefit system in which higher income groups receive higher benefit amounts. Ideally, we would like our indicator to be able to cope with these different targeting designs. The indicator also needs to take due account of less straightforward benefit systems. In the age of activation, many countries have implemented benefits that increase with earnings up to a certain point only to be tapered away subsequently (countries E and F). Finally, it is perfectly realistic for some benefits to only exist for higher income cases (country G). Often, this is because an additional condition applies that people should be in-work or have a certain level of earnings. Earnings-related tax credits or in-work benefits are a case in point.

To meaningfully summarize and compare intended targeting design across countries, we need an indicator that is able to capture the differences between complex benefit systems in a single metric. Self-evidently, such an indicator also needs to adhere to minimal quality standards. A large body of work on social indicators stemming from the so-called 'social indicator movement' has established the properties a useful indicator of policy should adhere to (e.g. Atkinson et al. 2002; Land 1983). Drawing on this literature, we adopt as a rule that an indicator of targeting intentions should be 1) *comparable* across and within countries over time; 2) *responsive* to policy changes; and 3) have a clear *interpretation*. The

comparability requirement means that the indicator should have exactly the same meaning in different contexts and benefit systems. A value of 0, for instance, should mean the same thing in different context and across different benefit systems. That means, importantly, that the value of the indicator cannot be dependent on benefit levels (see also Moene and Wallerstein 2001). A value of 0 in country X needs to reflect the same extent of targeting as a value of 0 in country Y, *even if* country X is much more generous than country Z. Since it is a policy indicator, it should also properly reflect policy changes. The interpretability requirement means that the indicator must have what Atkinson et al. (2002, p. 21) call 'intuitive validity'. For instance, there should be agreement that a movement of the indicator in a particular direction represents more or less targeting.

4 Choosing an appropriate indicator

In this section we will first review the literature on tax and social policy measurement and subsequently propose a measurement method that is in our view suitable to capture targeting intentions. From the onset it should be clarified that measurement and data are not completely separable. An indicator of targeting intentions must be built on data that captures the design of benefit systems, and is available in a form that resembles our hypothetical income distributions shown in Table 1. So we need to establish the kind of data we need first to subsequently be able to identify a measurement method that is able to summarize that data into one single metric that fulfills the requirements outlined above.

4.1 Institutional data

The assessment of intended policy design builds on institutional data, that capture the applicable institutions and legal regulations. An obvious example of institutional data are descriptions of legal rules, such as those captured in the European Commission's comparative MISSOC database (www.missoc.org), but the format of such data is not readily quantifiable. A common form of quantitative institutional data are model family simulations. These are calculations of the net disposable income of a hypothetical family according to relevant tax benefit rules. As the model family is completely determined by the researcher in line with his or her research question, the resulting income and income components fully capture tax-benefit design. It is an approach that is often applied to compare benefit generosity cross-nationally or over time, as changes cannot be brought back to composition effects, but by definition only reflect actual policy changes. In the literature, this approach is often used to capture the generosity of social protection measures, such as child benefits (Bradshaw & Finch, 2002; Van Lancker & Van Mechelen, 2015), minimum wages (Marchal & Marx, forthcoming) and social assistance (Gough, Bradshaw, Ditch, Eardley, & Whiteford, 1996; Immervoll, 2012; Marchal, Marx, & Van Mechelen, 2016; Nelson, 2013; OECD, 2014). Several institutions already collected model family simulations in institutional datasets that are available to the broader public. Relevant examples include the CSB MIPI data set (Van

Mechelen, Marchal, Goedemé, Marx, & Cantillon, 2011); the SaMIP dataset, (Nelson, 2007); and the OECD Benefits and Wages output (OECD, 2014).

Yet, targeting design is not limited to the net income or generosity of income components in one situation, but refers to how income components are distributed over different income situations. A targeting intentions indicator should hence summarize policy design over a broader income range. Tax design scholars are confronted with a similar problem when aiming to represent the inherent progressivity of tax systems. Early proposals were made by Musgrave and Thin (1948), who discussed the (then) newly revised tax design in the US. They calculated the tax liability of a married couple with 1 child at different points in the income distribution to serve as input to their structural progressivity indicators[1], constructed to evaluate and compare intended tax *rates*. The aim of these indicators was to distinguish between proportional, regressive and progressive tax system designs. Some of the measures they proposed are still being used by the OECD in its annual Taxing Wages report, albeit for a broader range of family types (Joumard, Pisu, & Bloch, 2012; OECD, 2015; Paturot et al., 2013).

4.2 Measuring policy design

Examples of indicators that aim to summarize the overall design of *benefits* rather than taxes are relatively scarce. Two recent examples are provided by Joumard et al. (2012). They present a progressivity index for pensions, that builds on future pension payments simulated on current personal gross earnings (see also OECD 2011, p. 138). The progressivity index of pensions is then calculated as 100 – 100 times the ratio of the Gini index of these simulated future pension payments to the Gini index of current personal gross earnings. The calculations are based on the current pension rules. A value of 100 indicates that the pension system is a flat basic pension, which is considered to be the most progressive pension system. They also developed an indicator that measured the progressivity of unemployment benefits. For this, they compare the net replacement rates of low (earning 67% of the average wage) and high (earning 150% of the average wage) income earners. The larger the difference, the more progressive they deem the unemployment benefit system.

In a recent paper, Nelson, Bäckman, Doctrinal, and Sirén (2016) also focused on the progressivity of unemployment insurance replacement rates. They calculated the theoretical replacement rates for a hypothetical single person with former incomes ranging from 50 to 100% of the average wage. Consequently, they calculated the concentration coefficient of these replacement rates over former incomes (i.e. 50 – 100 % of the average wage, by 1

[1] As opposed to the effective progressivity indicators, that take account of the income distribution on top of the tax rate structure that is captured in the structural progressivity indicators. As effective progressivity indicators are best suited to measure the overall progressivity outcomes of the tax benefit system, some authors have doubted the usefulness of these structural progressivity indicators, arguing they are superfluous: "*I doubt if it is at all practicable to construct a single measure of progressivity of a causal tax schedule which generally includes several rebates and deductions in addition to marginal tax rates in different income brackets" (Kakwani, 1986)*. The OECD argues that structural progressivity indicators are needed as they allow to assess the progressivity of certain taxes in isolation, and precisely because they provide estimates of progression rates along the income scale. Finally, they can help to standardize cross-country comparisons (Paturot, Mellbye, & Brys, 2013).

percentage point increments) in order to assess the extent to which replacement rates are equally guaranteed. The concentration coefficient is a commonly used metric to measure targeting outcomes, i.e. the extent to which benefits end up among lower ranked income groups (for a famous application: see Korpi and Palme (1998)). In contrast to these progressivity measures, that focus on tax or replacement *rates*, we would like to distinguish between universal or targeted benefit *amounts*, which aligns with our definition of targeting intentions, i.e. the extent to which benefits are intended to be higher or lower for people with higher or lower incomes.

Studies that aim to operationalize targeting in line with this interpretation are scarce. Jacques and Noël (2015) recently proposed to take the share of means-tested benefits in total benefit receipt as an imperfect proxy of the targeting design of benefit schemes, but as mentioned above, such an operationalization does not solely capture intended targeting design, but also socio-economic and demographic context. A different proposal was made by Van Lancker and Van Mechelen (2015). They aimed to measure the targeting design of child support packages. The indicator (henceforth TIVLVM) captures the average percentage increase in child support for a model family with a lower income vis-à-vis the same model family with a higher income.

Specifically, the indicator was calculated as

$$TIVLVM = 1 - \frac{1}{n}\sum_{i=1}^{n}\frac{x_i}{x_{i+1}}$$

with x_i the child benefit package in the lower income case, and x_{i+1} the child benefit package in the higher case. TIVLVM hence shows the percentage a child benefit package to a lower ranked family is on average higher (or lower) than for a higher ranked family. The indicator was subtracted from 1 in order to obtain negative values for targeted benefits and positive values for benefits targeted to higher incomes. A value of zero refers to a benefit where every family receives the same amount (a universal benefit).

Van Lancker and Van Mechelen (2015) based their indicator on model family simulations of net disposable income and its components for a specific household type at four different points in the income distribution (no income, at minimum wage, at average wage, at double-earner average wage). The clear advantage of this indicator is that data requirements are relatively limited, although there are obvious risks to basing an assessment on a limited number of cases. More importantly, its interpretation is very straightforward. Unfortunately, the indicator cannot cope with selective benefits, as targeting is always expressed as a percentage of benefit amounts higher up in the income distribution. This necessarily assumes that higher incomes will still receive benefits, an assumption that is far from plausible for a number of benefit schemes.

4.3 A versatile institutional targeting intentions indicator

From the above, it is clear that – at least to our knowledge – there currently is no targeting intentions indicator that copes with the complexities of the hypothetical world outlined in Table 1. In this paper we propose to apply the concentration coefficient (Kakwani, 1977) on institutional data, and assess whether such measurement method has the potential to serve as an indicator of targeting intentions. Nelson et al. (2016) already proposed to use the concentration coefficient on replacement rates of hypothetical single person households. Rather than assessing progressivity, we want to assess whether a concentration coefficient applied on institutional model family simulation data will meaningfully gauge the extent of targeting in different benefit systems, and capture the difference in the strength of targeting across countries.

In essence, a concentration coefficient offers a measure of the extent to which benefits end up with richer or poorer entitlement units. Institutional data, that capture how a tax benefit system is designed to work, regardless of contextual factors, allow to assess the extent to which benefits are intended to end up with richer or poorer entitlement units. Formally, the concentration coefficient is expressed as follows:

$$TI_{CC}(B,Y) = -2Cov(\frac{B}{\mu(B)}, (1 - G(Y))$$

with benefit B, income distribution Y and G(Y) the cumulative distribution function of Y. Graphically, the concentration coefficient measures the surface between the cumulative distribution function of benefits over the income distribution, and the 45° line, where every entitlement unit receives the same benefit amount. As long as it is calculated on positive values, the concentration coefficient assumes values between -1 and 1. A value of -1 implies that the poorest entitlement unit in the income distribution receives all the benefits, whereas a value of 1 indicates that all benefits are targeted at the richest entitlement unit. A value of zero indicates that the cumulative distributive function of a benefit coincides with the 45° line, or that there is no association between the benefit amounts and the entitlement unit's place in the income distribution. In other words, every entitlement unit receives the same benefit amount; it is not targeted.

In Table 2, we calculate the concentration coefficient for each of the targeting designs discussed in Table 1, and assess whether it is indeed in line with our requirements of summarizing targeting intentions. We also compare the concentration coefficient with the targeting indicator proposed by Van Lancker and Van Mechelen, discussed above. Clearly, the concentration coefficient has a number of important advantages. The universal benefit is identified as such, with a concentration coefficient equal to zero. The selective system has the lowest value, at -0.8, whereas the regressive system shows a positive value for the concentration coefficient, indicating that higher ranked benefit units receive higher benefit amounts. Also for the other, more complex systems, the values of the concentration coefficient align with our intuitive assessment of more or less targeted systems. Importantly, as it is a measure of association, it is able to handle non-linear targeting. In contrast to the VLVM indicator, it can handle targeting within selective systems.

