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DISCUSSION PAPER SERIES

IZA DP No. 16967

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ABSTRACT

Is Poverty Reduction in Europe Doomed? Conjectures, Facts and a Cautiously Optimistic Conclusion

There has not been much progress on the poverty front in Europe over recent decades, at least if we take it as a relative phenomenon in affluent societies. There is a lot of pessimism about the possibility of making any real progress at all. Some argue that adequate poverty relief is simply too expensive or that it would put too much of a redistributive burden on the electorally powerful, making it politically difficult, if not infeasible. Another prominent argument is that wage floors and thus out-of-work benefit levels are inexorably under pressure, making poverty relief both harder to achieve and more expensive in budgetary terms. This paper sets out these accounts and focuses on what has been happening to statutory, absolute and effective wage floors in Europe over the past decades. We ask whether progress on the poverty front through pushing up wage floors and subsequently out-of-work benefits is a realistic prospect. We see reasons for optimism.

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Keywords: poverty, income distribution, Europe

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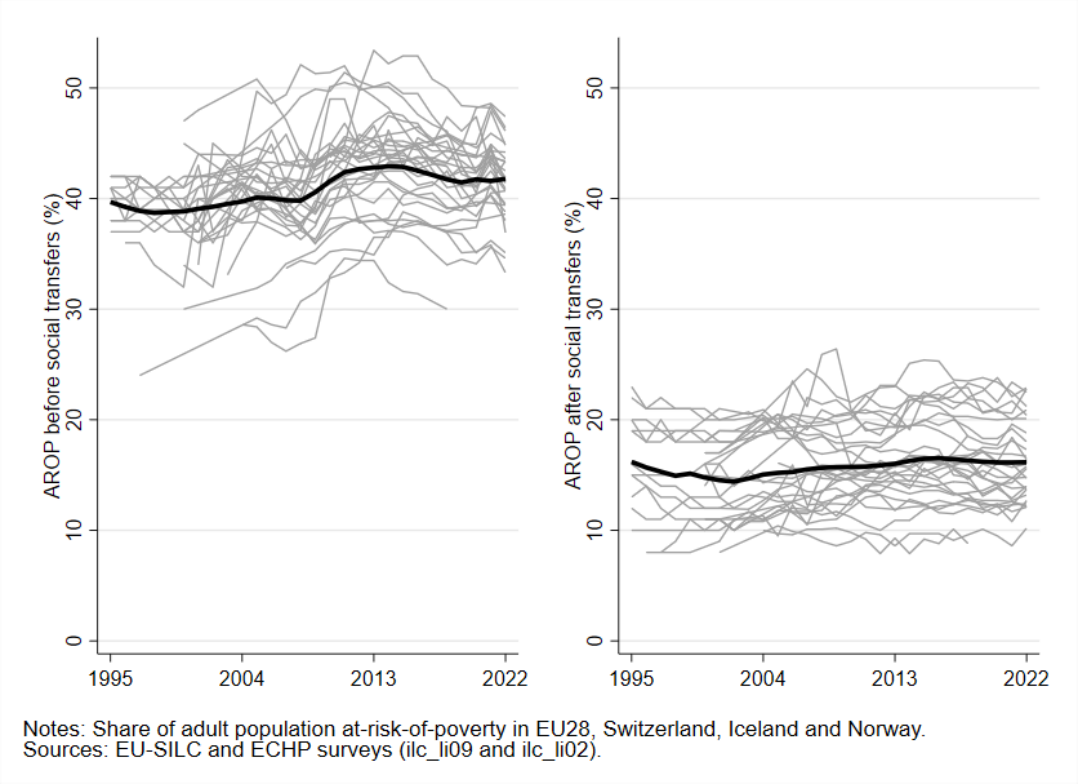
Introduction: misers, cynics or glass ceilings? Why is poverty so persistent?

If words offer good guidance, the European Union and its Member States have cared deeply about poverty and social exclusion for decades now. It would be easy to quote countless speeches, reports, documents and resolutions in evidence. Yet outcomes are clearly lagging the rhetoric. Even before the Great Recession, when times were good and job opportunities plentiful, relative poverty rates remained stubbornly high in many EU countries (Figure 1)[1].

Developments since have not been uniformly disappointing, especially since poverty reduction appears to be an uphill struggle, as Appendix figures A1 and A2 further document, but the situation in most countries continues to fall well short of stated ambitions.

Figure 1. At-Risk-of-Poverty (AROP) before and after social transfers, 1995-2022.



