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Safety net or sieve: Do Europe's minimum income schemes reach the poor?

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Abstract

Today, nearly all EU Member States have a national Minimum Income Scheme (MIS) providing a social safety net to their citizens. This study explores MIS coverage among people of working age that find themselves to be at risk of poverty in the EU. We show that the share of poor individuals effectively covered by means-tested income support varies a lot, with coverage ranging from under 5 per cent of the pre-transfer poor population to upwards of 60 per cent. While one would assume that MIS coverage rates are largely determined by the reach and adequacy of social insurance arrangements, that picture is not as simple. MIS receipt rates are generally lower in countries with high social insurance coverage, but the picture is quite fuzzy. In fact, large swathes of the needy are uncovered by either scheme. The share of pre-transfer poor individuals who are left uncovered by both social insurance and social assistance ranges from less than 20 per cent to over 80 per cent. A large share of social assistance recipients experiences what one could call new social risks, specifically: inactivity, low-education, and in-work poverty. We also find higher rates of receipt among the disabled, and, to a lesser extent, among single parents. Yet patterns are not very consistent, pointing to manifold national idiosyncrasies in coverage mechanisms.

Keywords: poverty, coverage, minimum income, new social risks

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1. Introduction

Today, nearly all EU Member States have minimum income schemes in place that guarantee a basic level of income support for the least-well off. Still, these national schemes broadly differ in design, function, and overall effectiveness. This variation has inspired a vast academic literature that has introduced innovative typologies of minimum income protection and, eventually, has re-thought the validity of traditional welfare state paradigms. These contributions have brought valuable insights into the institutional variation in minimum income schemes. Still, the differences in the coverage of minimum income schemes have remained underexposed. While last safety nets clearly differ in their capacity to reach and protect those falling under the poverty line (Almeida et al., 2022; Cantillon et al., 2020), only few contributions have tried to explain such variation.

Institutional scholarship has stressed the role of the size and design of higher tier social insurance benefits. Accordingly, unemployment protection and social assistance likely act as “communicating vessels” (Pfeifer, 2013), causing the minimum income scheme to step in when first-tier benefits fall short. Similarly, the socio-economic factors and social risks related to the poverty experience, which differ between countries, also impact differently on the protective capacity of both MIS and social insurance alike. The research on the salience of socio-economic factors has however mainly focused on macro-level indicators (Tervola et al., 2021; van Vliet & Wang, 2019).

Minimum income beneficiaries are notoriously hard to identify in the major cross-national datasets available (Avram, 2019). For that reason, authors have generally focused on a restricted group of countries (e.g. Kauppinen et al., 2014; Tervola et al., 2021) or relied on microsimulation exercises. The latter mainly focused on the impact of the design and the applicable entitlement criteria of the schemes on the *potential* coverage of minimum income schemes (Figari et al., 2013).

Few comparative analyses have investigated at micro-level the *actual* coverage of minimum income protection and the profile of the beneficiaries in a large cross-national comparative setting (Immervoll et al., 2022). The poor population that is left uncovered from income support has been even more neglected. Furthermore, so far, the relevance of social risks among the poor has only played a residual role in the analytical framework to interpret the performance and the scope of MIS in European welfare states.

This paper puts the variation in minimum income schemes’ coverage front and center. Rather than focusing on formal eligibility criteria, we zoom in on the actual minimum income scheme recipients, as well as on those who fall out of MIS’ reach. Using the 2019 EU-SILC data for all EU27 countries, the UK, and Norway, we show, first, the variation in actual coverage rates of means-tested last-resort income support. We assess to what extent these findings confirm cross-national differences and similarities that were previously flagged in more institution-based classifications. Second, we show to what extent minimum income schemes succeed in covering the gaps left by social insurance, or whether substantial numbers of the poor fall beyond the remit of the welfare state. We relate these findings back

to the framework of “communicating vessels” that has been used to explain differences in social assistance relevance between countries. Third, and finally, we focus on the profiles of both minimum income support beneficiaries and the uncovered poor. In so doing, we analyze to what extent the prevalence of new social risks has been accommodated by the welfare state.

As we describe in-depth in the methodology section, we undertook a meticulous cross-referencing of national and international sources to identify the relevant variables for each country and their suitability for cross-country analysis of social assistance.

As such, this article contributes to the literature on MIS types and effectiveness in two ways. On the substantive side, we highlight the importance of including new elements to assess the function and effectiveness of MIS as last resort benefit: the share of the uncovered poor and the relevance of new social risks among the beneficiaries and the uncovered poor. We assess the differences in the coverage of MIS and of other major income replacement benefits. In so doing, we test the empirical validity of the “communicating vessels” reasoning and of the institutional classifications that are based on this assumption. On the methodological side, we show the suitability of the EU-SILC for comparative research on social benefit reciprocity.

In the next section, we discuss the state-of-the-art on minimum income protection in Europe, with a specific focus on coverage, and we review the principal analytical frameworks and typologies of MIS. Section 3 presents the data and methods used. Next, we show the results of our analysis of benefit reciprocity in 27 European countries. Finally, we conclude.

2. Literature review

Over the last decades, minimum income schemes have gained relevance both in the “European Social Model” (Figari et al., 2013) and in national welfare states (Marchal & Marx, forthcoming). However, these schemes still differ on many dimensions, including their adequacy (e.g. Marchal et al., 2016), the territorial administration (Kazepov & Barberis, 2013); the underlying activation paradigm (Marchal & van Mechelen, 2017); and their accessibility.

The accessibility of social assistance has been assessed in different ways. Many scholars have focused on the legal parameters, analyzing the entitlement criteria and overall conditionality (e.g. Coady et al., 2021; Dalli, 2019; Marchal et al., 2021). Another branch of scholarship has used microdata to empirically assess the accessibility of social assistance (e.g. Figari et al., 2013; Immervoll et al., 2015; Van Oorschot, 2013). A part of this research has focused on the reciprocity rate, also known as the *effective* or *actual* coverage rate, defined as the ratio between the number of beneficiaries and a relevant reference population (e.g. the poor or the working-age). Alternatively, scholars have zoomed in on the eligibility rate (or, the *potential* coverage), i.e. the share of the population entitled to the benefit on the basis of its formal eligibility rules; and, the take-up rate, which captures the number of actual beneficiaries among the eligible population. The latter two are generally assessed with microsimulation techniques on survey or administrative data, in analyses of the drivers of non-take-up as an important impediment to effective safety nets (Ansaloni et al., 2022).

Previous research has shown that *actual* coverage of MIS schemes is far from complete. A first explanation points to the large differences in *potential* coverage. Substantial shares of the population at risk of poverty are not entitled to MIS benefits (Almeida et al., 2022) because of limits “by design” – e.g. the categorical conditions for the eligibility or the low-income thresholds to access the benefits – followed by issues of benefit administration, targeting errors, and *non-take-up* (Figari et al., 2013). Obviously, stringent access criteria and high conditionality stress the residual role of minimum income schemes and contribute to an under-coverage of the poor (see also Frazer & Marlier, 2016; Immervoll et al., 2022). However, these hypotheses do not consider the contextual dynamics which precede the design of the policy and its implementation.

A second explanation adopts a more systemic perspective and focuses on the complementarity of MIS with first-tier benefits. According to this institutional literature, the design and the performance of MIS are related to the features of the income maintenance system for the working-age population and, precisely, to the entitlement, generosity, and duration of unemployment protection (e.g. Clegg, 2013; Coady et al., 2021; Pfeifer, 2013). An apt metaphor was proposed by Pfeifer (2013), using the image of “communicating vessels”: the more encompassing the unemployment protection is, the less relevant the size of last resort social assistance; and *vice-versa*. However, few institutional analyses of social assistance have empirically tested this hypothesis. When doing so, such contributions have focused on a limited number of countries (Pfeifer, 2013; Raitano et al., 2021; Tervola et al., 2021), and often used

proxies for the actual coverage of social assistance or did not consider the actual coverage among the relevant indicators at all (Gough et al., 1997; Pfeifer, 2013).

Finally, the socioeconomic and demographic characteristics of the poor population, and, more generally, the relevance of social risks, have received only scarce attention when studying the coverage of minimum income benefits. When focusing on the levels of need, researchers have mainly used aggregate macro-level indicators (Gough et al., 1997; Pfeifer, 2013), pointing at the relevance of poverty and (long-term) unemployment in driving the number of recipients. In contrast, other studies have focused on the likelihood and determinants of social assistance reciprocity under different social-background circumstances and life-course circumstances, identifying “disadvantaged categories” (Immervoll et al., 2022; Kauppinen et al., 2014).

Few contributions however empirically assessed the link between MIS coverage and the prevalence of new social risks (Van Mechelen et al., 2016). New social risks result from structural transformations of the labor market and family structure that intensified at the end of the 20th century. Before, the welfare state – in the form of contributory social insurance – responded to widely shared or unpredictable risks for income security related to the breadwinner’s job loss, specifically invalidity, sickness, unemployment spells, and ageing (Taylor-Goody, 2004). In the post-industrial and secularized society, new risk structures arose, resulting in new demands for social protection. In contrast to old risks, the new social risks are not only related to job loss, but rather to both labour market conditions and family organization, involving the entire life-course (Taylor-Gooby, 2004). They include, among others, single parenthood, elderly-care, long-term unemployment, career interruptions, and atypical forms of employment. Women, the young working-age, low-skilled (Bonoli, 2007), and foreign citizens are the most exposed to the new risk structures.

As these risks are less blind and generalized, they are considered harder to include in general social insurance schemes (Cantillon, 2022), which protect mainly those with long and continuous employment histories. Therefore, it is expected that those excluded from traditional insurance-based benefits – the “outsiders” of social protection (Jessoula et al., 2010) – rely mainly on residual means-tested income protection. In contrast to the past, when MIS covered a residual group of the most in-need, we may therefore now expect MIS to cover a larger share of the economically insecure and to address a multitude of risks and individuals (Clasen & Clegg, 2011). However, it is still underexplored how, *and whether*, European safety nets take up this role.

With few exceptions (Bonoli, 2007; Ferragina et al., 2015), expectations regarding the risks covered by the last safety net are conspicuously absent from most categorizations of means-tested income support, as well as from traditional classifications of welfare regimes (Yang, 2014). The focus has mainly been on institutional indicators, especially in the earlier classifications. Table 1 summarizes four typologies that focus – partially or fully – on social assistance and MIS. We select two of the main traditional classifications: Lødemel and Schulte (1992), as the earliest, and Gough et al (1997) as the baseline

typology for social assistance. In turn, Pfeifer (2013) and Natili (2020) both explicitly adopt the communicating vessels rationale to classify the types of social protection.