Table 2. Examples of benefit distributions across 11 individuals, ranked from low to high income

Rank	Universal	Selective	Targeting within universalism	Targeting within selectivism	Non-linear targeting within universalism	Non-linear targeting within selectivism	Non-linear targeting within selectivism – bis	Regressive
0	50	50	65	65	10	10	0	10
1	50	50	60	60	10	10	0	20
2	50	50	58	58	50	50	50	30
3	50	0	55	55	40	40	40	40
4	50	0	53	53	30	30	30	40
5	50	0	50	50	20	20	20	40
6	50	0	45	45	10	10	10	40
7	50	0	40	40	10	0	0	40
8	50	0	20	0	10	0	0	40
9	50	0	10	0	10	0	0	40
10	50	0	5	0	10	0	0	40
VLVM	0		-0.35		-0.13			0.11
CC	0	-0.8	-0.28	-0.37	-0.19	-0.40	-0.33	0.14

In sum, we argued that a targeting intentions indicator should be comparable across countries, responsive to policy changes and intuitively interpretable. We demonstrated that the concentration coefficient calculated on institutional data captures policies in a satisfying and understandable way. Even though it is less intuitive than some of the other measures discussed above, values can be compared across countries with the same distribution, and rankings are in such a case meaningful. In addition, the concentration coefficient is widely used as a measure of targeting outcomes. In this sense, its application on institutional data in order to capture targeting intentions is a logical step.

5 Applications using real-world data

5.1 Data

In order to summarize targeting design, we first need data that reliably capture the design of benefit systems in the form discussed above. Here we use the OECD Benefits and Wages output data to assess differences in targeting design across countries, between benefit schemes and over time (http://www.oecd.org/els/soc/benefits-and-wages-country-specific-information.htm). The OECD Benefits and Wages model family simulation model allows to calculate net disposable income and income components for model families who are entitled to contributory unemployment insurance benefits (for different levels of prior earnings), to non-contributory benefits, or a combination of both. A major advantage of the OECD data over other institutional datasets is that it covers all OECD countries and EU

Member States over a long period of time. Most countries are covered since 2001, with the exception of more recent OECD member countries.

The output data, which are freely available, contain the amounts of net disposable income and its different components, for various family types and with the model family making the transition from a gross income equal to 0 % of gross average wage to 220%, by a 1 percentage point increase at each step. This amounts to a highly stylized (and unequal) gross (before taxes and benefits) income distribution with a gini coefficient equal to 0.93 that is the same for all countries and years[2]. This income distribution is limited to 220% of gross average wage. It hence excludes higher incomes that may – at a household level, in times of double-earnership – be quite common. Model family simulations by definition do not give a representative view of a country's population. Since it is our express aim to eliminate composition effects (and hence to capture targeting intentions rather than targeting outcomes), we do not consider this problematic. Yet a common critique on the use of model family simulations is that their limited representativeness may well make them superfluous, and conclusions based on them can be faulty, as they are driven be a selected family case that may be not at all relevant in a country. In the appendix we therefore show to what extent this stylized income distribution aligns with each nation's actual distribution. In all but one country more than two thirds of persons fall within the range of the fictional distribution of the OECD dataset.[3]

In what follows, we show the results of four empirical applications. The purpose is to assess whether the concentration coefficient applied to institutional data reliably gauges targeting intentions in complex welfare states, to what extent it is useful to understand differences in targeting intentions over time and between countries, and whether it is able to properly summarize policy design into one parameter.

[2] All gini coefficients and concentration coefficients reported in this paper are calculated with Van Kerm's (2009) sgini command for stata.

[3] A further caveat is that we limit ourselves to very few model families. Alternatively, one could aim to align simulated data more to the real socio-economic and demographic situation in each country, or, if one wants to eliminate composition effects, to use a real/realistic population as input for detailed policy simulations with a micro simulation model, such as EUROMOD. Keeping this population constant between countries and over time should also allow to disentangle targeting intentions. (An example can be found in OECD, 2011, where the progressivity of pensions is assessed by simulating national pension policy on the OECD average income distribution.) In se, the problem remains the same: the selected population still brings its own composition effects, and will be more realistic for one country than for another. Focusing on the highly stylized OECD distribution that we use in this paper has the advantage of transparency and simplicity, with freely available data, at the cost of more realistic and representative data.

5.2 Application 1: Targeting design of non-contributory benefits in OECD countries, 2013

We begin with a straightforward approach to measuring targeting intentions by focusing on non-contributory benefits. Since these benefits are not related to previous earnings, the amounts given to different income groups are a clear expression of targeting intentions. In contrast, the benefit amounts in contributory schemes are usually tied to previous earnings, which makes it more complex to interpret targeting intentions. In the fourth application further below, we discuss the interpretation of targeting intentions for contributory benefit schemes.

The benefits included are social assistance benefits for working-aged families, housing allowances, child benefits and in-work benefits. We focus on one model family in our calculations: a couple with two children (aged 6 and 10). More information on the OECD model and outcome data can be found in OECD (2016). Finally, it is important to note that many countries have implemented tax credits that are awarded as a monthly cash transfer, for all intents and purposes resembling a cash benefit. It is not always clear how one should include and distinguish between genuine tax credits and other social tax measures, such as tax allowances, and benefits, nor is it consistently clear where tax credits are included in the OECD model. For instance, the US earned income tax credit is categorized as an in-work benefit whereas other refundable income taxes are included under the income tax variable, effectively turning the amount of payable taxes negative for low income households. Here we follow the approach of the OECD, and treat the amounts classified by the OECD as in-work benefits as a benefit.

As one of the most common benefits, we first turn our attention to child benefits. Next, we include social assistance benefits, housing allowances and in-work benefits. In doing so, we aim to assess to what extent welfare states target different benefits, and whether there are obvious differences between schemes.

5.2.1 Child benefits

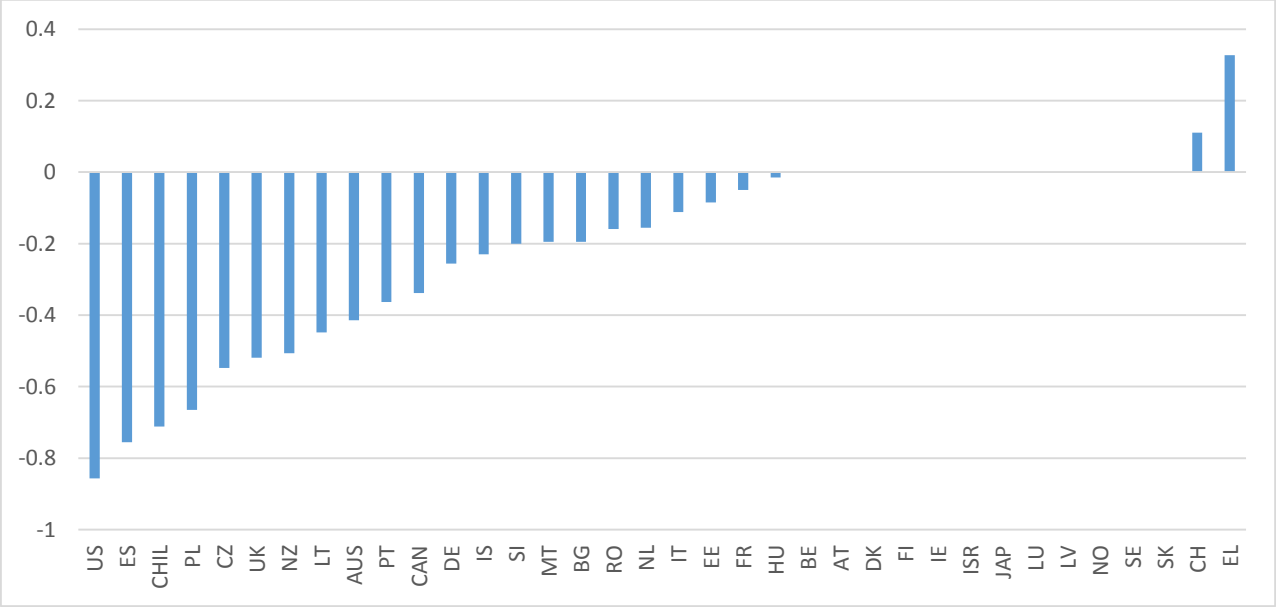
Figure 1 presents the concentration coefficients of child benefits received by a couple with 2 children aged 6 and 10. Targeting intentions vary strongly across countries, ranging from -0.86 in the United States[4], to 0 in Austria, Belgium, Denmark, Finland, Ireland, Israel, Japan, Luxembourg, Latvia, Sweden, Norway and Slovakia, and an exceptional 0.33 in Greece. Hence our indicator identifies ten of the countries in our sample as countries with a universal child benefit scheme. Furthermore, our measure indicates that in the large majority of countries child benefits are targeted to some extent, with exceptionally large values in the United States, Spain, Chile, Poland, the Czech Republic, Lithuania, the UK[5] and New Zealand. These assessments align with our knowledge of the child benefit schemes in these individual countries. That the Scandinavian countries appear to have a universal child

[4] We follow here the assessment of the OECD, where Temporary Assistance to Needy Families (TANF) is considered to be a child benefit as access is heavily conditioned on the presence of children in the household. Alternatively, the TANF can be considered to be a means-tested social assistance benefit for families with children.
[5] Again, we follow the OECD classification that includes the child tax credit under family benefits.

benefit comes as no surprise. Similarly, in Belgium, the child benefit system in 2013 was universal in design with only limited social supplements for certain *categories* of beneficiaries, such as the long-term unemployed or lone parent families. Highly targeted benefits in particular Eastern European countries, the US and the UK are equally unsurprising. The Greek child benefit scheme registers as regressive as in the underlying data, the family benefit increases with income, both nominally as relative to the earned income. Greek child benefits are indeed supplemented by employers in line with the gross salary. A similar case presents itself for Switzerland, where only employed persons are entitled to child benefits, funded by employers (for the unemployed, cash support for families with young children is covered through different benefits).

Broadly speaking, the targeting intentions measure calculated on the allocation of child benefits over a fictional distribution of a model family does seem to represent the policy design of child benefits in a satisfactory way. The distinction between universal, targeted and regressive benefits is clear. Yet what is the exact targeting design behind these summary values? In Figure 2, we zoom in on the cases of Germany, Finland and Portugal, with respective targeting design indicators of -0.26, 0 and -0.36. Our targeting indicator hence identifies Finnish child benefits as being universal, Germany as having a child benefit system that is slightly targeted towards lower incomes, and Portugal as having a child benefit system that is more strongly targeted towards lower income incomes. In figure 2, we show the child benefit relative to the annual gross average wage at each income level. It is immediately clear that benefit generosity differs substantially between the three countries. However, in this paper we are not interested in measuring the generosity of child benefits, but in the way the resources are allocated over income groups.

Figure 1. Targeting design of child benefits for a couple with 2 children, over income range 0 – 220 % of gross average wage, 2013, OECD countries

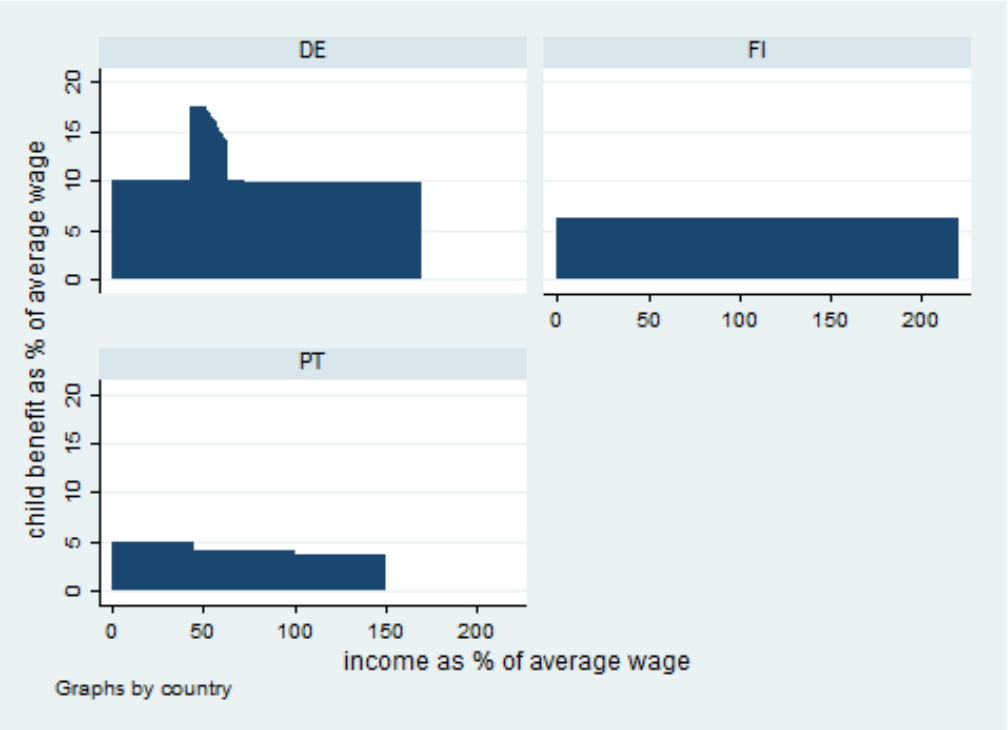


Note: no child benefits in Korea (KOR) and Turkey (TUR).