Notes: Share of adult population at-risk-of-poverty in EU28, Switzerland, Iceland and Norway.
Sources: EU-SILC and ECHP surveys (ilc_li09 and ilc_li02).

Europe's disappointing poverty trends have been amply documented and lamented (cfr for example Cantillon 2022; Gabós et al., 2024). There has been a hesitant but unavoidable recognition among policy

[1] As we argue in Marchal and Marx (2024), the idea that every person living amidst the relative affluence of the rich world has a right to minimum means of existence enabling not merely physical survival and but also a modicum of social participation, be it frugally and soberly, is close to uncontested. As we further argue there, this essentially requires us to measure poverty in a relative way, even if, in Sen's words, there is an irreducible absolutist core in the notion of poverty. In line with current convention, we measure poverty using the 60% of equivalent disposable income line.

makers, certainly at the EU level, that outcomes have fallen painfully short of lofty proclamations and intentions[2].

Responding to criticism that the EU was too much of an economic project and its 'social dimension' too weak, the 2015 Five Presidents' report stated the ambition that the EU needed to be "Triple A" on social issues (Juncker et al. 2015). That culminated in the European Pillar of Social Rights, a common declaration of principles signed by the Commission, Parliament, and every EU Member State in the Council (European Commission, 2017). Particularly relevant in the context of this article are principles 6 and 14, calling for fair and adequate wages, and adequate minimum income benefits respectively.

These principles were later reiterated in the Action Plan on the implementation of the European Pillar of Social Rights, which, among other things, states: "Minimum income schemes are essential to ensure that no one is left behind. While in place in all Member States, minimum income schemes vary significantly in their adequacy, coverage, take-up and articulation with labor market activation measures and enabling goods and services, including social services. In many cases, the eligibility criteria and the levels of benefits would deserve to be modernized." (European Commission, 2021)

The observation that minimum income schemes "vary significantly in their adequacy" is a bit of an understatement. The reality is that minimum income guarantees in Europe fall well short of widely accepted poverty thresholds. Figure 2 shows the adequacy of minimum income protection provision in the EU for two household types, taking into account the main non-contributory benefits that people in need of minimum income support are entitled to by law. They may have access to other benefits or service that involve some degree of discretion on the part of the provider. On the other hand, they may not take up the rights to which they are entitled because of knowledge, administrative or other barriers, such as shame (for a more extensive discussion see Marchal and Marx, 2024).

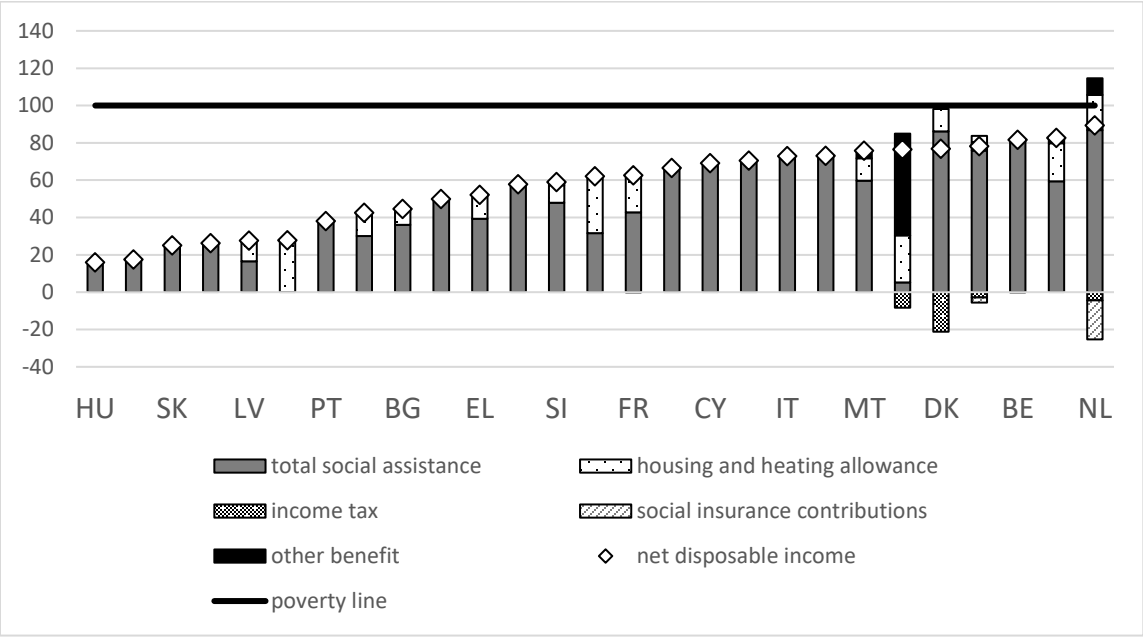
Box: how we compare minimum income protection across countries