Lødemel and Schulte (1992) adopted two institutional dimensions to distinguish four poverty regimes in Western countries. Alternatively, in their milestone study of OECD countries, Gough et al (1997) identified eight social assistance regimes (five in Europe). More recent contributions further built on this research to adopt a set of alternative dimensions, combining both outcome and institutional characteristics. The principle of the communicating vessels is often (implicitly) embraced to frame the differences in the design, function, and performance of last-resort social benefits. Pfeifer (2013) analysed the relation of social assistance and unemployment protection to one another in 14 Western European countries to evaluate which policy response is prevalent and how a rising need for benefits during working age is dealt with. Four “worlds of protection” resulted from this analysis, which didn’t include the reciprocity rate of social assistance among the various indicators. At the same time, the indicators of need only captured the aggregate picture, disregarding the extent to which people were left uncovered by both types of income support. More recently, Natili (2020) aimed to unveil the very nature of today’s MIS combining information related to the protectiveness of last resort safety nets and their activation profile. To this end, it is essential to know which principles of distribution dominate the overall welfare state context and, in particular, the main institutional features of the income maintenance system for the working-age population (2020: 60). Natili incorporated the communicating vessels principle in a wide and mixed set of outcome indicators, including (actual) coverage. Interestingly, the clusters for the coverage rates and those for the balance of contributory and assistance-based income support do not fully correspond. This suggests that the communicating vessels rationale doesn’t explain, alone, the coverage of minimum income protection. The resulting typology of Natili, which includes a group of Central-Eastern countries that have for long been excluded from social assistance regimes, shows important differences with both traditional typologies of welfare systems and social assistance. While each classification builds on different indicators and clusters and in a considerable time gap, some common elements recur as shown in Table 1: in Ireland, the UK and Germany, the broad and inclusive means-tested social assistance represents the prevalent form of income support for the working-age poor. The Northern and the other continental countries, instead, rely more on contributory forms of income replacement, leaving a residual role to social assistance in protecting the poorest among the poor (Immervoll et al., 2022). Still, as also shown in Tervola et al., 2021, social assistance schemes in the Nordic countries are comprehensive, covering the majority of the most in-need population. Southern and Central-Eastern Europe, instead, are generally incapable to provide an adequate follow-up benefit to unemployment insurance in the form of social assistance.

However, some concerns have been raised about the explanatory power of these classifications (Ebbinghaus, 2012; Moreira, 2008; Natili, 2020). Even though some country clusters can be identified, significant variation persists within these groups which can be traced back to the broader and unique contexts of national welfare states (Bahle et al., 2011). Furthermore, the selection of the indicators for

the classification of countries plays a crucial role in making the clusters of each typology differ considerably, as evidenced in Table 1. In this paper, we assess to what extent the more recent classifications match the coverage rates of MIS and social assistance. We consider the actual coverage rate to be a fundamental indicator of the function, the accessibility, and the effectiveness of minimum income protection, as it is the output of legal, institutional, and contextual factors. For this reason, we expect to find a partial correspondence with the typologies based on the latter factors. Precisely, if the principle of communicating vessels is correct, we expect to find traces of these typologies also in real world coverage rates. However, as these classifications are usually based on a multitude of indicators – with coverage often not being included – evidently a full overlap cannot be expected.

Table 1. Summary of selected institutional minimum income scheme classifications.

Typology	Dimensions	Year of reference	Types/categories of WS/SA/MIS	Classification of countries
Lodemel and Schulte (1992) ¹	<ul style="list-style-type: none"> existence of a generalized MIS emphasis on income maintenance rather than on social integration balance between legal rights to benefits and discretionary access central versus local (or regional) responsibility for legislation, administration and finance. 	1980s to 1992	<ol style="list-style-type: none"> Institutionalized regime Differentiated regime Residual regime Incomplete differentiated regime 	<ol style="list-style-type: none"> SE, FI, NO, ES, FR AT, BE, DE, LU, NL IE
Gough et al. (1997) and Gough (2001), based on Eardley et al. (1996))	<p>For social assistance:</p> <ul style="list-style-type: none"> Extent Structure Generosity 	1992	<p>Description of benefits:</p> <ol style="list-style-type: none"> Extensive, inclusive, above-average Low extent, exclusive, above-average Below average, extent, average inclusion, average Minimal extent, very exclusive, very low A Average extent, average inclusion, generous 	<ol style="list-style-type: none"> IE, UK AT BE, FR, DE, ES, IT(?) EL, PT, DK, FI, SE, NL (?)
Pfeifer (2013)	<ul style="list-style-type: none"> Social rights indicators Expenditure on UB and SA Macro-level indicators of need Recipiency rates (only for UB) 	1999-2001	<ol style="list-style-type: none"> Extensive protection – functioning LM “Liberal protection” functioning LM Targeted protection – insider-outsider LM Patchy safety nets 	<ol style="list-style-type: none"> DK, NL AT, PT, IE (UK) FR, BE, SE, FI, DE, ES EL, IT
Natili (2020)	<ul style="list-style-type: none"> Institutional role Generosity Coverage Expenditure Inclusion Regime 	2015	<ol style="list-style-type: none"> Inadequate Sanctionary Protective Enabling 	<ol style="list-style-type: none"> BG, CZ, HR, IT, LV EE, ES, LT, PT, UK DE, EL, IE, LX, NL AT, BE, DK, FI, FR, SE

3. Data and method

We analyze the effective coverage of means-tested minimum income support of last resort. In most countries, minimum income benefits (or, alternatively, social assistance) are non-categorical benefits granted on a means-tested basis for those who do not have (sufficient) access to contributory income support, and do not have the means to provide for themselves. Elsewhere, functionally equivalent categorical benefits exist for specific groups of the working-age population. Obvious examples are means-tested last resort disability benefits, or minimum income schemes that distinguish between those able to work, and those not able to work (Bahle et al., 2011). In this article, we take a comprehensive approach to minimum income benefits: we use as main distinguishing characteristic that they are effectively intended as an income replacement (and not as a supplement, as is the case for child benefits or housing allowances) and are last-resort benefits (which effectively equates to being means-tested in contemporary welfare state set-ups).

Focusing on the coverage rate (defined as those among the pre-transfer poor working-age population receiving MI support) allows to get information on the functioning of social assistance that is complementary to the well-established studies of the eligibility rate, social rights, and social expenditure. First, we can assess the actual take-up, and the actual functioning of the scheme, getting the combined effect of eligibility mechanisms and (non-)take-up of the benefit among the reference population (the poor). We cannot distinguish the separate impact of the two factors on the coverage (Tervola et al., 2021). Second, and most importantly, this indicator allows to investigate the social distribution of the benefit recipients (Otto, 2018).

Our research builds on the cross-sectional data of the European Union Statistics on Income and Living Conditions (EU-SILC). We use the 2019 wave (referring to incomes for 2018) – except for the UK (2018 wave, referring to 2017). The harmonization and the cross-country nature of the dataset makes it best suited for a comparative analysis of the coverage of social benefits (Wirth & Pforr, 2022).

EU-SILC is not exempt of shortcomings. First, as the dataset is survey-based, the information is collected as reported by the respondents themselves, causing both over and under-reporting (Almeida et al., 2022; Meyer & Mittag, 2019). Second, as the income variables are only collected on a yearly basis, we don't know in which months benefits were received, nor the amount granted per month. This limits the coverage assessment to a “long-term perspective” (Tervola et al., 2021; Van Oorschot, 2013). Third, most income-related variables refer to the calendar year prior to the survey period. This leads to a potential discrepancy of the income information with other socio-demographic characteristics that do refer to the year of the survey. However, for most characteristics considered in this article – disability, education level, age group, citizenship, single-parenthood – we expect that the individual situation won't habitually change from one year to the following. Fourth, most social assistance benefits are collected at the household (instead of individual) level, which partially hinders identification of the

specific individuals benefiting from the MI support. However, in many countries the entitlement is determined at household level; then again, even where the entitlement is individualized, the income support is often calibrated considering the size, composition, as well as the resources of the family (Frericks et al., 2020). Furthermore, the social and inclusion activities often involve all (adult) members of the household (Marchal & Marx, Forthcoming). For these reasons, in this article we consider all the individuals in the household as MIS recipients, if MIS receipt is reported at the household level. In principle, this choice could amount to an overestimation of benefit coverage where the number of household members is on average higher, due to numerous children or to the presence of grandparents (Otto, 2018). This potential effect is reduced by our choice of considering only the working-age population (between 16 and 64 years-old). A final limit of EU-SILC for this research is the aggregation of income information in general function-specific variables. While this is done to ensure the comparability of the national datasets, it comes at the cost of detailed information on individual benefits. As each country keeps a margin of discretion in the inclusion of specific benefits into the aggregated variable, the same type of benefits might be included under a different function-specific variable in each country file. Specifically for minimum income protection, this may for instance be the functions “social exclusion not elsewhere classified” or “unemployment benefit”. In addition, the former variable includes for some countries a broad range of benefits, including charity, lump-sum, and municipal benefits. In these cases, coverage numbers can be inflated, and it might be hard to isolate MIS benefits. We undertook multiple actions to identify, for each country, the SILC variables that include the main assistance-based income support benefits, as well as the functionally equivalent categorical benefits of last resort for the working-age population, and to assess their suitability for the comparative analysis at-hand. We first consulted the Mutual Information System on Social Protection (MISSOC) database to identify the relevant active-age minimum income schemes in place in 2018. Subsequently, we verified this information with the National Statistics Institutes (NSI) in each country, asking also which variable(s) of national SILC datasets include the minimum income benefits. As a first validation, we compared our findings with the *MetaSILC*, a database on the contents and comparability of EU-SILC (Trindade & Goedemé, 2019): for most countries, the variables that we identified correspond to those by Goedemé and Trindade for 2015. To further validate our selection, we calculated the number of MIS recipients and the total weighted budget, and we compared our results with the data from the European System of integrated Social Protection Statistics (ESSPROS) and the OECD Social Expenditure (SOCX) and Social Protection Recipient (SOCR) databases. Finally, we consulted – when possible – the *EU-SILC Metadata documentation*. Here, the budget and the number of recipients of the aggregated variable and of each social benefit – and, so, of MI schemes – are included. Tables 2 and 3 of the Annex show the results of this exercise: in most cases, our calculations correspond to the data provided by NSIs.