Source: own calculations on the OECD Benefits and Wages output data

In line with the values shown by the institutional targeting indicator, differences in targeting are quite pronounced. In Finland, regardless of the position in the stylized income distribution, the intended benefit amount is the same. Finland has a universal child benefit system akin to the hypothetical system A in table 1 . In Portugal, however, child benefits are selective, and within the eligible income range still vary with incomes. The stacked distribution clearly indicates the used income thresholds in the definition of the benefit level according to the legal rules. Finally, Germany is somewhat of a special case. Child benefits are selective, bar for a limited income range around half of the gross average wage. This shows the *Kinderzuschlag*, a benefit that was introduced in 2005 in order to support parents who would be able to secure their own livelihood without the need for social assistance, where it not for the presence of children in the household. The targeting indicator does cope with this non-linearity, and identifies the German child benefit system as a targeted scheme with a concentration coefficient of the benefits depicted in figure 1 of -0.26. Of course, a value of -0.26 might also refer to a linearly, but less steeply targeted benefit. Some background knowledge of the system therefore remains – self-evidently – necessary.

Figure 2. Distribution of child benefits over stylized income distribution: couple with two children, gross income ranging from 0 – 220% of gross average wage, in 1 ppt intervals



Source: own calculations on the OECD Benefits and Wages output data

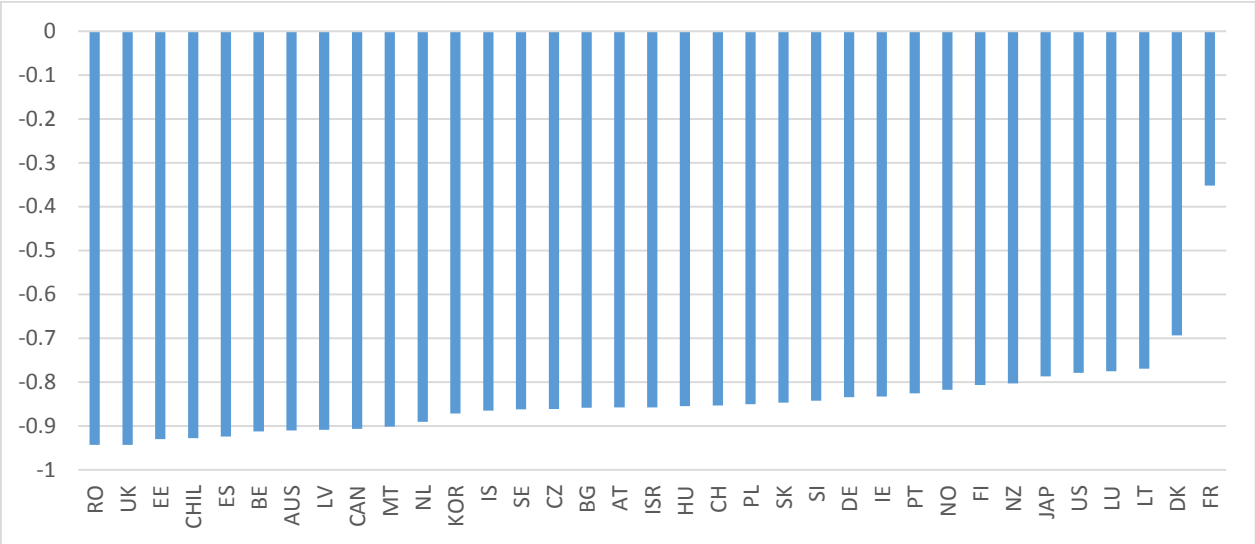
5.2.2 Social assistance and housing allowances

Although also being non-contributory, social assistance benefits have an entirely different underlying logic than child benefits. Whereas child benefits mainly serve to aid in the costs of raising a child, social assistance benefits aim to guarantee a minimal living standard to the

poorest in society. In essence, it is a benefit scheme built around vertical redistribution, with (sometimes very strict) means-tests to identify the poorest families.

This is clearly reflected by our targeting design indicator showing that social assistance benefits are strongly targeted towards the lowest incomes (see figure 3). Social assistance benefits can only to a limited extent be combined with an income from work, although nowhere does the targeting design indicator show a value of -1, which would mean that only one model family with absolutely no income from work receives a social assistance benefit, and the model family with an income of just 1 % of the average wage higher not. Yet the targeting design indicator clearly points to only limited earnings disregards in most countries. A clear exception is the situation in France. In its 2009 social assistance reform, one of the explicit aims was to integrate the working poor in the social assistance scheme. The *revenu de solidarité active* hence introduced a substantial earnings disregard (Anne & L'Horty, 2008; Hirsch, 2008), which is reflected in our targeting indicator. In 2016, this measure was revised due to low take-up among the working poor, and integrated with a former working tax credit into a separate in-work benefit, the *prime pour l'activité*. Also in a number of other countries, earnings disregards and back to work bonuses ensure receipt of social assistance benefits (at least to former recipients transitioning from social assistance into employment) up somewhat higher in the income distribution. The main income protection measure in the US (apart from the Temporary Assistance to Needy Families, included as child benefit) is SNAP, the supplemental Nutrition assistance program, that gives food stamps to low income families. The value of these food stamps is included in figure 3. These food stamps can be combined with a low income from work. In fact, many working families are entitled to food stamps, yet the scheme is confronted with large non-take-up rates among working families (Services, 2010).

Figure 3. Targeting design indicator of social assistance benefits

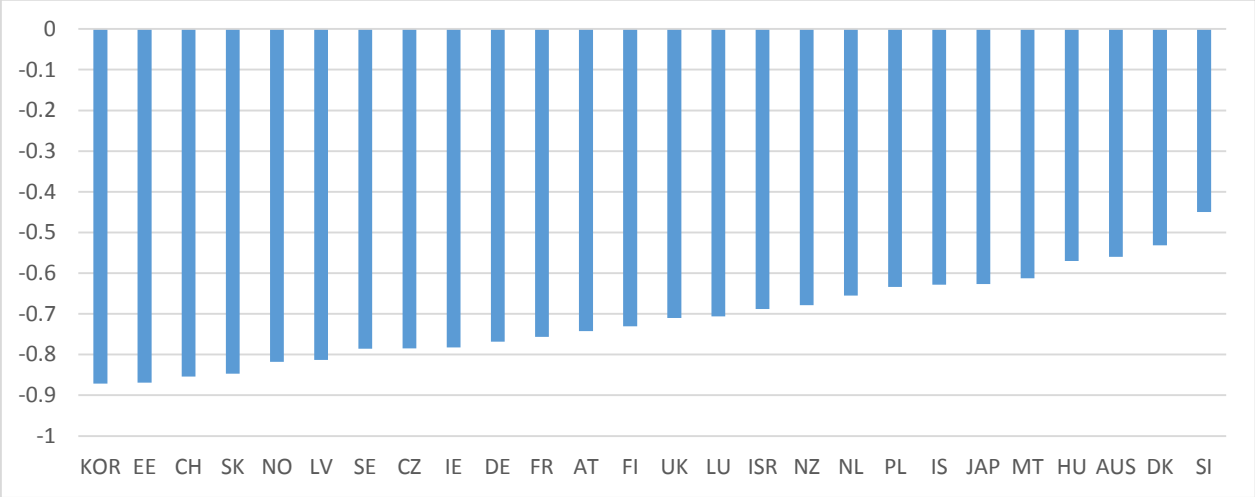


Note: no social assistance benefits in Greece, Italy and Turkey.

Source: OECD Benefits and Wages, own calculations.

In many countries, housing allowances are part and parcel to an integrated minimum income protection strategy, either through a separate benefit, or as a housing related part of social assistance. Housing allowance benefit levels generally depend on actual housing costs. The OECD therefore assumes a lump sum housing cost equal to 20% of the average wage. This amount is used in the simulations of the distribution of housing allowances, and remains the same for the different model families at different income levels. Figure 4 shows the differences in targeting of this housing allowance among the countries where a rights-based housing allowance exists at the national or regional level. Again, there are large differences in intended targeting, with a clear focus on housing support for the poorest in Korea, Estonia and Switzerland, in contrast to beneficial to far larger groups in Slovenia and Denmark.

Figure 4. Targeting design indicator of housing allowance



Note: no non-discretionary housing allowances in BE, BG, CAN, CHIL, EL, ES, IT, LT, PT, RO, TUR, and the US.

Source: OECD Benefits and Wages, own calculations.

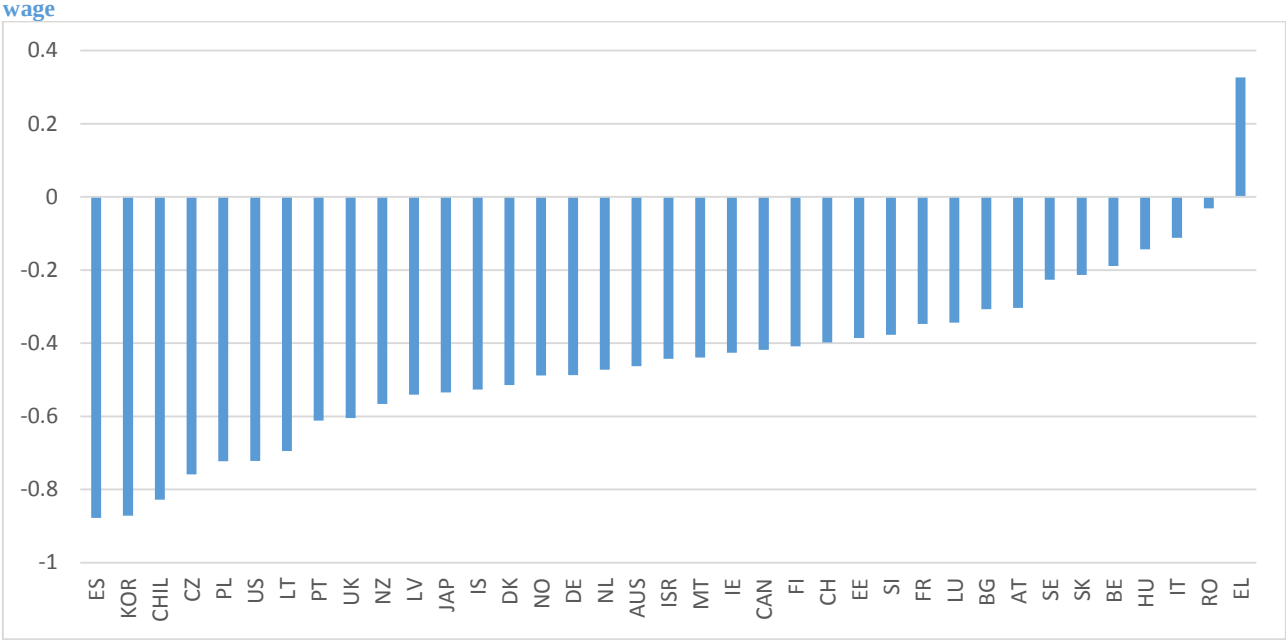
5.2.3 All non-contributory benefits combined

In 5 below we show the targeting indicators of all benefits combined (housing allowance, social assistance, child support and in-work benefits, according to the OECD classification) for a couple with two children over the 0 – 220% of gross average wage income range.