Figures 2 is calculated for a single person and a divorced single parent with two children. Adults are 35 years old; children are aged 7 and 14. The households have no assets and no incomes other than those explicitly guaranteed by the tax benefit system. Housing costs are assumed to be equal to the median housing costs for the respective household type according to the 2015 EU SILC numbers (uprated to the relevant price levels for other years). The household lives in a private rented dwelling that confirms to the eligibility rules for housing allowances. We furthermore assume that out-of-work adults are looking for work, and that the children regularly attend school. The other parent of the children living in the lone parent household is known, but unable to pay alimony. The households live in the largest non-capital city or urban region in each country. More details on the underlying assumptions, as well as validity checks relative to the OECDs TaxBen model and the Swedish Institute for Social Research SaMIP data, are available in Marchal et al. (2018). Data for the US are reported in Aerts et al. (2022). Data for the UK represent the situation in 2020. We exclude temporary measures specifically linked to the COVID crisis. At-risk-of-poverty thresholds are 60% of median equivalised (modified OECD scale) disposable household income, available from Eurostat (2024). Source: MIPI-HHoT, based on the HHoT extension to EUROMOD I4.0+ , with assumptions as described in Marchal et al. (2018).

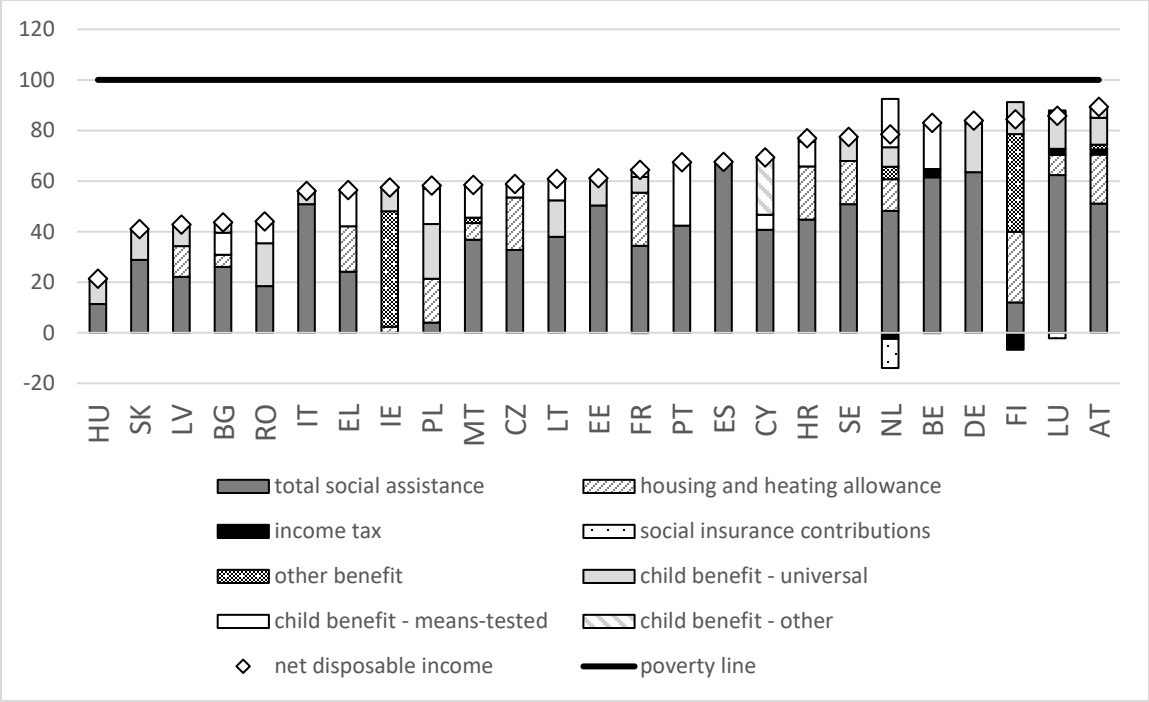
[2] The systematic monitoring of social outcomes at the EU level has made this recognition inescapable, see for example the annual Joint Employment Reports that are part of the European Semester, the EU's flagship framework for the coordination and surveillance of economic and social policies. See also the Social Scoreboard.