We consider an individual (or household) a benefit recipient when their income from the relevant income variable(s) is higher than zero (Tervola et al., 2021). As a robustness check, we calculated the

budget and the coverage rates also using a threshold corresponding to one full monthly transfer of the minimum income scheme, as the minimum value reported in the EU-SILC Metadata or, when not available, as indicated in MISSOC. Our results show no relevant discrepancies between the two calculations (see Figure 1 in the annex), except for Denmark and Hungary. Given, also, the documented variety of benefits included in the most disaggregated variable level possible in the EU-SILC for Denmark (Eurofound, forthcoming), we do not include these two countries in our further analysis.

We document both minimum income coverage and non-coverage among the working-age poor population. We principally distinguish between those receiving general minimum income support (SA coverage) and those receiving social insurance (SI). Some income replacement benefits surpass a straightforward social assistance – social insurance dichotomy. They cannot be categorized as fully functionally equivalent to a minimum income benefit of last resort, nor as contributory social insurance benefits. Still, it would be wrong to assess the beneficiaries of this type of benefit as uncovered. We therefore include, where appropriate, an additional category, of those covered by “other income replacement” benefits. By means of example, this category includes the Dutch education allowances that serve to cover living expenses of independently living students. Table 1 in the annex provides a full overview. To identify the uncovered, we zoom in on those of the working age poor population that do not receive any of the three aforementioned types of income replacement benefits. That does not preclude them from receiving minor, supplementary benefits. Those are however not the focus of our exercise.

Finally, we define the poor population as those that are poor before receiving social transfers. Poverty is defined in line with the EU-at-risk-of-poverty threshold, as living in a household where the income is below 60% of the equivalized median income of the population in each country.

4. Results

This paper puts the variation in minimum income schemes' coverage front and center. In what follows, we first assess the coverage rates of social assistance in European countries. Then, we focus on question of whether social insurance and social assistance act as “communicating vessels”. At the same time, we test the suitability of some institutional typologies of MIS for the interpretation these results. Finally, we assess the variation in coverage and under-coverage of the poor adopting an alternative social risk approach.

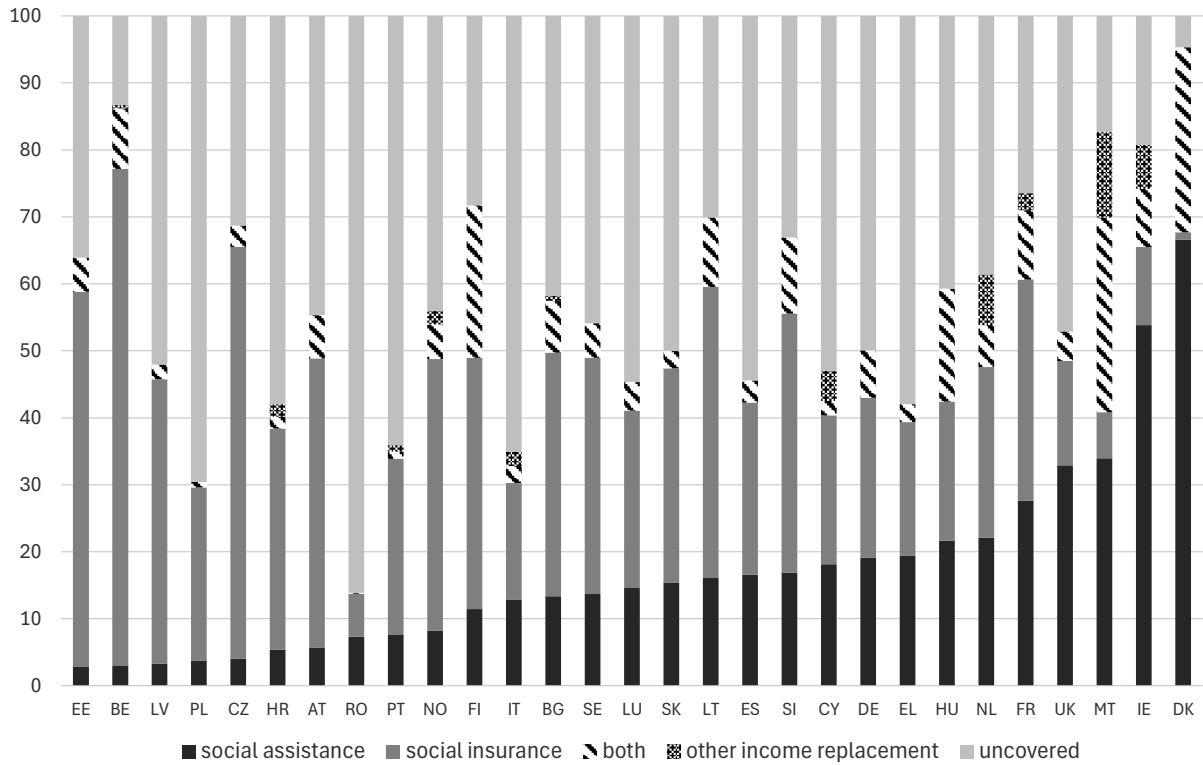
Figure 1 splits the working-age population at risk of poverty before receiving social benefits in 5 categories: i) individuals receiving only last-resort income replacement benefits (social assistance), ii) only insurance-based support (including pensions, sickness, disability, survivor, and unemployment benefits), iii) both assistance-based and contributory income replacement, iv) (nearly functionally equivalent) other income replacement benefits and v) individuals left uncovered by any of these benefits. The figure shows important variation in the way national welfare states cover the (pre-transfer) poor of working-age.

A first, important, observation is that the share of poor individuals who are left uncovered by social insurance and social assistance-based income replacement protection differs quite substantially between countries. The grey bars in Figure 1 range from less than 20% (Belgium) to over 80% (Romania), with many countries covering less than 50% of the poor population in need with income replacement benefits. The Nordic (FI, SE, NO) and English-speaking countries (UK, IE), together with a more mixed group of countries (BE, CZ, FR, LT, LU, MT, SI) perform better, while some Central-Eastern (HR, PL, RO) and Mediterranean (IT, EL, PT) countries leave a larger share of the poor uncovered.

Second, in most countries, the (large) majority of the covered working-age poor is catered for by social insurance-based benefits (green bars). Exceptions are Ireland, Malta, the UK, and Romania, where coverage of social assistance-based benefits equals or surpasses social insurance.

Third, in a limited set of countries, specifically Finland and Malta, and to a lesser extent also Slovenia, Lithuania, France and Ireland, a sizable share of the working-age poor population is covered by a combination of social insurance and social assistance benefits (red bars). This may point towards a different role that assistance-based benefits may play in these countries, as a benefit that is mainly intended to top-up low incomes, whether those are from work or from (partial) social insurance benefits. Alternatively, this may also be a consequence of the annual income information in the EU-SILC (see Data and method section), coupled to specific characteristics of the poor working-age population in those countries. We turn back to this issue below.

Figure 1. Share of poor population left uncovered by main income replacement and composition of income support for those covered.



Note: One is considered an income replacement benefit beneficiary if the income from that benefit category >0. See the annex for robustness checks with alternative cut-off thresholds (figures 6, 7, and 8).

Source: EU-SILC 2019 (2018 for the UK), own calculations and elaboration.

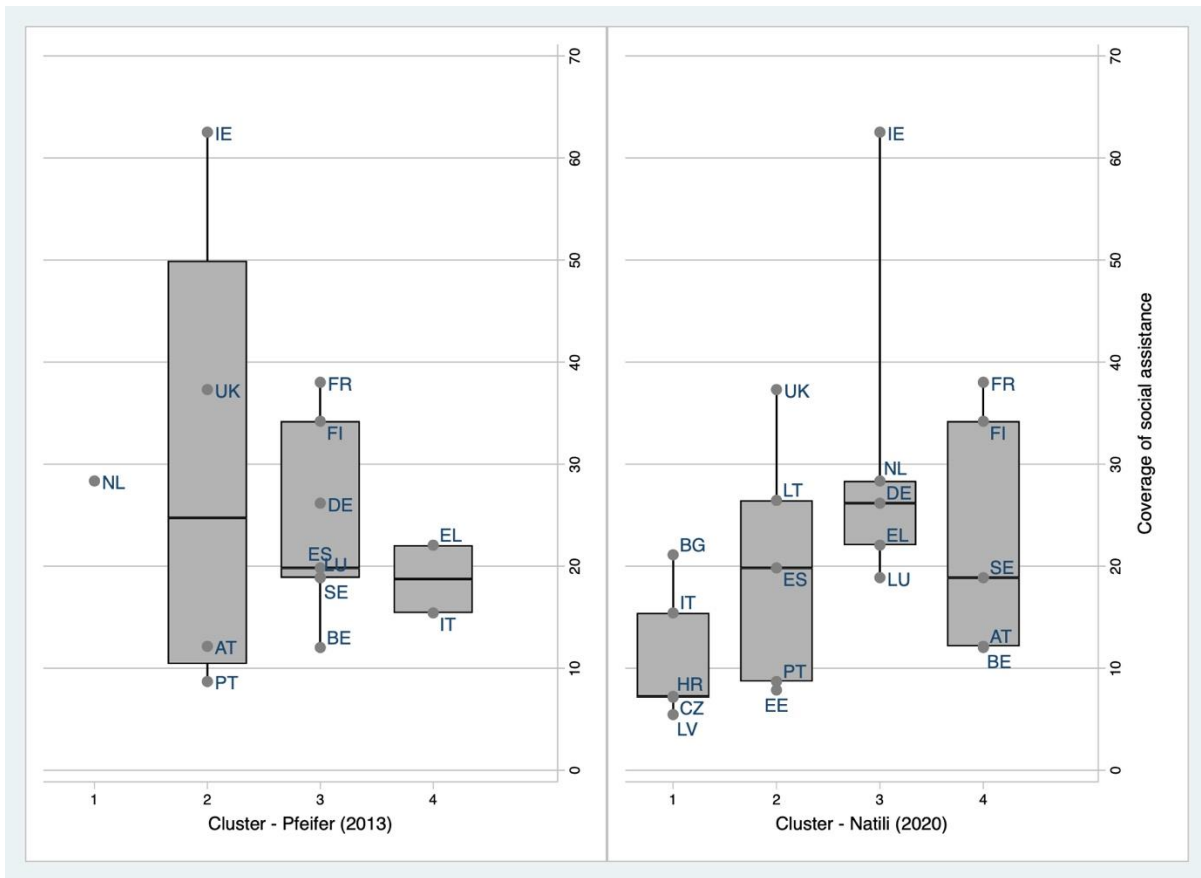
A final observation from Figure 1 is the large variation in social assistance coverage rates (blue bars). At the bottom of the distribution, we find most of the Central-Eastern and Baltic countries (PL, LV, CZ, RO, EE), followed by a more mixed group (PT, HR, BE, AT, NO, IT, SE). The figure shows a similar variance at the top of the distribution: here, we find continental and central-European (FR, SI), Nordic (FI), and English-speaking countries (IE, UK), as well as Mediterranean countries (CY, MT). At first sight, these results only partially correspond to the institutional classifications summarized in Table 1: the position of English-speaking countries in the top of the distribution is coherent with the expectations from the main social assistance typologies, and the same is true for the Central-Eastern and Baltic countries at the bottom. However, the interpretation of the more mixed left side of the graph is less straight-forward, and we find variance for countries usually classified as similar, such as the Nordic ones (Tervola et al., 2021).