The results show that targeting is more outspoken for the total of non-contributory benefits than it is for child benefits alone. The US is an exception since the targeting design of the child benefit is based on TANF. Including food stamps and the earned income tax credit results in a somewhat less targeted design. Nonetheless, the US is one of the countries that most decisively intends to target families with low incomes. Another exception is Romania where including in-work benefits, social assistance and housing allowances leads to a nearly universal targeting score. This is due to the structure of the OECD Benefits and Wages output data, where it is assumed that it is the *same* family that earns these different percentages of the gross average wage, and hence makes the transition from social assistance to employment (see data section). Whereas this assumption in general is not too relevant, in Romania, it causes eligibility to a specific activation measure, where former social assistance beneficiaries keep on receiving their former benefit as a back-to-work bonus. Hence, under

this specific assumption, this model family will receive social assistance for the full income distribution. In Greece and Italy, the targeting design indicator is exactly the same for child benefits as for all benefits together, as no other legally guaranteed non-contributory benefits exist, at least not for the model family included in our exercise.

Figure 5. Targeting design indicator for legally guaranteed benefits, couple with 2 children, 0 – 220% of gross average wage



Source: OECD Benefits and Wages, own calculations.

Finally, a number of countries stand out because of their relatively limited targeting, even though the inclusion of social assistance, in-work benefits and housing allowances leads to a more targeted benefit design than child benefits do. In Slovakia, Sweden, Hungary and Belgium, the institutional targeting design indicator takes values between -0.23 and -0.14. This is either because of a relatively generous child benefit as compared to the value of the means-tested benefits (or a particularly ungenerous means-tested benefit as compared to the value of the universal benefits).

5.3 Application 2: Differences between family types

So far, we discussed the targeting design of various benefits for the specific case of a (breadwinner) couple with two children. As long as the underlying distribution and institutional data is similar, it is possible to compare the targeting design over different groups of interest. In this section, we will compare the targeting intentions for breadwinner couples vis-à-vis lone parents. Marchal and Marx (2017) have shown that at the level of minimum income protection for working households, many countries direct substantial additional support towards lone parent households, far beyond the increase in support they targeted at breadwinner couples with children. The targeting indicator allows to assess whether this support is mainly targeted towards the very poorest lone parent households.

The targeting design indicators discussed above showed targeting of child benefits (as classified by the OECD) for a couple with 2 children aged 6 and 10, with gross earned

household income ranging from 0 – 220% of the gross average wage. Table 3 sheds more light on the differences in targeting between couple households and lone parent families. In the second and the third column, we show targeting intent for respectively a couple with 2 children and a lone parent with 2 children. In most countries targeting intent is quite similar for both groups (for instance in Belgium, universal for a couple with 2 children, slightly targeted for a lone parent with 2 children; or equal in e.g. Austria, Denmark, Chile, and Spain). Yet elsewhere (e.g. the Czech Republic) within the group of lone parents, child benefits are more heavily targeted than within the group of couples with children, whereas the reverse is true for Lithuania. All in all, there does not appear to be a clear pattern of more targeted child benefits among the group of lone parents. What is fairly consistent is that on average, lone parents receive more child benefits than similar couples with children do. Column 4 shows the average difference between child benefits received by the lone parent family type v-à-v the couple one. Whereas some countries on average award equal benefits (e.g. Austria and Canada), in most countries, the lone parent family type receives more. This 'lone parent bonus' appears to be either constant over the distribution (for instance in Finland or France, or targeted at the lower income population, see the last column). But, in line with the variation in terms of targeting among both target groups, the actual distribution of this "lone parent bonus" over the income distribution varies. In a few countries (Estonia, Hungary and Lithuania) this lone parent bonus is very slightly targeted towards higher incomes.

Table 3. Targeting of child benefits among couples with 2 children and lone parents with 2 children, 2013

country	couple with two children	lone parent with two children	average difference between lone parent's and couple household's child benefits (national currency)	targeting of difference (consistently positive difference only)
AUS	-0.41	-0.45	1036	-0.78
AT	0.00	0.00	0	=
BE	0.00	-0.05	244	-0.73
BG	-0.19	-0.10	1269	-0.05
CAN	-0.34	-0.34	0	=
CHIL	-0.71	-0.71	0	=
CH	0.11	0.11	0	=
CZ	-0.55	-0.67	-1627	/
DE	-0.26	-0.34	399	/
DK	0.00	0.00	45580	0.00
EE	-0.08	-0.03	441	0.03
EL	0.33	0.28	-2217	/
ES	-0.76	-0.76	0	=
FI	0.00	0.00	4810	0.00
FR	-0.05	-0.02	2180	0.00
HU	-0.01	-0.01	34110	0.03
IE	0.00	-0.37	3286	-0.73
IS	-0.23	-0.19	191716	-0.12
ISR	0.00	0.00	1528	0.00
IT	-0.11	-0.11	0	=
JAP	0.00	-0.01	2521	-1.00
KOR		-0.75	358371	-0.75
LT	-0.45	-0.05	4358	0.01
LU	0.00	0.00	0	=
LV	0.00	0.00	840	0.00
MT	-0.19	-0.45	794	-0.86
NL	-0.16	-0.16	0	=
NO	0.00	-0.16	23251	-0.32
NZ	-0.51	-0.51	0	=
PL	-0.67	-0.75	878	/
PT	-0.36	-0.36	106	-0.37
RO	-0.16	-0.22	85	/
SE	0.00	0.00	30552	0.00
SI	-0.20	-0.34	-302	/
SK	0.00	-0.38	1119	-0.57
UK	-0.52	-0.52	-65	/
US	-0.86	-0.87	-236	/

Note: = : no difference between child benefits for couple vs. lone parent household ; / : difference between couple vs. lone parent household is not consistently positive, targeting differential not calculated.

Source: OECD Benefit and Wages, own calculations

5.4 Application 3: A crisis effect on targeting design?

Tracking trends in targeting design allows to assess whether the crisis led to a substantial restructuring of the welfare state. Some authors have indeed argued that crises may represent windows of opportunity for policy makers to change or redirect path-dependent social policies (see Starke, Kaasch, & Van Hooren, 2013).

In the wake of the crisis, many international organizations, such as the IMF, called for more means-tested social programs as they favored an efficient use of limited public funds (see e.g. International Monetary Fund, 2012). Also the European Commission called for more benefits targeted towards those households that would be more likely to spend the additional income (European Commission, 2008). Several authors have since assessed which policy measures were taken in response to the crisis, generally focusing on a specific policy field. For instance, Marchal, Marx and Van Mechelen (2014; 2016) showed increased support to minimum income beneficiaries in the immediate aftermath of the onset of the financial crisis, that was however swiftly cut back as the crisis progressed. In line with Shahidi (2015) and Armingeon (2012), they found that cut-backs were more likely and severe in countries where the crisis was more severe. Also in the fields of labour market reforms, Clasen, Clegg, and Kvist (2012) found such a two-staged response pattern. This research mainly focused on specific benefit amounts, rules and conditions. Other authors adopted a more holistic approach, focusing on country case studies, finding a similar pattern of expansion followed by retrenchment (Dukelow, 2012; Farnsworth & Irving, 2011; Starke et al., 2013). An assessment of changes to the overall targeting design of benefits and benefit combinations over a broader income distribution does however provide a clearer indicator of intrusive changes to the overall organization of benefit schemes. In short, does the observed tinkering in the margin at different points in the distribution lead to a substantially different targeting design?

Cross-nationally and cross-temporally comparing targeting design across nations will show us whether the reported (relatively limited) changes in specific benefits made welfare states overall more targeted. In this section, we use the proposed targeting design measure to assess whether the organization of different assistance based benefits in combination has substantially been altered in the wake of the crisis. We look at the period 2001-2013 in order to identify whether changes were atypical. Figure 6 shows trends in the concentration coefficient of child benefits (as classified in the OECD model) for a one-earner couple with two children (aged 6 and 10), over an income range going from 0 to 220% of gross average wage gross income, whereas Figure 7 looks at all assistance-based benefits in combination. For the ease of presentation, we split countries in the commonly used Esping-Andersen grouping, although it should be kept in mind that this grouping is less suitable for assistance-based benefits[6].

[6] Please note that the Eastern European countries are additionally split in two groups, to improve readability.

The main observation from figures 6 and 7 is that there is no common trend towards more or less targeting, nor over the entire period, nor when focusing on the years after the Great Recession. In contrast, there are large differences between countries.

Specifically for the targeting design of child benefits (Figure 6), targeting design generally did not change immediately after the crisis. It did become slightly less targeted in Germany, France, and, later on, in the US, but the scale of these changes was very limited and was moreover quickly reversed in the former country. Child benefits became more targeted in the UK, Portugal, and Lithuania. In all cases these were austerity measures, generally taken already a few years after the onset of the crisis. Child benefits did become somewhat more targeted in the Netherlands in 2008. Also in the Czech Republic, child benefits became (far) more targeted in 2008. Since the data refer to the situation in July 2008 (i.e. before the full onset of the crisis in most countries), it is rather unlikely that these changes in targeting design were actually crisis-driven. In the other countries, post-crisis changes seem to be in line with trends in earlier years. In Ireland, Belgium, Austria and the Scandinavian countries, targeting design remained universal over the entire period. All in all, substantial crisis-driven changes to targeting design are limited to a few countries where austerity measures made child benefits more targeted.

Figure 6. Concentration coefficient of child benefit for a couple with 2 children, income range 0 – 220 % AW, 2001-2013