Figure 2. Minimum income protection packages for the non-working of active age, relative to the poverty line, 2023.

Panel A. Single person household



Panel B. Single adult with 2 children



Note: Horizontal line at the 100 mark denotes the national poverty threshold for each country. Countries ranked by net disposable income relative to the poverty line.
Source: MIPI-HHoT (see Marchal et al. 2018). We thank Elise Aerts and Alessandro Nardo for valuable assistance in updating this dataset. For more details see Marchal and Marx (2024).

This begs the question: why are minimum income provisions in Europe not more adequate?

There is one very obvious potential reason: it would cost too much money. People would simply not be willing to pay the taxes required to get everybody's incomes to the poverty line. Mind you, we are not talking here about social transfers augmenting incomes *above* the poverty line, even if normative arguments can be made that advanced welfare states should not be satisfied with bringing everybody to the poverty line as a policy objective. We mean the much smaller intervention of lifting those households whose current incomes are beneath the poverty threshold exactly *to* the sufficiency level the poverty line marks.

As it happens, several studies have calculated the redistributive effort required to lift all household incomes up to the poverty line, defined as 60% of median equivalized household disposable income. That number is strikingly small: in some countries, not even one percentage point of GDP. The Dutch Social and Cultural Planning Bureau, for example, calculated that the effort required to bring every Dutch person to the level of the poverty line there would amount to less than half a percent of GDP (Olsthoorn et al. 2020). In fact, in most countries the expenditure needed to bring every single citizen to the 60% of median relative poverty line would not even be in excess of two or three per cent of GDP (see for example Collado et al. 2019; Vandenbroucke at al. 2013).

Of course, such back-of-the-envelope calculations are only worth what they are worth. Mechanically calculating the budgetary expense of lifting all household incomes to the poverty line ignores how people would behave the day after. Working people might switch from low-paid, menial jobs to social transfers. People already dependent on transfers might well move off income support at a slower pace or not at all. People currently living on contributory benefits above the minimum might well demand increases, to get enough in return for their contributions. The real cost of such an operation is almost certainly higher than the mechanical first-round effect. Most calculations therefore indicate a lower boundary for the distributive effort that is required. Still, such calculations illustrate that the cost of more adequate social safety nets is not necessarily outside of the realm of the conceivable[3].

So the question is: what keeps governments from raising minimum income levels? Can the scores of politicians proclaiming that "the fight against poverty" is one of their prime concerns be accused of more than a bit of cynicism then? That may be the case. It is also possible and indeed likely that they do care, but find themselves constrained by the preferences of their largely middle-class electorates. After all, countless electoral studies have found that parties of the center-left and center-right tend to converge in pursuit of the median voter: for a politician wishing to get re-elected, they raise taxes or take away benefits from the middle class at their peril (Pontusson and Rueda 2010; Elkjær and Iversen 2020).

Voters may well only like their politicians to be compassionate and full of empathy for low-income groups as long as it does not affect their own pockets. So perhaps electoral self-preservation stops politicians from

[3] In an analysis for Belgium, Denmark and the UK, aptly titled "The end of cheap talk about poverty reduction", Collado et al. (2019) find that the cost of closing the poverty gap while maintaining existing average labour-market participation incentives at the bottom of the income distribution would be substantially higher than the 2 or 3 per cent of GDP a back-of-the-envelope calculation yields. If work incentives are maintained at their existing levels, the cost would double to 5 or 6 per cent of GDP. That is a significantly higher number but, again, arguably not outside the realm of the imaginable.

doing what needs to be done. And there may be pressures from other sections of society. Employers, for example, may lobby for low reservation wages (Greer 2016).

It may also be the case that politicians prefer spending money on policies they believe will bring more lasting improvements to poor people's lives. Governments may prefer to invest in human capital and in services that help low-income people to build, enhance and realize their earnings potential. Indeed, this would be in tune with some influential thinking over the past decades. Some 20 years ago, in a report to the Presidency of the Council of the European Union, Esping-Andersen et al. (2002) called for a radical overhaul of welfare state architectures in Europe stating: "As the new social risks weigh most heavily on the younger cohorts, we explicitly advocate a reallocation of social expenditures towards family services, active labor market policy, early childhood education and vocational training, so as to ensure productivity improvement and high employment for both men and women in the knowledge-based economy." The European Commission launched in 2013 a 'Social Investment Package' emphasizing human capital investment. Publicly-provided or subsidized services of various kinds, and particularly education and care services, are seen as key instruments in this package.