In what follows, we move our focus to the institutional “communicating vessels” rationale behind these differences in coverage rates. To this end, we first re-assess the social assistance coverage rates by main grouping of countries proposed in the literature in Figure 2, before we explicitly zoom in on the communicating vessels rationale in Figure 3.

a. Social assistance coverage rates and the balance between insurance and assistance

Figure 2 plots the social assistance coverage rates by typology-based country grouping as proposed in Pfeifer (2013) and Natili (2020). Evidently, the selected typologies rely on a variety of indicators, which are not solely – if at all – related to policy effectiveness (cf. Table 1). Even more so, our data do not refer to the exact same year as those used by either Pfeifer or Natili for their classification. For this reason, we do not expect a full correspondence with our coverage rates. Still, in line with the rationales behind the typologies, we would expect to find some link with the observed coverage rate. For illustrative purposes, we have drawn box plots around the coverage rates in each country grouping, to show the variation within each cluster.

Figure 2. Social assistance coverage of poor working-age individuals before benefits and SA typologies: Social assistance (y) and clusters of the SA typologies (x).



Note: Only the countries that are included in the typologies are included in the graph. Denmark and Hungary are excluded.

Source: EU-SILC 2019 (2018 for the UK), own calculations.

We find only partial correspondence between the clusters and social assistance coverage rates. Generally, the clusters for Central-Eastern countries and Southern-Europe countries are, where they exist, the most accurate in grouping countries according to (low) coverage rates: cluster 4 in Panel A, and cluster 1 in Panel B. Still, we find important evidence for intra-cluster variance, especially when the clusters include many countries (e.g. cluster 2 in Panel A, and 4 in Panel B). For Pfeifer's, we also notice a higher dispersion of the data (especially in cluster 2). At the same time, the medians of the different clusters are within the same range. That suggests that no substantial differences exist between the groups. We find more relevant differences in the median of Natili's cluster, which, instead, present more outlier results (clusters 2 and 3). Finally, it seems fair to say that none of these typologies fully capture the differences in the coverage rates of social assistance.

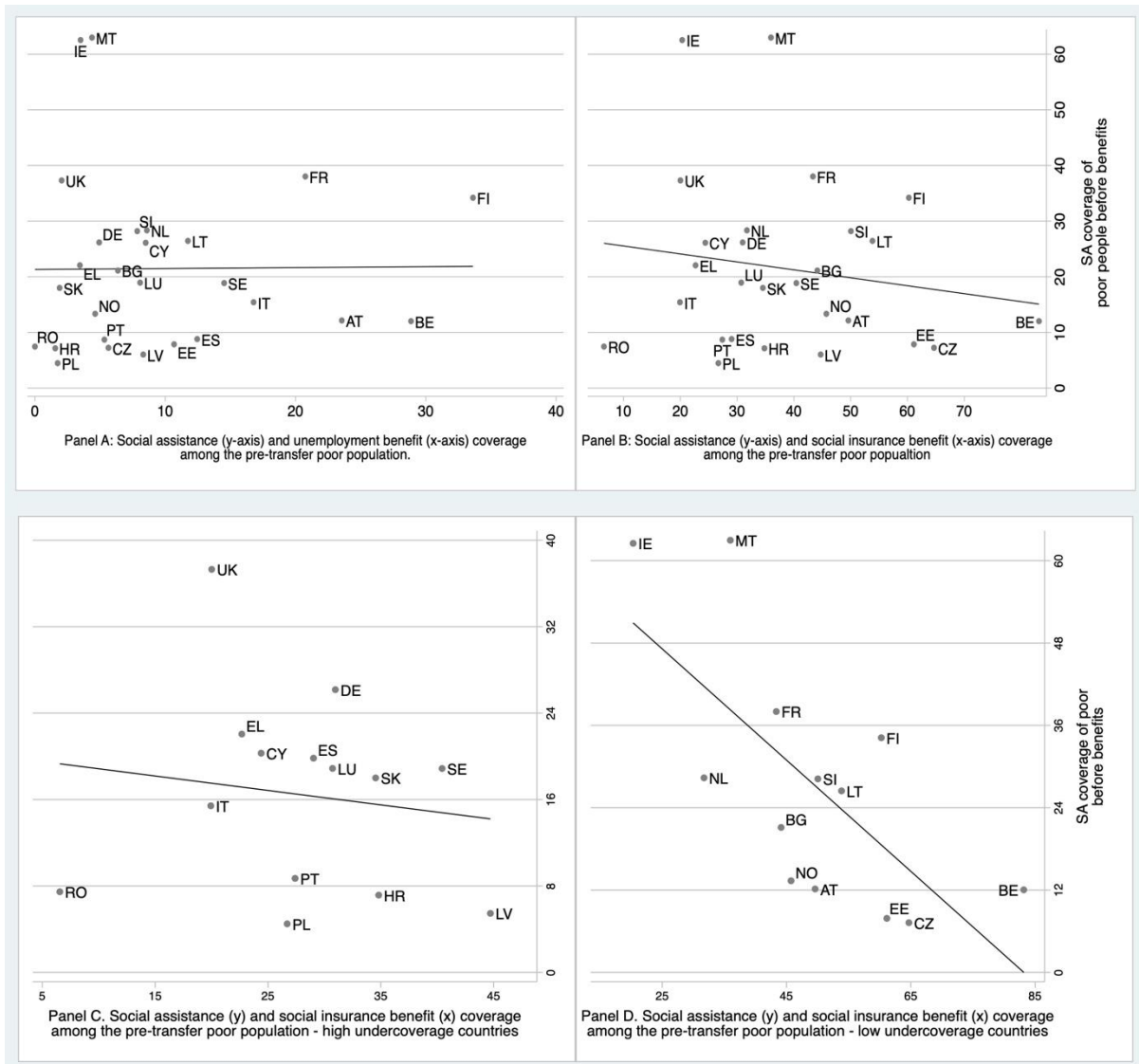
To explore this issue in more detail, we turn to the communicating vessels reasoning on which these typologies (at least partially) build. Specifically relevant from an outcome perspective, is that coverage rates among the (pre-transfer) poor can be low because alternative, insurance-based income replacement

schemes are in fact intended to cover them. Figure 1 already illustrated that social insurance coverage among the (pre-transfer) poor is in many countries fairly high, and in any case far more substantial than social assistance coverage.

Figure 3 shows the correlation between the coverage rates of social assistance (on the y-axis) and of insurance-based income replacement (on the x-axis). On the right-hand side, we consider the full range of contributory income replacement benefits (as defined for Figure 1). On the left, we consider only unemployment protection. The graphs show no strong evidence for the expectation that social insurance and social assistance act as communicating vessels. This is especially true for the coverage of unemployment protection alone, showing virtually no correlation with the actual coverage of social assistance. With a negative correlation of -0.19, the right-hand panel is marginally more coherent with a broader interpretation of the communicating vessels reasoning.

This suggests that income replacement through benefits other than unemployment protection might be more relevant when zooming in on a vulnerable section of the population, and that it is the combined effect of different types of insurance-based benefits that may limit the necessity of last-resort social assistance. Still, the relationship remains tenuous. Panels C and D suggests why this may be the case. Here we show the balance between insurance and assistance coverage among the poor working population for countries with respectively high (panel C) and low (panel D) shares of uncovered poor separately (using a threshold of 45% of the poor population uncovered). Social assistance and social insurance do seem to act as communicating vessels in countries where most of the poor are covered by an income replacement benefit.

Figure 3: Correlation among Social Insurance (SI) or Unemployment Benefits (UB) recipiency rates - x-axis - and Social Assistance (SA) recipiency rate - y-axis - among those in poverty before receiving any social benefits.



Note: Denmark and Hungary are not included.

Panel A and B include all the countries of this research, while Panel C and D distinguish among the countries with a higher (Panel C) and lower (Panel D) rate of undercoverage. High and low undercoverage is based on cut-off of 45% of the pre-transfer poor population.

Source: own calculations on EU-SILC data 2019 (2018 for the UK).

b. New social risks and the covered and uncovered poor

The figures above demonstrate the relevance of looking at the overall coverage and under-coverage of the poor working age population in combination. Figure 1 showed that the uncovered poor form a large part of the population. In this section, we adopt the new social risk lens to gain a deeper understanding of the profiles of those covered or not by minimum income benefits. We assess whether new social risks are overrepresented among the social assistance population vis-à-vis the poor and the total working-age

population, or whether – alternatively – the insurance nor the assistance-based income support systems of the welfare state have stepped in as new social risks proliferated among the poor, causing an overrepresentation of new social risks among the uncovered poor.

We consider young adults, foreign citizenship, single parenthood, precarious employment, low education level, inactivity and in-work poverty as new social risks. To what extent those conditions qualify as "new" social risks is debatable of course. As a reference, we include one further variable that corresponds to an ideal typical "old social risk": disability. Finally, we also assess the situation of people aged 50 and over.