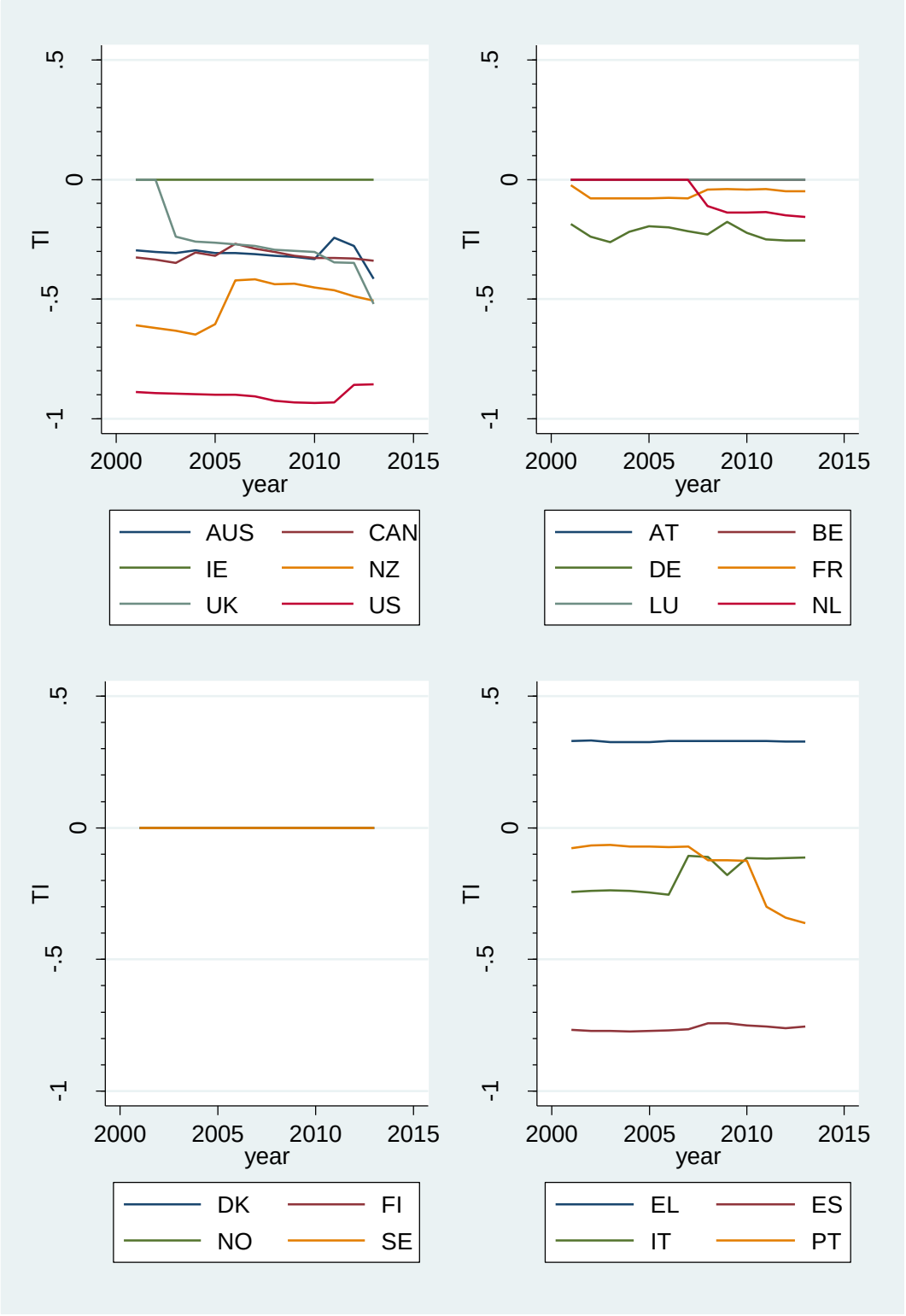
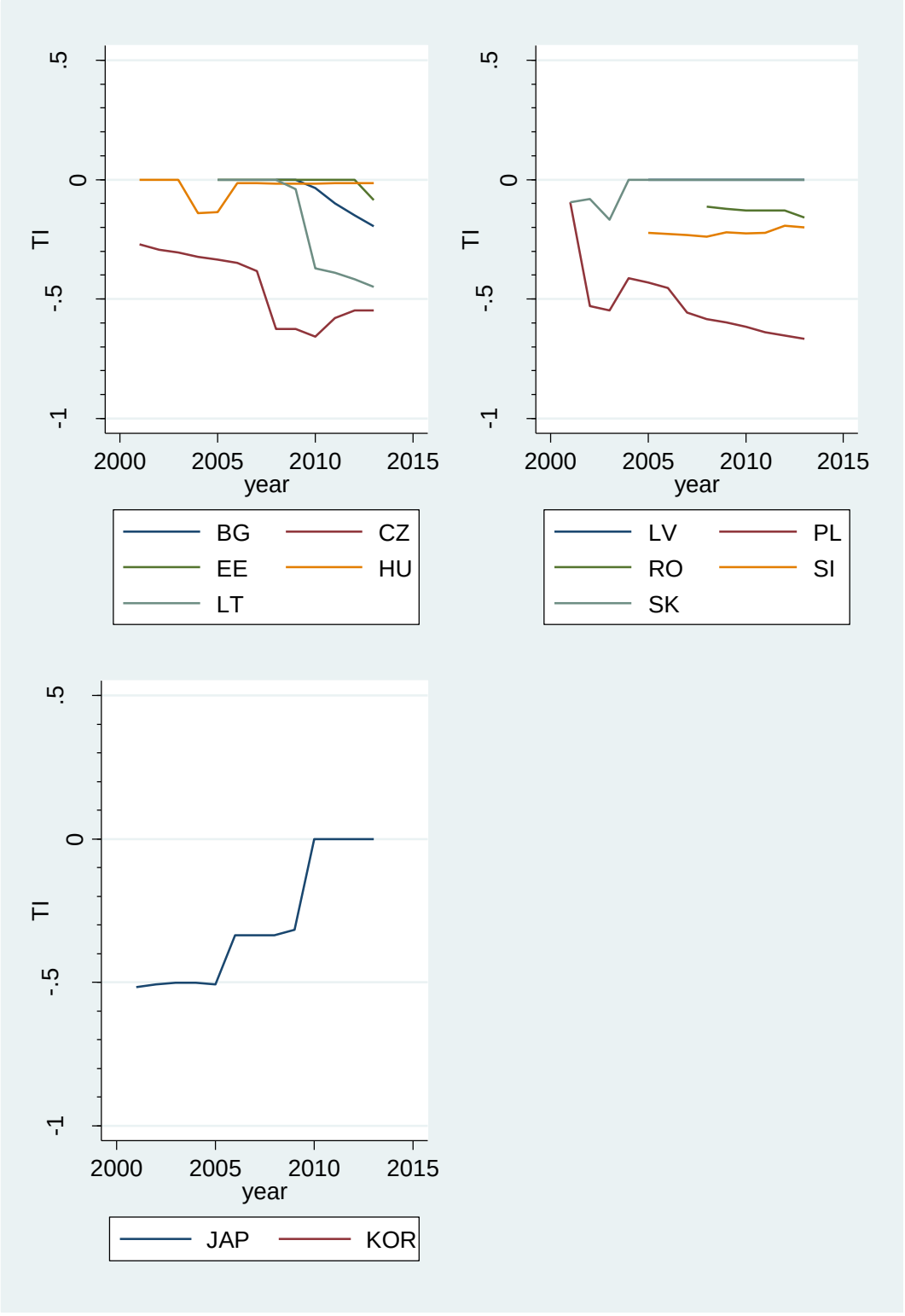


Figure 6. Concentration coefficient of child benefit for a couple with 2 children, income range 0 – 220 % AW, 2001-2013 - ctd



Note: no child benefits for the couple with 2 children model family in Korea.

Source: OECD Benefits and Wages, own calculations

Also when taking account of the wider array of assistance benefits, including those specifically focused on in the calls from international organizations at the onset of the crisis,

we find that crisis measures impacted on targeting design only in some cases. The clearest example is the expansion of the food stamp scheme in the US, which in the first crisis years became temporarily accessible to higher income households. Whereas this was clearly a substantial departure from traditionally strongly targeted support, it was only a temporary expansion. A similar (but more limited) temporary expansion appears to have occurred in Germany. In France, a shift towards more targeted benefits was permanent, but not a reaction to the crisis. Elsewhere, changes in the post crisis years were far more limited, or were in line with pre-crisis trends.

Figure 7. Concentration coefficient of assistance benefits for a couple with 2 children, income range 0 – 220 % AW, 2001-2013

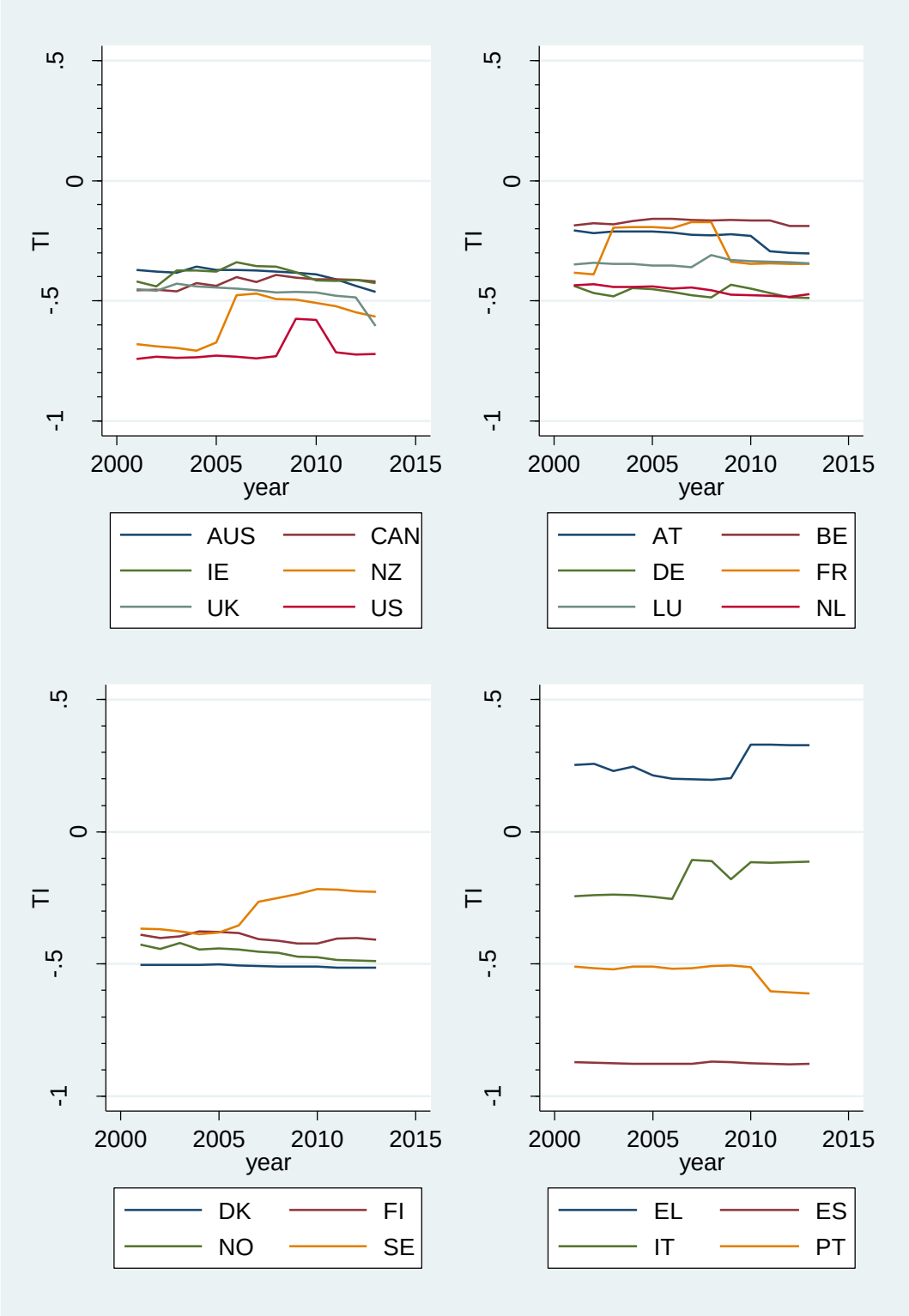
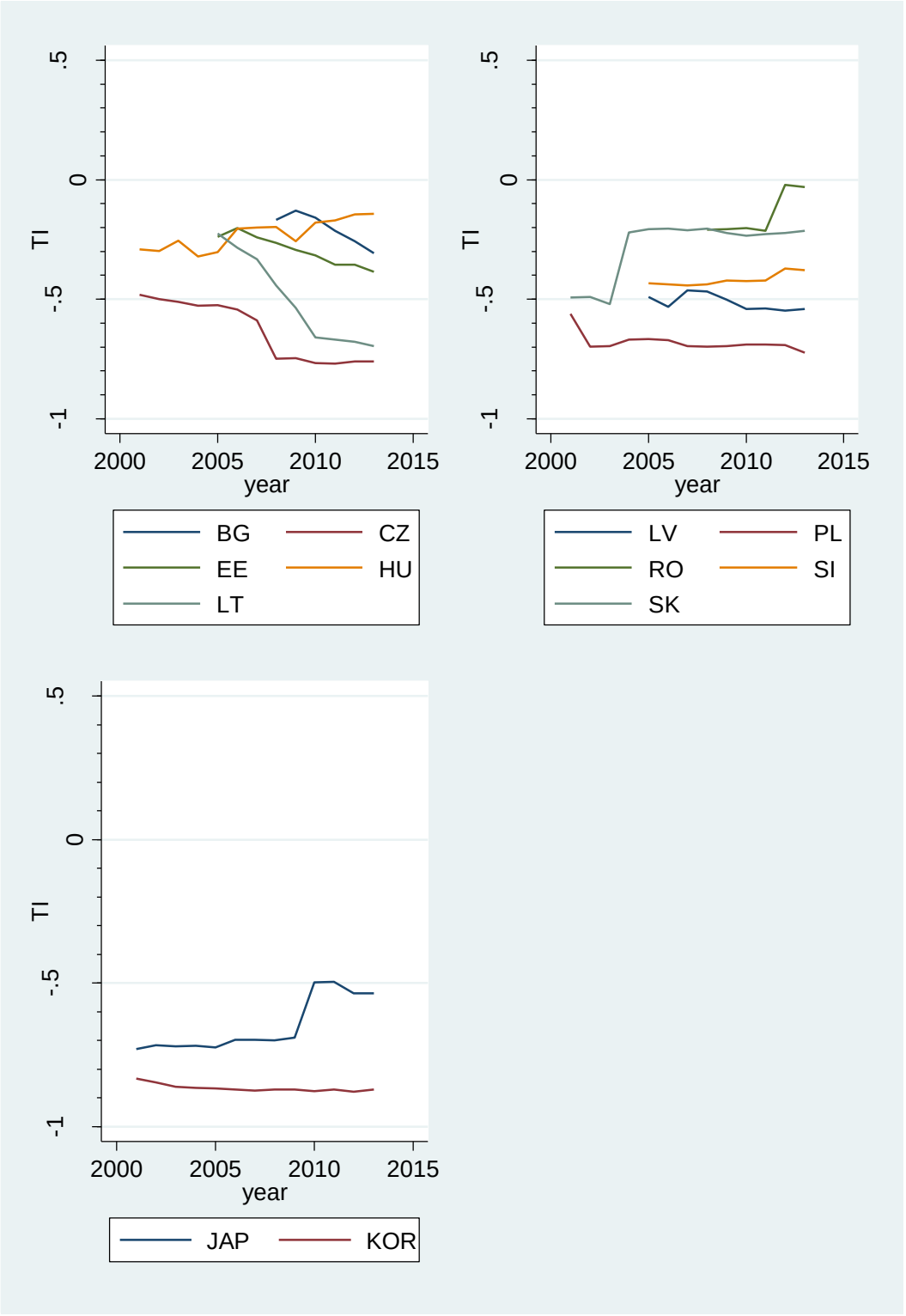