Meanwhile, 'social investment' has become ubiquitous in EU discourse. A recent report by the High-Level Group on the future of social protection and the welfare state in the EU, chaired by former European Commissioner Anna Diamantopoulou, again puts social investment front and center (European Commission, DG EMPL 2023). Likewise, scholars like Anton Hemerijck, Nathalie Morel, Bruno Palier and Joakim Palme, among many others, have made impassioned cases for social investment (Garritzmann et al. 2022; Hemerijck 2017, 2018; Morel et al. 2012).

One concern is that increased spending on social investment might be crowding out cash spending on social transfers. However, there is not much evidence that this has been happening (Hemerijck 2017). Although some authors find that recent increases in welfare state expenditure have been catering to the new needs of dual-earner households (see for example, Meeusen and Nys 2013), it does not seem that we can explain the lack of progress in poverty reduction with crowding out alone. Moreover, that would not explain why governments still do not spend some extra money to make direct and significant inroads into poverty reduction, as is their stated intention in many cases. Neither does it tell us why governments would not redirect more resources within existing cash spending programs to the poor.

There is an alternative possible account. Perhaps it is the case that even the best intentioned policy makers are faced with structural constraints to improving minimum income protection adequacy that have emerged because of an interplay of shifts in labor markets, household formation and the composition of household incomes. Central to this account is the notion that there may be some "glass ceiling" to improving minimum income protection adequacy, to use the metaphor used by Cantillon, Parolin and Collado (2020). This is the account we will examine in more detail in this paper.

A structural account of inadequacy

Policy makers may well be faced with increasingly tougher structural constraints towards improving the adequacy of minimum income protection. Following Cantillon et al. (2020), we argue that minimum income protection in advanced welfare states is built upon a structure where the levels of income protection available for recipients in different labor market or living situations sit in a hierarchical relationship. Therefore attempts at raising minimum incomes lower down the hierarchy will be limited by the "glass ceiling", or the minimum income available at the next step in the hierarchy. The argument runs as follows.

Figure 3. The income hierarchy.

At the bottom of the income hierarchy sits the minimum income floor, provided in most rich countries and elsewhere through means-tested social assistance and equivalent schemes (cfr Figure 1). In principle, this is the lowest possible income below which nobody with legal residence in the country can fall. It is in most cases ensured by law at the national level. Where no nationally regulated social assistance exists, it is sometimes provided at regional or local level.

Above social assistance sit the minimum benefits provided within various social insurance schemes. These entitlements are acquired through contributions and work histories. The logic in most systems seems to be that rights acquired through past contributions sit somewhat higher in the incomes hierarchy than benefits that are provided because of sheer need, and on the basis of compassion or other notions of decency and social justice. We make a broad generalization here. Such a strict hierarchy need not always apply: in some cases the level of social insurance benefits replacing earnings will be equal to or lower than social assistance, yet access can still be considered to be somewhat easier if contributory conditions are met, since no full-scale means-test applies. If the income from contributory benefits falls below the level guaranteed by social assistance, the recipient may still be eligible for a social assistance top-up.

Next, we have the lowest wages. It is a widely accepted principle of socio-economic policy that work needs to pay more than living on a benefit, certainly as far as people at working age are concerned. Indeed, it is even a matter of common-sense economics that the net incomes from work at the statutory or effective wage floor need to exceed the incomes available for able-bodied out-of-work individuals (Tatsiramos and van Ours 2014; Kyyrä and Pesola 2020). Otherwise, what is the incentive to work? Of course one can argue that all work, including low-wage work, has intrinsic and instrumental value: after all, the prospects of career progression and future income growth are better from a starting point of low-wage work than unemployment. But we should not disregard the risks of entrapment in low-wage occupations, let alone the psychosocial stress associated with several types of low-wage employment (Boyd 2014). This is to say that low-wage workers do not always find their jobs fulfilling or pleasurable: for many, it is the expected present

or future net income that keeps them in the employment relationship, rather than any intrinsic value in work for the sake of working.