Figure 4 shows the relevance of these nine social risks among three different segments of the working-age population: the poor before benefits who receive assistance-based income support, as defined in the previous figures ("SA recipients", green diamond marker); the poor after benefits ("poor population", red round marker); and the total population (yellow square marker). Figure 5 shows the results of the same exercise but focuses on the uncovered poor rather than those covered by social assistance-based benefits. On the y-axis, we show the share of each of these three groups that is "affected" by the respective social risk (e.g. being young). The line that connects the markers for social assistance recipients and for the total population shows the distance between the two shares, and, as such, provides an indication of the difference in the profile of the two populations. The line is yellow when the share of people confronted by the social risk is higher among the SA recipients. If the opposite is the case, the line is blue and dashed. It must be noted that we focus here on very small subpopulations, that are not always sufficiently represented in the underlying dataset. We only zoom in on significant differences. When the point estimates for social assistance recipients and the poor population do not significantly differ from the total population, they are depicted in grey in Figures 4 and 5.

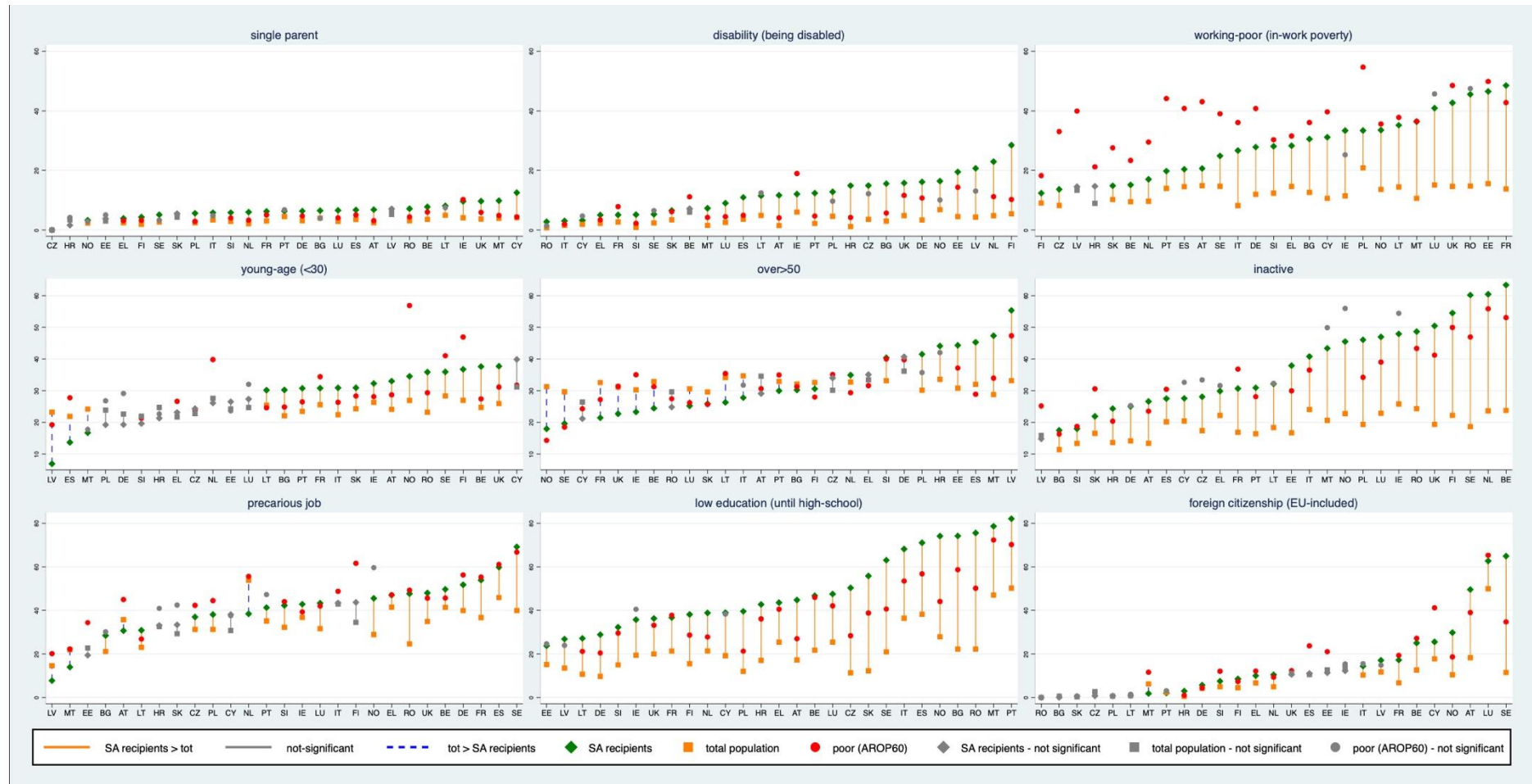
First, we identify the general trends for the social risks across countries (see figure 10 in Annex). We compare the share of persons facing new (and old) social risks among the poor population (dots) with their share in the total population (boxes) to find any significant differences. In general, all the abovementioned risk factors are overrepresented among the poor population, with one exception. Those aged over 50, which we only included as a reference case, do not show higher poverty rates (vis-à-vis the total population) in the Nordics, and in BE, RO, LU, SK, AT, and FR. While the specific new social risks, as well as disability as an exemplary of an old social risk, are generally more represented among the poor than in the total population, shares among the poor are particularly larger in case of inactivity, low-education and, to a lower extent, in the case of precarious job and disability. Single-parenthood is also relevant in most countries, but with only small differences in EL, PL, RO, CY, AT and NL, and large differences in LT and IE. In many (mainly Eastern European) countries, population shares of those with foreign citizenship are so small that it is not possible to make relevant inferences on their poverty status using SILC survey data. In countries for which statistical inference is possible, foreign citizenship is relevantly more represented among the poor than in the total population (SE, LU, BE, FR, EE, ES, CY and MT). Finally, also young working-age individuals are overrepresented among the poor. The

extent to which this happens greatly varies: especially in all the Nordic countries (SE, NO, FI) and in the Netherlands, young age does seem to be a risk factor. As we will return to below, this is likely related to the expectation for young adults to establish their own households relatively early in cross-national comparative terms (Fahmy, 2014).

We then turn towards our third research question: are the new social risks catered for by minimum income protection, or are these new social risks allowed to fall through the cracks of the welfare state? We first assess if new social risks are overrepresented among the poor social assistance beneficiaries. Again, all the risks are more prevalent than in the total population, with the only exception of age-related risks, where we find large cross-country differences. Low-education and inactivity are extensively more represented among social assistance recipients in almost every country – with few exceptions for inactivity. The same concerns, to a lower extent, employment precarity and in-work poverty. Contrary to expectations, age (both for the young and the over-50) seems to play a residual role among social assistance recipients, except for some Nordic (SE, NO) and continental countries (AT, BE, LU, NL). In other cases – especially Central-Eastern European countries – young and over-50 are even less represented among social assistance recipients than in the total and in the poor population. This suggests that, in these countries, most recipients are in their mid-adulthood (30s-to-50s). Interpreting the numbers on foreign citizenship is again hampered by the very low share of foreign citizens, especially in Central-Eastern and Baltic countries, and, consequently, to the insignificance of the results for most of the countries. Still, we can highlight some interesting observations for some countries: foreigners represent a relevant share of working-age social assistance recipients in FR, NO, BE, and SE. In CY and MT on the other hand, foreign citizens are overrepresented among the poor, but not among those covered by social assistance. This implies that they are either covered by social insurance-based income replacement schemes, or that they are left uncovered. Figure 5, that includes the uncovered, suggests the latter is the case. Also disabled persons are overrepresented among the people covered by social assistance, as we include means-tested disability benefits among the components of MIS. Finally, in most cases, in-work poverty is less represented among the poor receiving social assistance than among the poor after all social benefits.

All in all, some countries do seem to target social assistance benefits more towards the new social risks: Northern countries (Finland, Sweden, and Norway), the English-speaking countries (the UK and Ireland) and the low-countries (Belgium, the Netherlands, and, sometimes, Luxembourg).

Figure 4: Share of working-age individuals experiencing a social risk (e.g. being a single parent, having a disability, being over-50, etc.) for three segments of the working-age population: a) the (pre-transfer) poor working-age social assistance recipients, b) the working-age population at-risk-of-poverty (after benefits) and c) total working-age population.



Source: EU-SILC 2019 (2018 for UK), own calculations.

Next, we test if – and where – new social risks are overrepresented among the poor individuals who are left uncovered from any main income replacement benefits (as identified in Figure 1). Figure 5 repeats the analysis from Figure 4 but includes the uncovered poor instead of social assistance recipients. We can spot some similarities and differences between the two figures.

Again, foreign citizenship is not relevantly more represented among the uncovered poor individuals than in the total population, with the same limits of the number of observations. The main evidence comes from CY and – especially – MT, where a large share of poor foreign citizens remains uncovered. For those aged over 50, we do not find a consistent pattern. The over-50s are underrepresented among the uncovered in most countries but over represented in LU, BE, FR, and IE. Instead, the share of young uncovered is generally in line with the poor and total population. In some countries (NL, FR, DE, ES) the relevant share of young uncovered is similar to the one for the poor population; in other cases, it is relevantly larger (HR, LV, CZ); and, in other cases (NO, FI, SE), it is much lower. Again, job precariousness, inactivity, in-work poverty, and, to a lower extent, low-education are relevant among the uncovered poor and are more present among this group than among the total population. On the contrary, disability and single parenthood are less relevant, with the former risk being often underrepresented among the uncovered – with the main exceptions of FR and NO. Interestingly, we find that in Nordic, English-speaking, and low-income countries the share of single parents uncovered is much lower than the share in the poor population.

However, the risk-profile of the left-behind is generally more associated to the profile of the poor than it happens to be the case for MIS beneficiaries. This is evident for low-education, single-parenthood, foreign citizenship, and inactivity and, to a lower extent, precariousness. From figure 5, we find that, in general, the majority of the left-behind are in-work poor – partially employed in precarious jobs –, low educated individuals, and, to a lower extent, inactive people and they are more often under-30.

As for the cross-country comparison, we find puzzling evidence. We find a higher share of uncovered people subject to (new) social risks in the same countries where these risks were more represented among social assistance recipients. That is the case for young age, foreign citizenship, and inactivity. Looking at figure 5, this seems primarily due to the higher prevalence of these new social risks also among the poor and the total population.

Figure 5. Share of working-age individuals experiencing a social risk (e.g. being a single parent, having a disability, being over-50, etc.) for three segments of the working-age population: a) working-age poor individuals uncovered by main income support measures, b) the working-age population at-risk-of-poverty (after benefits) and c) total working-age population.



Source: EU-SILC 2019 (2018 for UK), own calculations.