Figure 7. Concentration coefficient of assistance benefits for a couple with 2 children, income range 0 – 220 % AW, 2001-2013 – ctd



Source: OECD Benefits and Wages, own calculations

In sum, whereas targeting design did change due to crisis measures in a limited number of countries, generally the measures identified in the literature had no substantial impact on

overall design. Moreover, bar some temporary measures, changes in targeting design only occurred after a few years in the crisis, as part of efforts to cut spending.

5.5 Application 4: A short note on contributory benefits

Measuring targeting intentions of non-contributory benefits is straightforward, and the concentration coefficient performs well in gauging the targeting design of these benefits. However, as noted above, in many countries the bulk of the benefits are contributory ones. This poses additional challenges to uncover targeting intentions. In the table below, we calculate the concentration coefficient on the replacement rates for unemployment benefits, and on the actual unemployment benefit amounts (both in relation to previous earnings). Here, too, we focus on a couple with 2 children, yet this time with *previous* earnings ranging from 0 – 200% of the average wage. Since the couple is unemployed, current earnings are zero and the benefit amounts usually depends on previous earnings.

Table 4 clearly illustrates the different logic of income replacement schemes. Based on the replacement rates (the unemployment benefit as a percentage of previous earnings), the concentration coefficient is negative in all countries, indicating that previous low earner families enjoy higher replacement rates. The closer to zero, the more the unemployment benefit system resembles a purely proportional system, with equal replacement rates regardless of previous earnings. In most countries however, measures such as benefit ceilings or minimal wage levels for entitlement distort such a purely proportional picture, and many countries ensure a relatively targeted system in terms of replacement rates.
Yet when focusing on benefit amounts, as we did in this paper, we come to an entirely different conclusion. Indeed, it follows from the logic of a contributory income replacement rates that families with previously high earnings will receive more in absolute terms in the event of job loss, compared with families with previously low earnings. Merely focusing on benefit amounts relative to previous earnings therefore shows a picture of targeting intentions towards higher incomes in almost all of the countries. We see some exceptions in those countries where unemployment benefits are flat-rate, as is the case in Australia, New Zealand and the United Kingdom.

Table 4. Concentration coefficient of unemployment benefits relative to previous earnings (0-200% average wage), couple with 2 children, 2013

country	UB replacement rates	UB amounts
AT	-0.152	0.195
AUS	-0.665	0.000
BE	-0.600	0.063
CAN	-0.117	0.221
CZ	-0.286	0.175
DE	-0.496	0.204
DK	-0.629	0.039
EL	-0.665	0.000
ES	-0.517	0.140
FI	-0.457	0.191
FR	-0.051	0.318
HU	-0.287	0.131
IE	-0.567	0.066
IS	-0.196	0.164
IT	-0.221	0.156
JAP	-0.388	0.190
KOR	-0.553	0.098
LU	-0.068	0.264
NL	-0.531	0.152
NO	-0.000	0.237
NZ	-0.665	0.000
PL	-0.216	0.104
PT	-0.165	0.223
SE	-0.512	0.096
UK	-0.665	0.000
US	-0.194	0.157

How one should assess targeting intentions in insurance-based benefits systems ultimately depends on the research question. Still, even for contributory benefits the concentration coefficient applied on institutional data yields intuitive results that are a reflection of policy design.

6 Limitations of the indicator

The targeting design measure explored in this paper has both advantages and limitations. It does succeed in capturing intended targeting for a very specifically determined model family, and in distinguishing between more and less targeted benefits. Yet, as indicated by the comparison of the German and Portuguese child benefit design, background knowledge of the schemes remains necessary. Targeting design can be varied and in some countries has an outspokenly jagged outline. Summarizing such a distribution in one measure leaves important nuances untold. The quality of the institutional data is equally important. Seemingly small assumptions can have a large impact. How to treat back to work bonuses or

refunded tax credits are only a few examples. For reasons of consistency, in this paper we follow the classification of the OECD although it is clear that an in-depth assessment (and perhaps even reclassification) of certain income components might be necessary for some countries.

In the appendix we contemplate how to assess (refunded) tax credits, who are akin to benefits in their social purposes. We checked the impact of an alternative classification, where the refunded part of income taxes was included as a benefit. This alternative classification did not substantially impact on the targeting design measures, as the benefit units entitled to assistance benefits generally overlaps with the benefit units who have negative tax liabilities after taking account of tax credits. Self-evidently, tax credits also aid households who only see their tax liabilities decreased. Here the different logics of targeting of benefit amounts and the progressivity of tax rates meet. Nor our, nor the tax progressivity measures succeed in combining both logics in one single measure. In our view, for those households who remain with positive tax liabilities, it would be most elegant to include the impact of tax credits in a progressivity measure of taxes, based on positive tax liabilities, and use this as a context variable to frame the targeting design of benefits.

In the appendix we also compare the proposed targeting indicator to two other indicators proposed in the literature (the measures proposed by Noël & Jacques, and Van Lancker and Van Mechelen discussed above). Also, we assess the sensitivity of the indicator to changes to the underlying distribution. Overall, correlations with the other two known targeting intentions indicators run in the expected direction, although they are weak. Some countries are assessed substantially different by the different indicators.

It is important to note that the concentration coefficient needs to be calculated on exactly the same underlying income distribution to be comparable across countries and over time. If the underlying distribution of incomes differs across countries, e.g. in case institutional data stems from different sources, the concentration coefficient needs to be assessed in combination with the Gini index of that underlying distribution in order to make meaningful comparisons (see Marx et al. 2016). Finally, there are limits to the versatility of the concentration coefficient as an indicator of targeting intentions. It is not designed to cope with a limited number of observations and it cannot cope with negative amounts. This limits the form the underlying data can take, and limits the applicability of the concentration coefficient to assess the impact of net tax liabilities.

7 Conclusion

In this paper we propose, test and discuss an indicator to chart and compare targeting intentions across benefit schemes and countries, and over time. We propose to calculate the concentration coefficient of benefit amounts over a hypothetical income distribution for a specific model family, reflecting the rules and legislations of benefit systems across OECD countries. This approach builds on the use of model family simulations as indicators for the

generosity of benefit schemes (e.g. Gough et al., 1996) and as indicators for the progressivity of tax systems (OECD, 2015; Paturot et al., 2013) or benefit schemes (Nelson et al., 2016). We explore the usefulness of this approach in measure targeting intentions.

Overall, the proposed indicator performs well in reflecting targeting design. It is able to identify the degree of targeting built into benefit schemes. . It can cope with non-linear targeting and complex set-ups of targeting design. The indicator reliably reflects policy changes, and can be interpreted intuitively. Finally, it isolates the issue of targeting from generosity or benefit levels. As such, the indicator enables to measure targeting intentions in complex welfare states.

Some issues remain however. The usefulness of the indicator depends heavily on the underlying (fictional) income distribution. For interpreting the results, background knowledge of the systems remains necessary. Also, in order to fully capture targeting design of the entire welfare state, including tax design and social insurance-based benefits, it is important to make a distinction between non-contributory and contributory benefit schemes.

We presented a number of possible applications in this paper. In a next step, these applications could be further developed. More importantly, however, since the indicator summarizes policy design in one parameter, it can be applied in multivariate models. As such it becomes possible to empirically assess what design is needed to ensure efficient targeting, and to scrutinize political economy arguments regarding cross-class coalitions and redistribution. Whether targeting intentions instead of targeting outcomes are related to better or poorer redistributive outcomes has the potential to move forward the long-standing debate on the 'paradox of redistribution' in the years to come.

8 References

Akerlof, G. A. (1978). The Economics of "Tagging" as Applied to the Optimal Income Tax, Welfare Programs, and Manpower Planning. *The American Economic Review*, *68*(1), 8-19.

Anne, D., & L'Horty, Y. (2008). *Les effets du revenu de Solidarité active (rSa) sur les gains du retour à l'emploi* (08-11). Retrieved from Evry:

Armingeon. (2012). *The politics of austerity: what political parties can do and what markets want*. Paper presented at the 2012 meeting of the American political science association, New Orleans.

Barr, N. (2001). *The welfare state as piggy bank: information, risk, uncertainty, and the role of the state*. Oxford: Oxford University Press.

Bonoli, G. (2007). Time matters postindustrialization, new social risks, and welfare state adaptation in advanced industrial democracies. *Comparative political studies*, *40*(5), 495-520. doi: 10.1177/0010414005285755

Bradshaw, J., & Finch, N. (2002). *A comparison of child benefit packages in 22 countries* (174). Retrieved from Norwich:

Cantillon, B., & Van Mechelen, N. (2014). Cracks in a policy paradigm – poverty reduction and social security: the case of Belgium. *International Review of Sociology, 24*(2), 270-290. doi:10.1080/03906701.2014.933026

Clasen, J., Clegg, D., & Kvist, J. (2012). *European labour market policies in (the) crisis* (WP 2012.12). Retrieved from Brussels:

Dukelow, F. (2012). *Financial crisis and reform in the Irish welfare state*. Paper presented at the ESPAnet Annual conference, Edinburgh.