Still, social protection systems at the European level are strongly informed by this line of thinking. Both EU-level strategies and the policies of individual countries often begin from the premise that 'work must pay' better than benefits (Matsaganis and Figari 2016; Trlifajová and Hurrle 2019; Jara et al. 2020). In Germany, for example, this principle was for a while enshrined in law (the so-called "Lohnabstandsgebot"). Exceptions to this general principle are usually people who are incapacitated for work, for example because of illness or injury. Governments usually make available a higher level of minimum income protection for these groups of people, in recognition of certain higher living costs they may experience as a result of their disability or because their condition may present a serious impediment for work in the open labor market. However, a situation in which work-capable people can live for extended periods of time on benefit incomes higher than the wage floor is not generally seen as very desirable or sustainable.

The wage floor is usually demarcated by the minimum wage, whether statutory or negotiated in collective agreements at a national scale. Note that the element of wage floors which matters most for the income hierarchy is the net income level around the wage floor. The difference in net incomes for someone transitioning from out-of-work minimum income benefits to employment at the gross minimum wage is usually much smaller than the mathematical difference between these two numbers. Out of the gross minimum wage, social insurance contributions and taxes get deducted, resulting in a somewhat lower net income. This difference in net incomes may become lower still if transitioning to the labor market results in the withdrawal or tapering-out of income protection benefits or other allowances. In the analytical literature, these factors contributing to the progression in net incomes are usually conceptualized as marginal tax rates and participation tax rates (Collado et al. 2019; Jara et al. 2020).

For the time being we will focus on the gross minimum wage, because this is the most often used benchmark for policy-makers and analysts discussing income floors and their interactions in the income hierarchy. As the subject of legislative debates or tripartite negotiations, the gross minimum wage is the main reference point of what work minimally pays. Furthermore, economic analyses of marginal or participation tax rates usually take the gross minimum wage as their starting point in the calculation of net incomes and work incentives. We will return to the net minimum wage in the next section.

We also add that there may be substantial differences between the *statutory* minimum wage – which, by the way, is not legally defined in all European countries – and the *absolute* or *effective* wage floors as the observable, true labor earnings for workers in the lowest-wage occupations. In countries such as Belgium and France, the statutory minimum wage serves more as a benchmark or a normative reference value than anything else: it sets an absolute bottom line for labor incomes while the *de facto* wage floors in low-wage occupations, defined in collective agreements, move upwards with the statutory base (Fougère et al. 2018; Vandekerckhove et al. 2020). In contrast, in countries where minimum wages are exclusively defined by collective agreements and therefore vary by experience, occupation or sector, it makes little sense to talk of *a* minimum wage: there can be hundreds of them (Haapanala et al. 2023). For these reasons we focus on the tenth percentile of gross labor earnings for full-time equivalent workers as the *effective* wage floor, and the fifth percentile as the *absolute* wage floor. This is the lowest comparable income quantile we can observe among the wage-earning population.

Then there is the rest of the wage building that rises above the wage floor. It is, again, a widely accepted principle that there needs to be some spread in wage levels by such characteristics as acquired level of education, experience and, where measurable, performance, in order to have a properly functioning labor market. Nobody is advocating for perfect wage equality here: claims of 'equal pay for equal work' can still

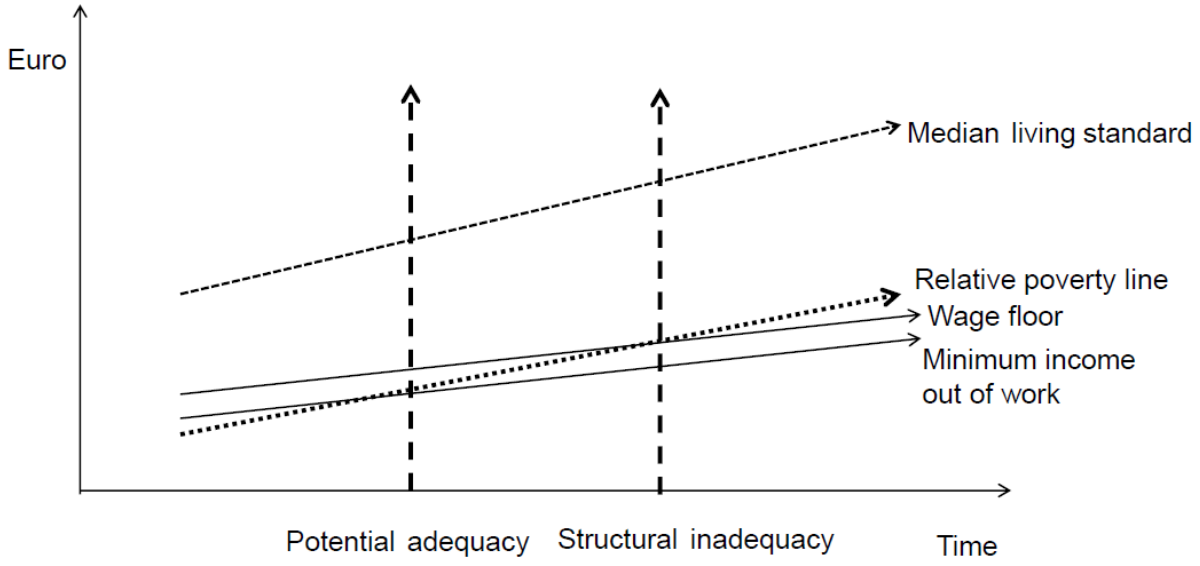
recognize wage differences based on the above-mentioned criteria if they are objectively and transparently negotiated (Dorigatti and Pedersini 2021).