5. Discussion and conclusion

This paper sheds new light on the reciprocity of last resort minimum income support (MIS) among the working-aged people of Europe who are at risk of poverty. We ask: 1) What does the actual coverage of MIS among the working-aged poor (before benefits) look like in EU countries for which there is adequate data? 2) Is MIS coverage more extensive where social insurance coverage is less comprehensive? 3) What is the profile of MIS recipients as well as of those left uncovered by any scheme? Are those affected by what one could label "new social risks" overrepresented in final safety net provisions, as is so often argued?

First, we show that the share of poor individuals effectively covered by means-tested income support varies a lot. Coverage ranges from under 5 per cent of the pre-transfer poor population in countries like Poland and Latvia to upwards of 60 per cent in countries like Ireland and Malta. However, these are two exceptions. In most countries, coverage is well below 40 per cent and in about half of the EU countries even below 20 per cent.

These coverage rates do not really fit classifications of social protection regimes, notably the ones developed by Pfeifer (2013) and Natili (2020) in which the role of social assistance vis-à-vis social insurance is made explicit. While one would assume that MIS coverage rates are largely determined by the reach and adequacy of social insurance arrangements, that picture is not as simple. MIS receipt rates are generally lower in countries with high social insurance coverage, but the picture is very fuzzy. So, it is not the case that social assistance and unemployment protection simply act as "communicating vessels", as suggested by Pfeifer (2013).

In fact, a striking finding emerging from this study is that large swathes of the needy are uncovered by either scheme. The share of pre-transfer poor individuals who are left uncovered by both social insurance and social assistance ranges from less than 20 per cent in Belgium to over 80 per cent in Romania. In many countries less than the 50 per cent of the pre-transfer poor population is uncovered by any of the income replacement benefits included in this study.

This paper has also asked whether MIS reciprocity is higher among those affected by what one could call a "new social risk". It has been argued many times that the traditional welfare state, and social insurance in particular, is ill-equipped to offer adequate protection to those affected by social risks that emerged and rose to prominence after the welfare state reached maturity in many countries. Think of a low level of education, single parenthood, or in-work poverty. Young people and migrants are also considered as lacking access to contribution based social protection.

There appears to be some truth to this perception. A large share of social assistance recipients experience what one could call new social risks, specifically: inactivity, low-education, and in-work poverty. We also find higher rates of receipt among the disabled, and, to a lesser extent, among single parents. But

young people and people with a foreign citizenship are not strongly overrepresented. Yet patterns are not very consistent, pointing to manifold national idiosyncrasies in coverage mechanisms.

Finally, we considered the profile of those in need of financial support left uncovered. While again national patterns differ, the working poor clearly emerge as being at high risk of being left-behind although there is still a possibility that they get benefits through other channels than the social insurance and social assistance benefits covered here. A number of countries have in-work benefits in place, sometimes in the form of refundable tax credits. Our focus on income replacement benefit neglects the potential of these supplementary benefits. Still, it is worth pointing out that many of the working poor are poor because they have precarious jobs with low or patchy work intensity and not because they have low earnings that may be supplemented. One would expect social assistance schemes to play a significant role here.

This paper reveals striking differences in social protection coverage in the EU. We have gone as far as we could in making our measures of social insurance and social assistance receipt as valid and robust as is currently possible with the EU-SILC. Still, some limits must be pointed out. The main one concerns the use of EU-SILC aggregated variables for MIS. While we are confident that minimum income protection benefits are included in the variables such labeled we cannot not exclude the possibility that other residual benefits are also included. Clearly, a more refined approach remains desirable. That would require changes in the way EU-SILC variables are categorized. Ideally, one would want a variable there that is restricted to minimum income support in the strict sense. Furthermore, we see great potential in the combination of the benefit reciprocity approach with the use of microsimulation techniques (e.g. EUROMOD) to detect the eligible households and individuals.

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Table 2. Underlying EU-SILC variables to categories “social assistance” and “other income replacement”

Country	Variables for MIS and social assistance (SA)	Variables for other income replacement
AT	hy060g=hy063g	py143g + hy053g
BE	hy063g + py103g	py143g
BG	hy063g	py143g + py134g
CY	py093g + py103g + py133g	py143g
CZ	hy060g=hy063g	py144g
DE	hy063g + hy073g + py093g	py143g + py133g
DK	py093g + hy063g	py143g
EE	hy064g	py144g + py134g
EL	hy063g	py144g
ES	hy063g + py133g	py093g + hy053g + py143g
FI	hy063g + py133g	py143g
FR	hy063g	py143g + py133g
HR	hy063g	py143g + py133g
HU	hy063g	py133g + py144g
IE	hy060g/hy063g + py093g + hy053g	py143g + py133g
IT	hy063g	py143g + py133g
LT	hy063g + py133g	py143g
LU	hy063g	py103g + py143g + py133g
LV	hy063g + py094g	py143g + py133g
MT	hy063g	py123g + py103g + py144g + py134g
NL	hy060g=hy063g	py113g + py143g + py144g
NO	hy060g	py143g + py133g
PL	hy060g=hy063g	py143g + py133g + py113g
PT	hy060g=hy063g	py143g + py133g + py113g
RO	hy060g=hy063g	py143g + py133g + py113g
SE	hy063g + hy064g	py134g + py144g + py143g
SI	hy060g=hy063g	py133g + py143g + py144g
SK	hy063g	py133g + py144g
UK	hy063g	py133g + py113g + py103g + py143g

Table 3. Robustness check identified recipients using EU-SILC variables with ESSPROS, OECD SOCX and NIS Metadata

Country	Recipients_i MIS + SA (not weighted, SILC)	Recipients_i MIS + SA (SILC)	Recipients_hh MIS + SA (not weighted, SILC)	Recipients_hh MIS + SA (SILC)	Budget MIS (SILC)	Budget MIS (ESSPROS)	Recipients MIS (SOCX, 2018)	Recipients MIS variable, EU-SILC Metadata	Budget MIS variable, EU-SILC Metadata
AT	282	296,376	180	168,941	1,175,109,365	840,006,000	172 447	200,000	1,333,568,853
BE	417	301,087	231	178,652	1,427,674,014	1,535,000,000	148 330	273,528	1,321,072,987
BG	934	347,513	420	154,055	63,702,860	28,000,000	102 744 (2016)	277,922	157,015,189
CY	454	45,586	293	27,254	177,784,326	154,734,190	172 693	45,000	89,000,000 MIS (+ 152,000,000)
CZ	122	107,461	72	59,826	91,708,107	202,410,000	43 664 (2016)	64,669	2,469,553,936
DE	1019	4,145,812	781	3,184,648	19,920,142,368	3,889,000,000	69 040	3,193,291 + 3,411,894	11,193,851,053 + 19,176,421,646
DK	4616	2,580,811	3,186	1,805,845	3,287,868,391	1,609,337,499	370 159		
EE	559	40,582	274	22,089	16,894,570	12,670,000	17 645	45,644	22,644,943
EL	2913	838,965	1,522	397,901	554,565,423	667,434,020	6 317	643,000	622,000,000
ES	995	1,157,567	563	643,855	3,110,821,784	1,668,514,320	871 491	820,438	3,701,230,614
FI	1089	415,851	738	306,934	1,189,571,901	698,000,000	209 159 (2017)	315,827	622,657,928
FR	3194	8,183,193	1,696	4,597,835	11,714,693,038	21,358,000,000	152 253		
HR	425	83,187	234	43,274	43,794,109	457,550,000	1 903 800		
HU	3352	2,374,180	1,766	1,207,515	94,277,571	872,947	72 759		
IE	1582	813,565	877	446,887	3,494,112,377	200,000,000	86 109	373,501	1,769,526,783
IT	753	1,814,270	400	853,834	1,464,122,624	3,825,000,000	16 269		

Country	Recipients_i MIS + SA (not weighted, SILC)	Recipients_i MIS + SA (SILC)	Recipients_hh MIS + SA (not weighted, SILC)	Recipients_hh MIS + SA (SILC)	Budget MIS (SILC)	Budget MIS (ESSPROS)	Recipients MIS (SOCX, 2018)	Recipients MIS variable, EU-SILC Metadata	Budget MIS variable, EU-SILC Metadata
LT	695	197,913	354	100,732	87,237,156	62,000,000	243 027		
LU	491	31,137	242	17,798	40,551,889	203,947,450	40 440	33,593	210,000,000
LV	172	28,499	143	23,047	7,158,307	5,000,000	10 316		
MT	1880	89,672	1,032	46,408	61,201,010	9,000,000	13 659	25,939	9,933,056
NL	1250	1,028,076	801	673,470	7,175,635,735	6,000,000	8 542	767,110	7,290,740,000
NO	343	156,381	180	108,767	579,876,197		497 206		
PL	772	512,861	393	242,365	231,053,237	1,516,330,000	60 718		
PT	1081	207,143	517	102,324	264,160,865	347,940,000	317 560		
RO	259	374,226	118	164,345	108,643,601	636,000,000	101 551	240,000	532,039,905
SE	446	384,265	217	227,685	1,810,333,206	12,116,000,000	206 000	280,000	19 billion
SI	2131	163,606	888	83,559	235,618,379	226,100,000	52 429	114,955.958	250,789,920
SK	513	194,942	188	78,990	123,776,489	160,270,000	72 024	81,000	120,957,472
UK	3388	6,385,122	1,766	3,174,718	13,397,500,531		851 017		

Note. The number of recipients (both weighted and not-weighted) as well as the budget in columns 2 to 6 are calculated by using the variable for assistance-based income replacement benefits as defined in the paper and in table 2. Instead, the budget and number of recipients from ESSPROS and SOCX (columns 7 and 8) refer only to minimum income benefits. Finally, the number of recipients and the budget included in EU-SILC Metadata (columns 9 and 10) refer to the SILC variable for minimum income benefits, which might include other income support benefits. In principle, the numbers from our calculations are expected to be higher than those from other sources, as more variables are included.

The budget is expressed in national currency.

Figure 6. Coverage rate of assistance-based income replacement among the pre-transfer poor population using three minimum thresholds of resources to be considered as social assistance recipient.

a) Basic: the threshold is equal to zero. b) Basic with min threshold: the threshold is equal to the minimum value of benefit reported in SILC Metadata or, if not available, to one monthly benefit (as defined in MISSOC). c) Basic with min threshold (X3): the threshold is equal to 3-times the minimum value of benefit reported in SILC Metadata or, if not available, to one monthly benefit (as defined in MISSOC).