European Commission. (2008). *Communication from the commission to the European council - A European Economic Recovery Plan*. Retrieved from Brussels: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:52008DC0800:EN:NOT

Farnsworth, K., & Irving, Z. (Eds.). (2011). *Social policy in challenging times. Economic crisis and welfare systems*. Bristol: The Policy Press.

Gough, I., Bradshaw, J., Ditch, J., Eardley, T., & Whiteford, P. (1996). Social assistance in Oecd countries. *Journal of European Social Policy, 7*(1), 17-43.

Hirsch, M. (2008). livre vert vers un revenu de Solidarité active. *Haut Commissariat aux Solidarité actives contre la pauvreté*.

Immervoll, H. (2012). Minimum-Income Benefits in OECD Countries. In D. Besharov & K. Couch (Eds.), *Counting the Poor: New Thinking About European Poverty Measures and Lessons for the United States*. Oxford: Oxford University Press.

International Monetary Fund. (2012). *Greece: Request for extended arrangement under the extended fund facility - staff report*. Retrieved from Washington:

Jacques, O., & Noël, A. (2015). *Intentions and outcomes: the lasting relevance of the paradox of redistribution*. Paper presented at the European consortium for political research general conference, Montréal.

Joumard, I., Pisu, M., & Bloch, D. (2012). *Less income inequality and more growth - are they compatible? Part 3. Income redistribution via taxes and transfers across OECD countries*. Retrieved from

Kakwani, N. (1986). *Analyzing redistribution policies: a study using Australian data*. Cambridge: Cambridge University Press.

Marchal, S., & Marx, I. (2017). Stemming the tide: What have European Union countries done to support low-wage workers in an era of downward wage pressures? *Journal of European Social Policy, 0*(0), 0958928717704747. doi:doi:10.1177/0958928717704747

Marchal, S., & Marx, I. (forthcoming). Stemming the tide: What have EU countries and the US done to support low-wage workers in an era of downward wage pressures? *Journal of European Social Policy*.

Marchal, S., Marx, I., & Van Mechelen, N. (2014). The Great Wake-Up Call? Social citizenship and minimum income provisions in Europe in times of crisis. *Journal of Social Policy, 43*(2), 247-267. doi:10.1017/S0047279413000950

Marchal, S., Marx, I., & Van Mechelen, N. (2016). Minimum income schemes in the austerity tide. *IZA Journal of European labor studies, 5*(4), 1-20. doi:10.1186/s40174-016-0052-7

Mitchell, D., Harding, A., & Gruen, F. (1994). Targeting welfare. *The Economic Record, 70*(210), 315-340. doi:10.1111/j.1475-4932.1994.tb01850.x

Musgrave, R. A., & Thin, T. (1948). Income tax progression, 1929-48. *Journal of Political Economy, 56*(6), 498-514.

Nelson, K. (2007). *Introducing SaMip: The social assistance and minimum income protection interim dataset* (11/2007). Retrieved from

Nelson, K. (2013). Social Assistance and EU Poverty Thresholds 1990–2008. Are European Welfare Systems Providing Just and Fair Protection Against Low Income? *European Sociological Review*, *29*(2), 386-401. doi:10.1093/esr/jcr080

Nelson, K., Bäckman, O., Doctrinal, L., & Sirén, S. (2016). *Understanding the paradox: why effective poverty alleviation still requires a secured middle class*. Paper presented at the RC19 Conference Costa Rica.

OECD. (2014). Benefits and Wages: country specific files. Retrieved 20.11.2014 http://www.oecd.org/els/soc/benefitsandwagescountryspecificinformation.htm

OECD. (2015). *Taxing wages 2015*. Retrieved from Paris:

Paturot, D., Mellbye, K., & Brys, B. (2013). *Average personal income tax rate and tax wedge progression in OECD countries*. Retrieved from

Services, U. S. D. o. A. F. a. N. (2010). *Reaching those in Need: State Supplemental Nutrition Assistance Program Participation Rates in 2008: Summary*. Retrieved from

Shahidi, F. V. (2015). Welfare capitalism in Crisis: A qualitative comparative analysis of labour market policy responses to the Great Recession. *Journal of Social Policy, 44*(4), 659-686.

Skocpol, T. (1991). Targeting within universalism: Politically viable policies to combat poverty in the United States. In C. Jencks & P. E. Peterson (Eds.), *The urban underclass* (pp. 411-436). Washington, DC: The Brookings Institution.

Starke, P., Kaasch, A., & Van Hooren, F. (2013). *The Welfare State as Crisis Manager. Responses to Major Economic Crisis in Small Open Economies*. Basingstokes: Palgrave MacMillan.

Van Kerm, P. (2009). *Sgini. Generalized Gini and Concentration coefficients (with factor decomposition) in Stata*. Retrieved from

Van Lancker, W., & Van Mechelen, N. (2015). Universalism under siege? Exploring the association between targeting, child benefits and child poverty across 26 countries. *Social Science Research, 50*, 60-75. doi:http://dx.doi.org/10.1016/j.ssresearch.2014.11.012

Van Mechelen, N., Marchal, S., Goedemé, T., Marx, I., & Cantillon, B. (2011). *The CSB-Minimum Income Protection Indicators dataset (CSB-MIPI)* (CSB WP 11/05). Retrieved from Antwerp:

Van Oorschot, W. J. H., & Roosma, F. (2017). The social legitimacy of targeted welfare and welfare deservingness. In W. J. H. Van Oorschot, F. Roosma, B. Meuleman, & T. Reeskens (Eds.), *The social legitimacy of targeted welfare: attitudes to welfare deservingness* (pp. 3-36). Cheltenham: Edward Elgar Publishing.

Whiteford, P., Mendelson, M., & Millar, J. (2003). *Timing it right? Tax credits and responding to income changes*. Retrieved from York:

9 Annex

9.1 Comparison to other targeting indicators

Van Lancker and Van Mechelen (2015) report in their paper a targeting design indicator of overall child support (measured as the net disposable income of a family with children minus the net disposable income of a similar family without children, in order to capture the full child related advantages), for a couple with two children in 2009. As described above, TIVLVM is calculated as $TIVLVM = 1 - \frac{1}{n}\sum_{i=1}^{n}\frac{x_i}{x_{i+1}}$. In contrast to the approach taken in this paper, they base the calculation of their indicator on a more limited number of model families, at three to four income levels (no earned income, minimum wage, average wage and twice the average wage) instead of 221. Nonetheless, both indicators aspire to measure the same concept (i.e. targeting design of a benefit) over a similar income range (0 – (slightly over) twice the average wage), so differences should ideally remain limited.

Table 5 shows the targeting indicator reported by VLVM (2015) for child support. In the second column, we show the measure we proposed in this paper, i.e. the concentration coefficient calculated on the OECD data, for the income distribution 0 – 220% of gross average wage for a couple with two children, calculated on "child support" as defined by Van Lancker and Van Mechelen (the difference in net income for a family with and without children).

The measures show a positive correlation of around 0.5. Values are not directly comparable, but for most countries, the targeting design of overall child support is identified in a similar way, as targeted or not targeted. However, there are some important exceptions, that have a large impact on the ranking of some countries. First of all, there are some countries that are identified as universal by the measure of VLVM, and as targeted by the measure proposed in this paper. This is mainly the case for the countries where TIVLVM was calculated on only 3 cases, as a poor working case was missing (Germany and the four Scandinavian countries). The measure then failed to capture tax measures relevant for families relying on a low wage, information that is included in the higher number of income cases included in the OECD Benefits and Wages data. To further substantiate this explanation, we calculated TIVLVM on the 221 OECD income cases. The results are shown in the last column. As TIVLVM shows the average benefit increase when moving from a lower ranked to a higher ranked benefit unit, the values are far smaller when calculated over a higher number of units. The signs for Germany and the Scandinavian countries do point however towards targeted child support, also according to this measure. The comparison with this latter measure indicates that also for a number of other countries discrepancies (France, Estonia, Italy, Latvia, Poland and Slovakia) may be due to the more limited number of income cases in the original TIVLVM.

Table 5. Comparison to targeting indicator proposed by Van Lancker and Van Mechelen (2015), couple with 2 children in 2009

	TIVLVM (2015)	TICC	TIVLMVM(OECD)
AT	-0.0043	-0.06	-0.00151
BE	-0.0649	0.03	-0.00066
BG	0	-0.07	-0.00284
CZ	-0.4759	-0.17	-0.02432
DE	0	-0.15	-0.00278
EE	0.1469	-0.03	-0.00214
EL	0.3756	0.18	0.000155
ES	0.1724	0.03	-0.01368
FI	0	-0.21	-0.00409
FR	0.0885	-0.16	-0.00207
HU	0	-0.10	-0.00523
IE	-0.0533	-0.08	-0.00143
IT	-0.0561	0.00	0.005126
LT	0.1007	-0.39	-0.01791
LU	-0.0257	-0.09	-0.00165
LV	0.2499	-0.09	-0.00238
NL	-0.0299	-0.19	-0.00376
NO	0	-0.27	-0.00557
PL	0.1083	-0.22	-0.00845
PT	-0.1379	-0.29	-0.00605
RO	-0.1824	-0.15	-0.0042
SE	0	-0.11	-0.00243
SI	-0.3865	-0.14	-0.00316
SK	0.1587	-0.06	-0.00103
UK	-0.76	-0.35	-0.00709
correlation	1	0.48	0.29

Source: Van Lancker and Van Mechelen (2015); OECD Benefits and Wages, own calculations

The other indicator proposed as a targeting design indicator – the share of means-tested spending in social spending, by Noël & Jacques – is far more crude. It is debatable whether this indicator truly measures targeting design, as the same confounding issues that surround regular targeting outcome measures, also apply here. This said, we would expect a negative correlation between our targeting indicator and the share of means-tested social spending. This is also what we find, although the correlation is very weak. Obvious explanations are the difference between measuring outcomes and design. Also relevant is that our targeting indicator is calculated for couples with children and lone parents solely, and in addition only looks at the benefits to which these very specific family types are eligible. Means-tested spending may include far broader benefits, including discretionary benefits or emergency payments. In addition, the data referred to by Noël and Jacques only distinguish between working-age and pension spending, making it possible that health-related means-tested benefits are also included in the spending data.

Table 6. Comparison to targeting indicator proposed by Noël & Jacques

	Means-tested working age spending as % of social spending (2011)	TI, all benefits, for couples with two children, 2011	TI, all benefits, for lone parents with two children, 2011
AT	3.61	-0.29	-0.23
BE	5.34	-0.17	-0.14
CZ	1.81	-0.77	-0.80
DE	6.74	-0.47	-0.46
EL	2.68	0.33	0.32
ES	9.01	-0.88	-0.88
FI	5.01	-0.40	-0.15
FR	6.65	-0.34	-0.26
HU	2.88	-0.17	-0.12
IE	31.92	-0.42	-0.37
IT	3.91	-0.12	-0.12
LU	3.11	-0.34	-0.24
NL	11.68	-0.48	-0.30
NO	3.49	-0.48	-0.33
PL	3.66	-0.69	-0.70
PT	5.6	-0.60	-0.56
SE	2.73	-0.22	-0.08
SI	7.85	-0.42	-0.45
SK	5.65	-0.23	-0.28
UK	20.55	-0.48	-0.47
US	17.12	-0.71	-0.74
correlation	1	-0.25	-0.26

Source: OECD SOCX, as described in Noël and Jacques; OECD Benefits and Wages, own calculations

9.2 Alternative fictional income distributions

We assess the impact of the width of the income distribution, on the targeting indicators calculated for all benefits of a couple with two children. As can be expected, we find that the overall targeting image differs substantially depending on the income range one looks at. Self-evidently, targeting is much higher when including the lowest income cases that fully benefit from minimum income protection, housing allowances and means-tested child benefits. Targeting over higher income ranges is generally limited to in-work benefits, or a phased withdrawal of child benefits or tax credits.