How large such wage inequalities actually need to be in order to have a properly working ("clearing") labor market, in which people are optimally allocated to jobs, is an issue of endless debate among economists. Paying everybody (almost) the same has clearly never worked. But that is not to say there is no scope for some compression in countries where wage differentials are large. For example, countries such as Denmark or the Netherlands show that relatively compressed wage structures can be perfectly compatible with dynamic economies generating high employment and low unemployment rates (Andersen 2021; Hartog and Salverda 2018). How much wage compression is workable may however depend on the wider institutional context.

If we accept the concept of the incomes hierarchy, then the clear implication is that lifting the minimum income floor – notably, by raising social assistance benefits – will have reverberations throughout the whole income hierarchy. Raising social assistance will put pressure on minimum benefits in social insurance provisions, which may in turn put upward pressure on minimum wages. This may have ripple effects further up the wage distribution. Lifting in the lowest incomes may for this reason well be far more costly and consequential than any first-round calculation would suggest.

But what is even worse: it may well be the case that lifting minimum income floors is becoming even harder to achieve because the poverty line is moving up faster than the incomes hierarchy. How can this be possible? Does the poverty line not move up in step with wages and other income components? Not necessarily. Remember, the relative poverty threshold is calculated on the basis of equivalized disposable household income. Disposable household income is the sum of the incomes – labor and non-labor – of all household members. If wages, including wage floors, remain stagnant but the number of earners per household increases, for example because of rising female labor force participation, the median living standard measured at the household level and thus the relative poverty threshold will go up.

Figure 4. Why adequacy is harder to maintain when living standards outpace wages.



And in effect, this has happened in some cases. In the Netherlands, for example, sustained wage moderation was at the core of a concerted strategy by governments and social partners to boost employment, meaning that individual wages grew at a slow pace if at all. But this coincided with many more people, especially women, entering the labor force, probably brought in part by the demand and supply effects of wage moderation. With an increasing number of dual-earner households, this led to a situation of growing median household incomes and living standards all the while households with one income earner were falling relatively behind (Marx 2007).

In this context it is easy to see how a divergence of real wage growth, especially at the lower end of the wage spectrum, and living standards growth may bring a situation in which minimum income adequacy becomes increasingly harder to bring about, as depicted in figure 4. Minimum income levels and minimum wage levels are after all constrained by wage growth, especially at the lower end. If low wages in particular are structurally lagging, for example because of shifts in labor demand due to factors such as globalization and skill-biased technological change, the challenge gets even worse. This is not to say that adequate minimum incomes are impossible to achieve: rather, it will require that multiple income layers are lifted at the same time.