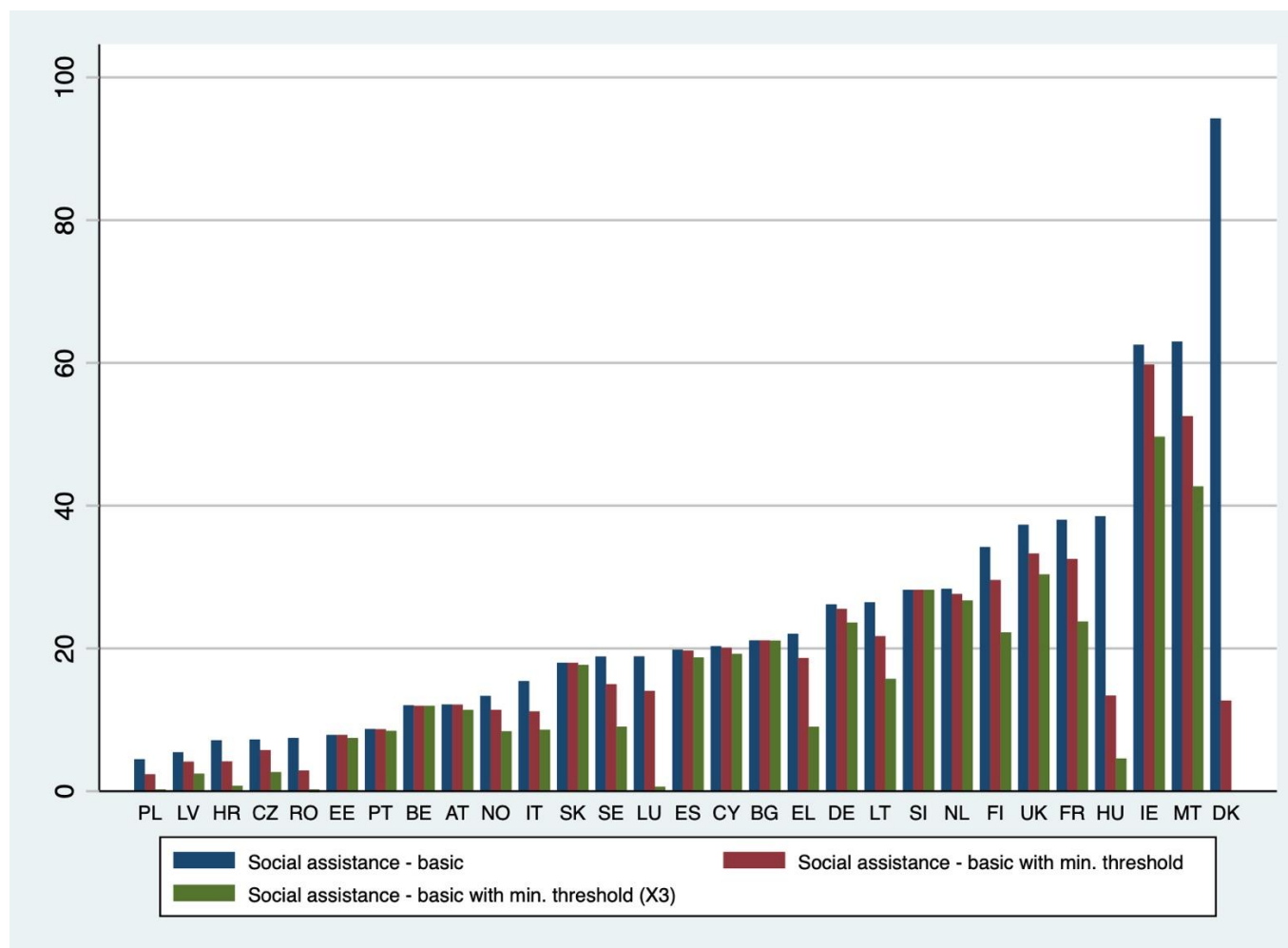


Figure 7. Coverage of working-age individuals being poor before benefits by income replacement benefits – robustness check: only considered covered with benefit at least equal to the minimum value of benefit reported in SILC Metadata or, if not available, to one monthly benefit (as defined in MISSOC).

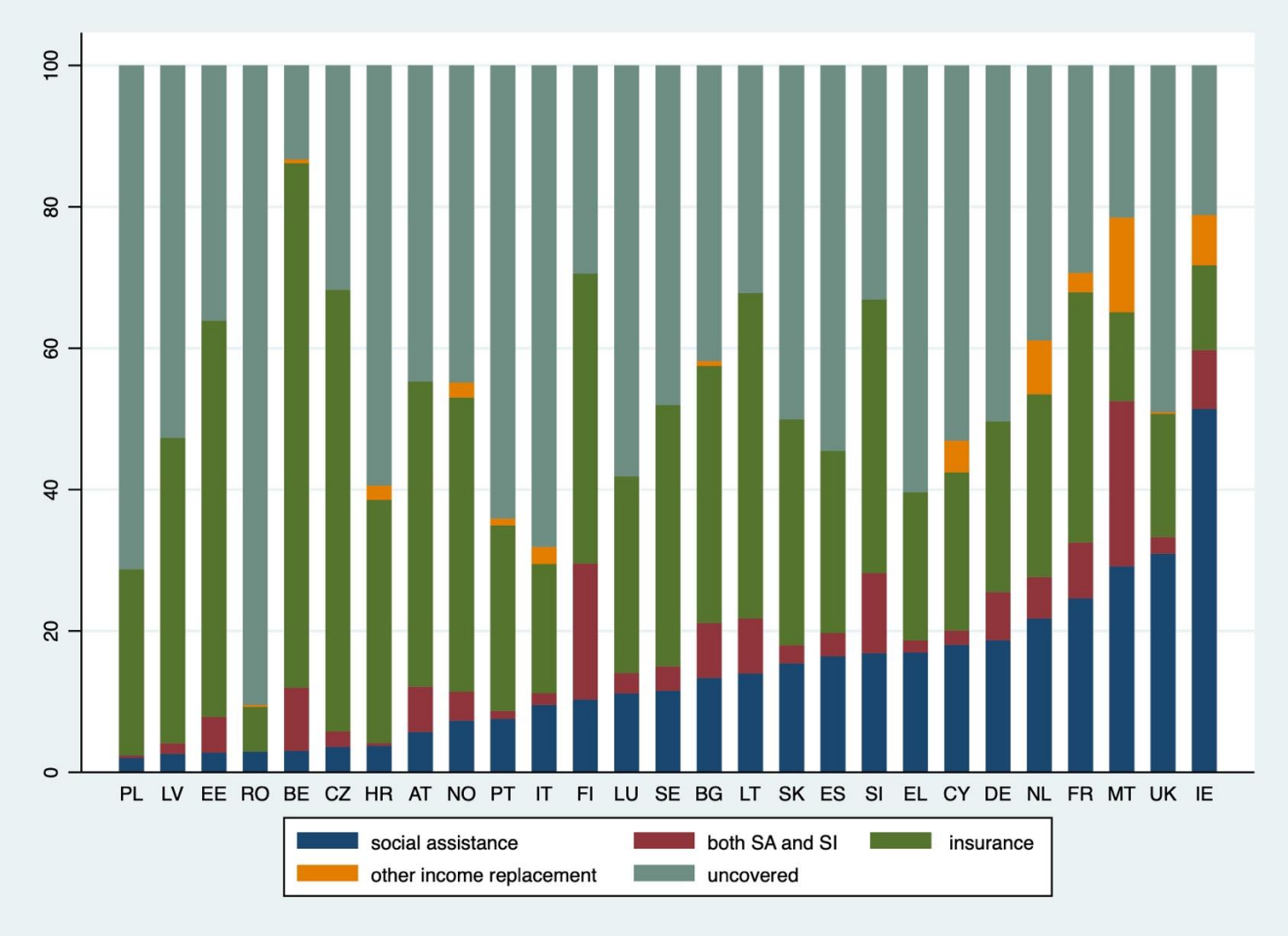


Figure 8. Coverage of working-age individuals being poor before benefits by income replacement benefits – robustness check: only considered covered with benefit at least equal to three-times the minimum value of benefit reported in SILC Metadata or, if not available, to one monthly benefit (as defined in MISSOC).