Table 7. Targeting indicator for all assistance based benefits awarded to a couple with 2 children, over different income ranges (defined as % of gross average wage), 2013

country	0-220	0-200	50-220	30-220	80-180
AUS	-0.46	-0.41	-0.42	-0.43	-0.27
AT	-0.30	-0.31	-0.03	-0.13	0.00
BE	-0.19	-0.20	0.00	0.00	0.00
BG	-0.31	-0.24	-0.25	-0.26	-0.02
CAN	-0.42	-0.40	-0.28	-0.33	-0.12
CHIL	-0.83	-0.81	-0.82	-0.79	-0.89
CH	-0.40	-0.41	0.00	-0.12	0.00
CZ	-0.76	-0.74	-0.72	-0.80	-0.81
DE	-0.49	-0.44	-0.37	-0.42	-0.10
DK	-0.51	-0.50	-0.41	-0.48	-0.23
EE	-0.39	-0.40	-0.02	-0.07	0.00
EL	0.33	0.33	0.21	0.25	0.13
ES	-0.88	-0.87	-0.98	-0.87	
FI	-0.41	-0.41	-0.18	-0.29	-0.04
FR	-0.35	-0.35	-0.17	-0.26	-0.07
HU	-0.14	-0.15	-0.04	-0.06	-0.02
IE	-0.43	-0.42	-0.26	-0.33	-0.13
IS	-0.53	-0.50	-0.35	-0.40	-0.20
ISR	-0.44	-0.45	-0.18	-0.32	0.00
IT	-0.11	-0.07	-0.26	-0.21	-0.18
JAP	-0.53	-0.53	-0.38	-0.47	-0.10
KOR	-0.87	-0.86		-0.96	
LT	-0.69	-0.66	-0.71	-0.71	-0.59
LU	-0.34	-0.35	-0.09	-0.21	0.00
LV	-0.54	-0.55	0.00	-0.24	0.00
MT	-0.44	-0.44	-0.20	-0.26	-0.06
NL	-0.47	-0.47	-0.26	-0.32	-0.03
NO	-0.49	-0.50	-0.07	-0.27	0.00
NZ	-0.57	-0.52	-0.54	-0.56	-0.41
PL	-0.72	-0.69	-0.77	-0.74	-0.78
PT	-0.61	-0.57	-0.45	-0.53	-0.32
RO	-0.03	-0.03	-0.03	-0.04	-0.02
SE	-0.23	-0.24	-0.01	-0.07	0.00
SI	-0.38	-0.35	-0.30	-0.33	-0.26
SK	-0.21	-0.21	-0.13	-0.15	-0.13
UK	-0.60	-0.57	-0.60	-0.61	-0.32
US	-0.72	-0.69	-0.83	-0.79	-0.87
correlation	1	0.996231	0.835593	0.927508	0.72224

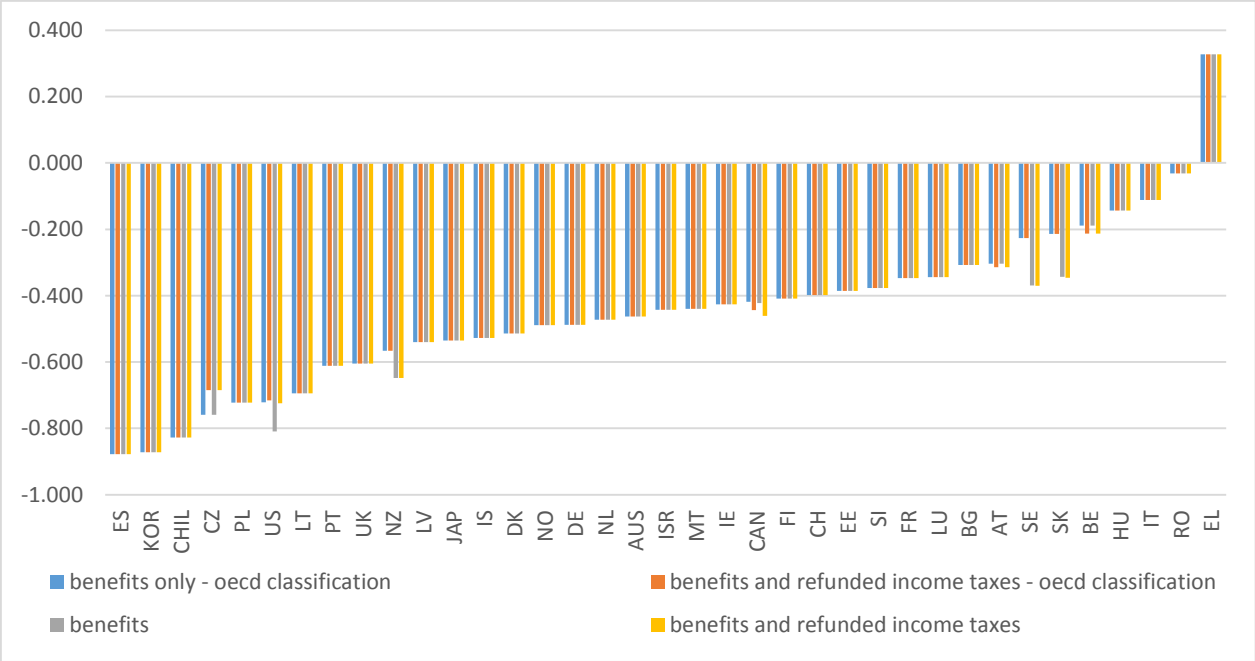
9.3 Treatment of tax credits

Throughout this paper, we follow the OECD classification of benefits. We disregard negative tax liabilities for low income groups caused by refundable tax credits other than those included as in-work benefits, even though they may serve similar or the same functions as outright benefits. Here we check the impact of an alternative classification of tax credits, where we include the value of the actually refunded part of tax credits in our assessment of benefit targeting. Self-evidently, tax credits also aid households who only see their tax

liabilities decreased. Here the different logics of targeting of benefit amounts and the progressivity of tax rates meet. Nor our, nor the tax progressivity measures succeed in combining both logics in one single measure. In our view, for those households who remain with positive tax liabilities, it would be most elegant to include the impact of tax credits in a progressivity measure of taxes, based on positive tax liabilities, and use this as a context variable to frame the targeting design of benefits.

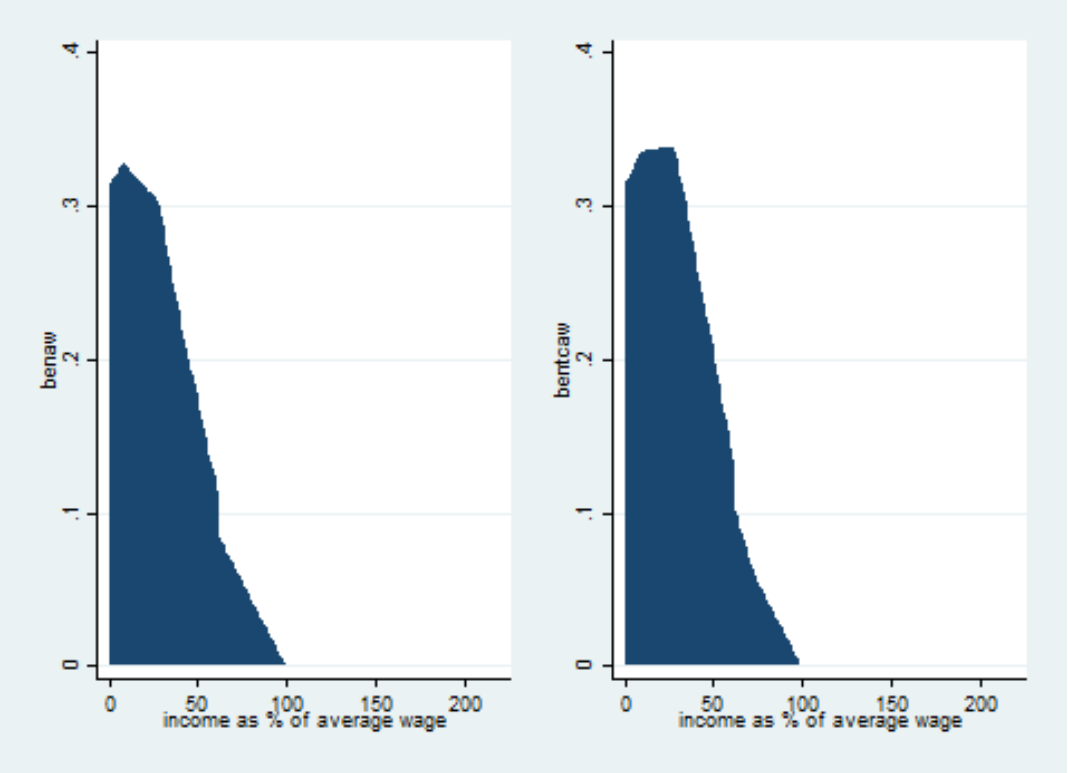
As tax credits can be classified either under income taxes or under in-work benefits in the OECD data, we reclassify for this exercise tax-related in-work benefits to income taxes. We thus add the tax credits to the income tax liabilities, in order to end up with the total net effect of all tax credits and measures included in the model combined. This allows us to single out the full amount of the actually refunded part and to include this in an assessment of benefit targeting. This alternative classification did not substantially impact on the targeting design measures, as the benefit units entitled to assistance benefits generally overlap with the benefit units who have negative tax liabilities after taking account of tax credits.

Figure 8. Comparison of targeting intentions measures with reclassified in-work benefits



Even in the US, with fairly large resources going to the earned income tax credit, the characterization by the targeting design indicator only shifts towards slightly less targeted. This is mainly due as the refunded part of the EITC benefits more or less the same households who are eligible to food stamps and TANF (see figure 10). For higher income households, the EITC is still felt as it reduces their tax liability, but not to the point that it effectively cancels it. We do not include this reduction in tax liability in our indicator, as it finds itself at the cross-roads of a contributory and non-contributory logic. A possible way to cope with this issue would be to include a comparison of the distribution in tax *rates* represented by the positive tax liabilities over fictional distributions.

Figure 9. Distribution of benefits over hypothetical income distribution, US, 2013, couple with 2 children



9.4 Representativity of the OECD data

If the OECD data are not representative for the workers in the countries included in our analyses, the results may well be biased, certainly so if there are large cross-country differences. Below we show the share of persons having a wage below 220% of the average wage (which is the cut-off point used in the OECD database), the share of active age persons with a wage below 220% and the share of active age persons living in a couple family with two children (akin to the model families in the OECD database). The results for European countries are derived from EU-SILC wave 2014, while for the other countries data are derived from the LIS (Luxemburg Income Study) database (waves ranging from 2008 to 2014). The results show that a hypothetical income distribution up to 220% of average wage does include a significant share of the actual income distribution in all but one (Japan) of the countries.

Table 8. Share of persons with a wage < 220% of average wage

country	active age (16-64) persons	active age persons living in couple families with two children
AT	79%	77%
BE	77%	69%
BG	81%	76%
CY	81%	70%
CZ	78%	73%
DE	76%	73%
DK	83%	74%
EE	81%	73%
ES	77%	72%
FI	79%	71%
FR	81%	73%
GR	74%	65%
HR	76%	68%
HU	80%	74%
IE	79%	72%
IS	88%	84%
IT	72%	69%
LT	80%	75%
LU	79%	77%
LV	82%	78%
MT	78%	75%
NL	79%	73%
NO	86%	81%
PL	80%	69%
PT	80%	73%
RO	75%	71%
SE	85%	79%
SI	79%	70%
SK	81%	76%
UK	80%	72%
US	76%	64%
CA	75%	63%
JP	42%	70%
AU	74%	66%
IL	74%	59%

Sources: EU-SILC 2015 (incomes 2014), Luxemburg Income Study (LIS) database.