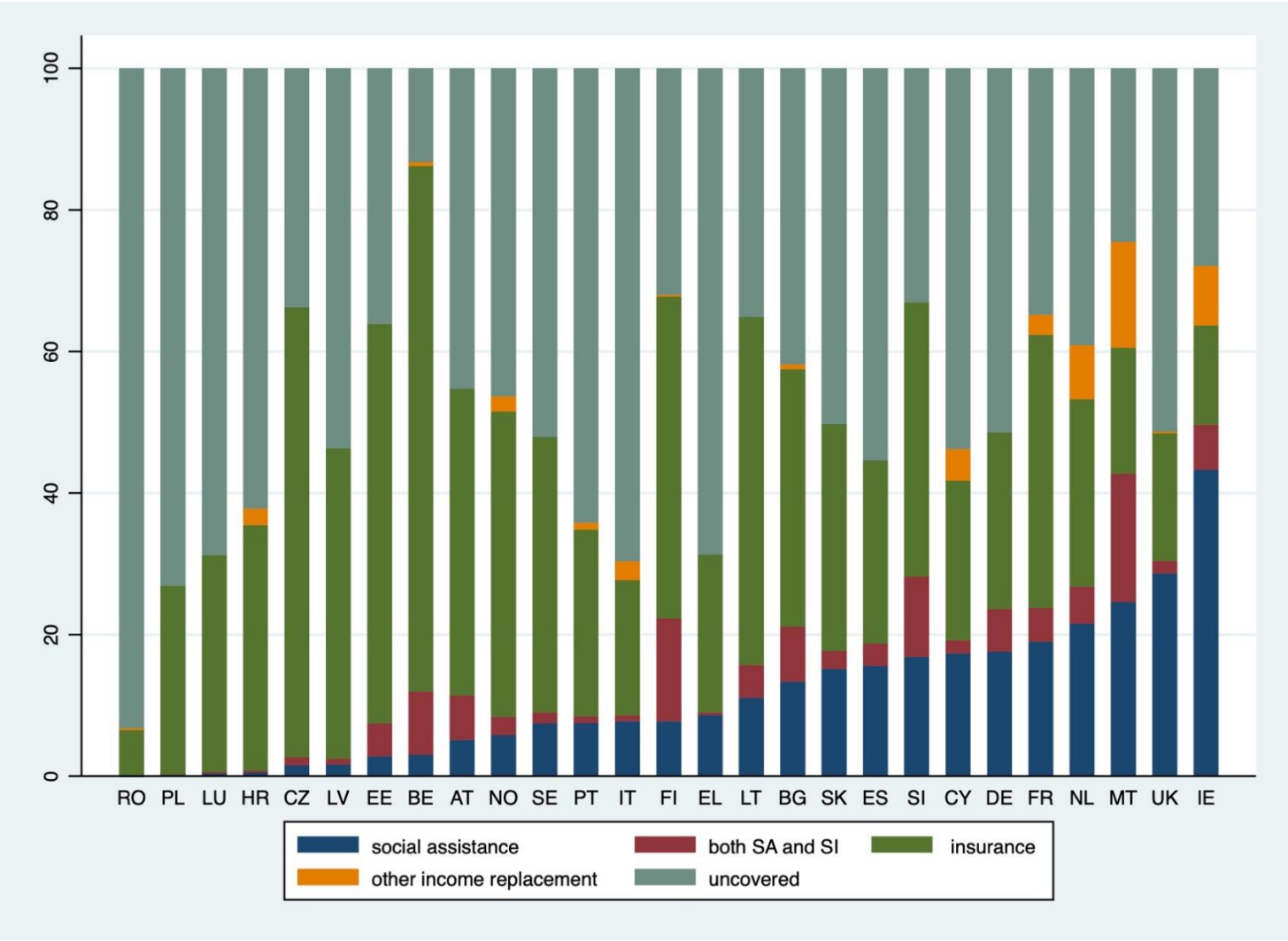
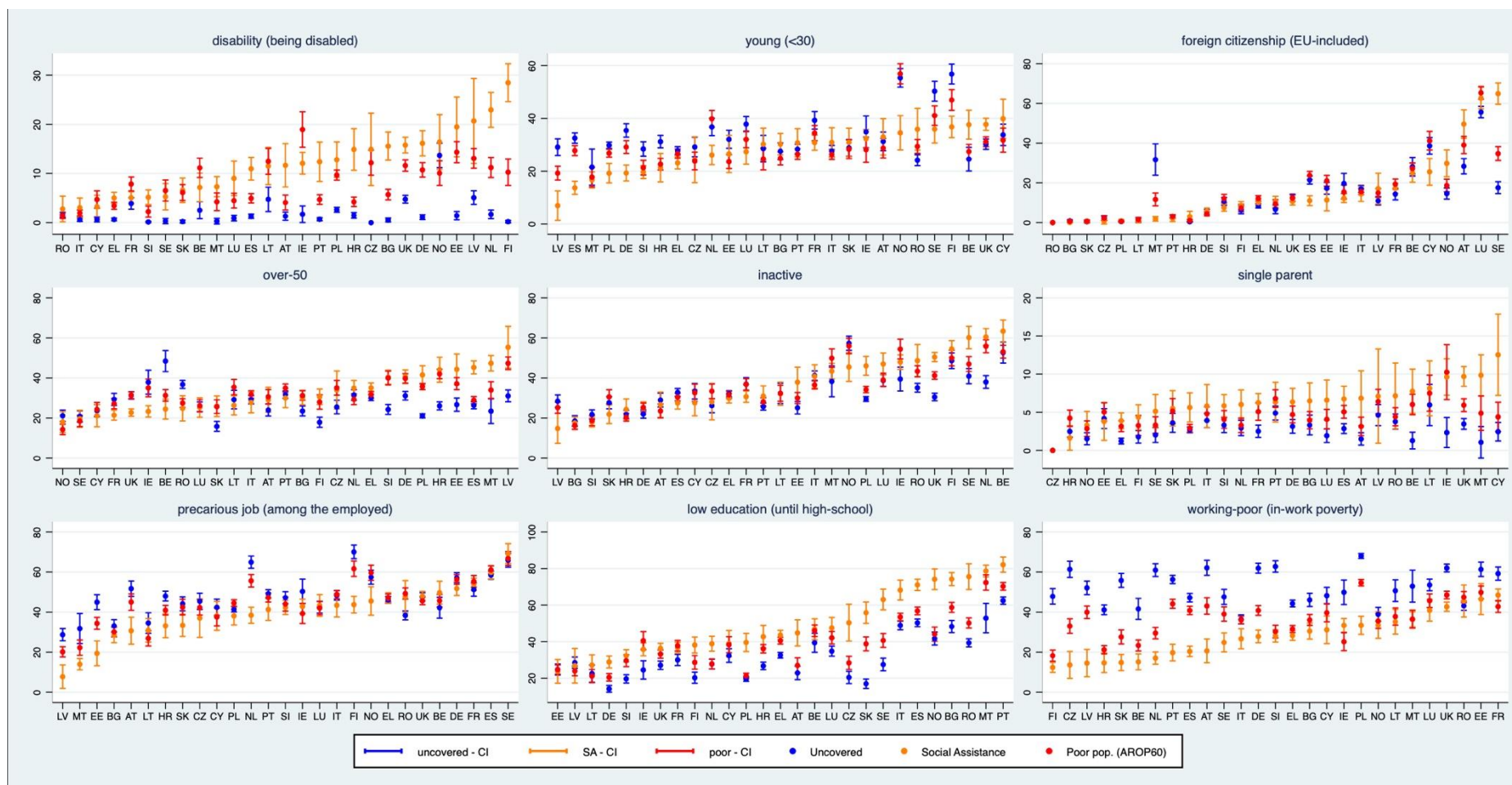
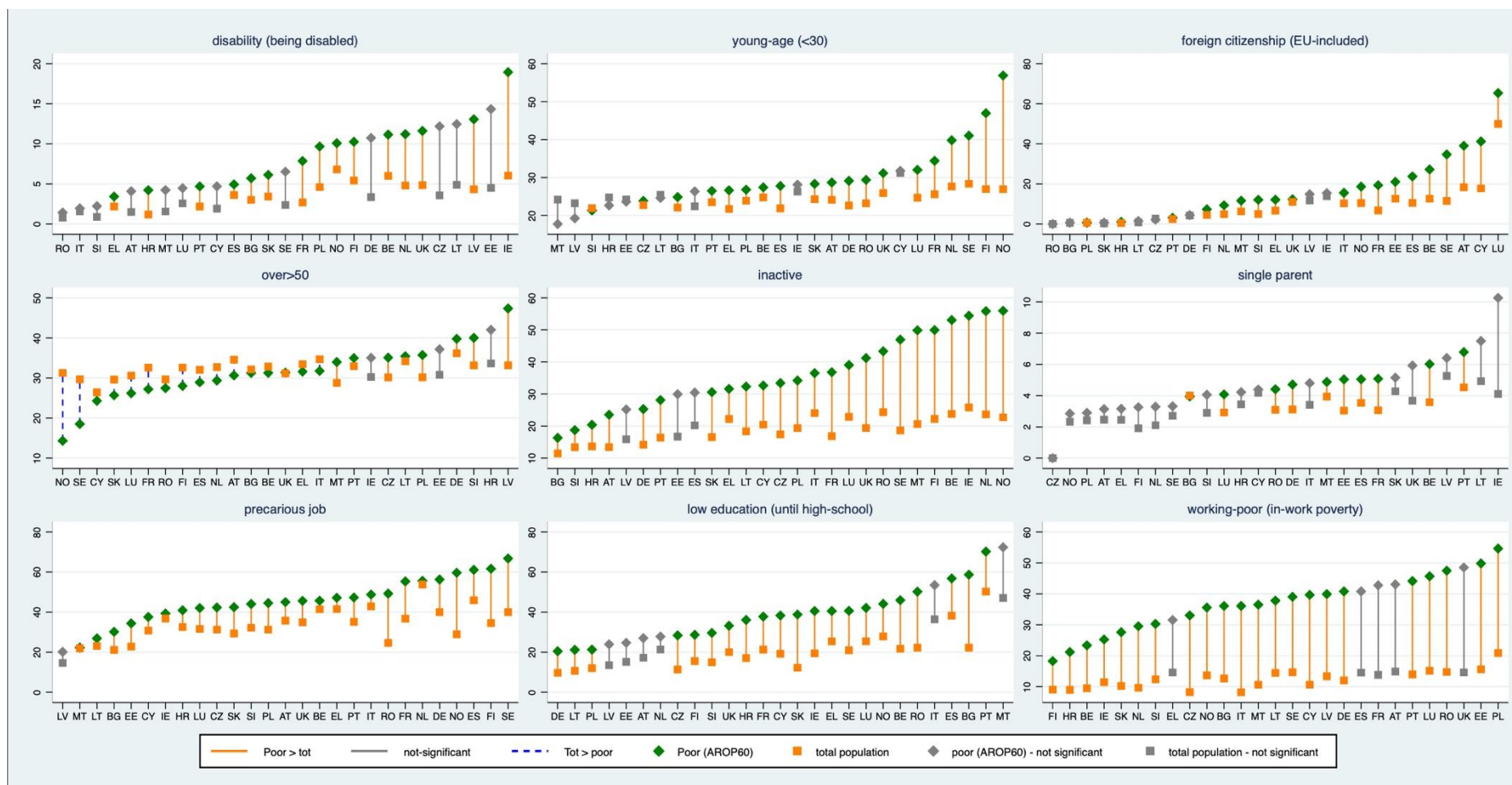


Figure 9. Share (with confidence intervals) of individuals subject to (new) social risks among a) the pre-transfer poor social assistance recipients (yellow marker), b) the pre-transfer poor uncovered individuals (blue marker), and c) the after-transfers poor population (red marker).



Note. In the figure, the dots represent, for each country, the share of individuals subject to social risks among the three segments of the population. The dots are contained among two dashes connected by a line which represent the confidence intervals of the numbers in the dots.

Figure 10. Share of working-age individuals experiencing a social risk (e.g. being a single parent, having a disability, being over-50, etc.) for the (after-transfers) poor population (green diamond marker) and the total population (yellow square marker).



Note. The lines connecting the markers represent the distance between the average shares of individuals subjects to social risks for the (after-transfers) poor and for the total population. When the average is higher among the poor, the line is full and yellow, while it is dashed and blue when the share of people subject to social risks is higher among the total population. When the results for a country are not statistically significant (based on a t-test analysis) the line and the markers are grey.