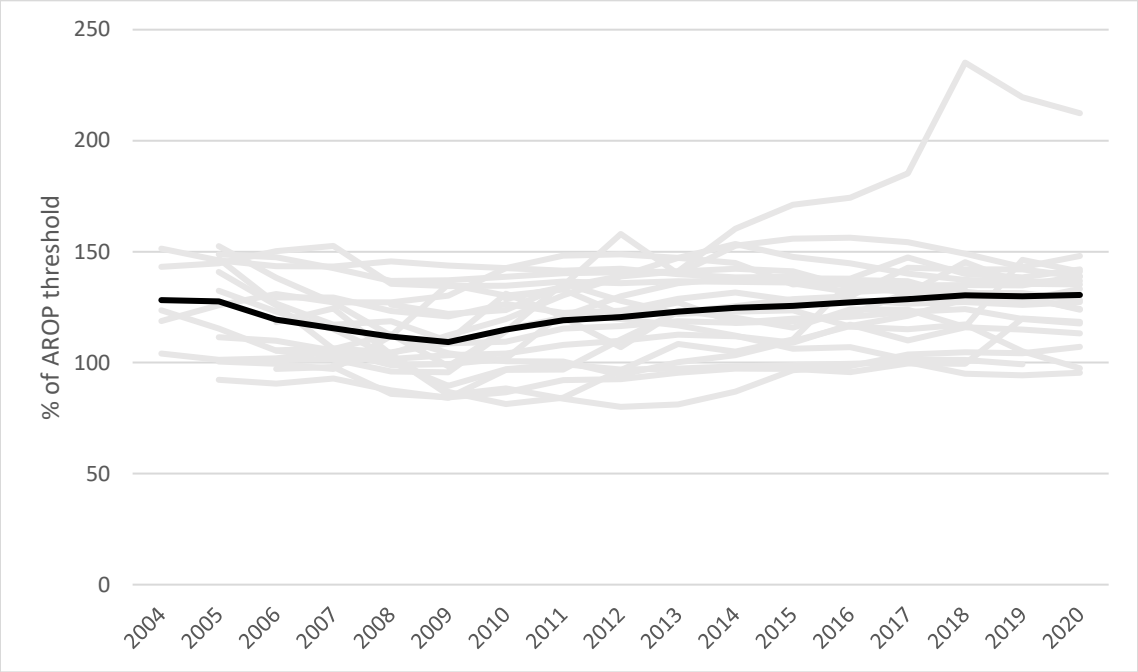
Have wage floors lagged behind rising living standards?

So what has actually happened over the past decades? To start with, we look at trends in statutory minimum wages. Usually, wage floors are expressed as percentage of the average or median wage. However, we are interested here in how they relate to poverty thresholds. This is relevant to assess their direct poverty reducing capacity among those in work and it is also relevant if minimum wages impose a constraint on benefits that protect the non-working against poverty.

Figure 5 shows the overall trend in gross statutory minimum wages relative to the single-person AROP threshold in the EU countries since 2004, the first year for which EU-SILC data is available.[4] Relative to the poverty threshold, statutory minimum wages have remained at approximately the same level in nearly all member states: the EU average being around 130% of the AROP threshold. Worth noting is the small initial decline in the latter half of the 2000s, with the EU average bottoming out at 109% of the AROP threshold in 2009. This is largely due to the period of strong growth in average wages and household incomes until the financial crisis, mathematically lifting the AROP threshold. In contrast, the picture after the financial crisis is of a steady rise in the adequacy of statutory minimum wages. As the more detailed Appendix Figure 3 shows, this rise in the relative adequacy of statutory minimum wages was mainly driven by Central-Eastern European (CEE) countries, where initial levels were relatively low.

[4] While EU-SILC is easily the best and most comprehensive source of comparable income data available it is not without its issues. Some countries rely or have long relied on survey data while other countries draw on register data. There may be breaks in the data due to such methodological issues, hampering comparability.

Figure 5. Statutory minimum wages relative to the poverty line in EU countries 2004-2020.



Statutory minimum wages may not be reflective of effective wage floors. There may be a substantial difference between the official 'headline' minimum wage and the *de facto* wage floor that actually prevails. In countries with comprehensive collective bargaining, effective wage floors tend to sit at significantly higher levels than the minimum wage used in these graphs.

So what do we know about effective wage floors?[5] Several sources of statistical information are available, most importantly the OECD Earnings Distribution Database (EDD) and the Eurostat Structure of Earnings Survey (ESES).[6] Both focus on gross earnings excluding employer-paid social contributions. The OECD database covers the evolution over a longer period but ESES defines low pay on an hourly basis while the OECD concentrates on full-time workers regardless of their hours worked.

The next two figures show the general trends drawing on both databases. First, Figure 6 shows trends in low wages (P10) relative to the poverty line drawing on SES data for wages and EU-SILC data for relative poverty thresholds. Figure 7 shows the same wage decile, this time drawing on the OECD EDD. Note that Figure 7 covers a longer time period. Note also that the set of countries increases markedly after the mid-2000s. For those reasons we will focus on the trends after 2005.

In both cases the overall picture is one of stability. The EU average of first-decile gross wages has remained at a rather stable 160% of the AROP threshold for the past two decades. Yet there is significant cross-

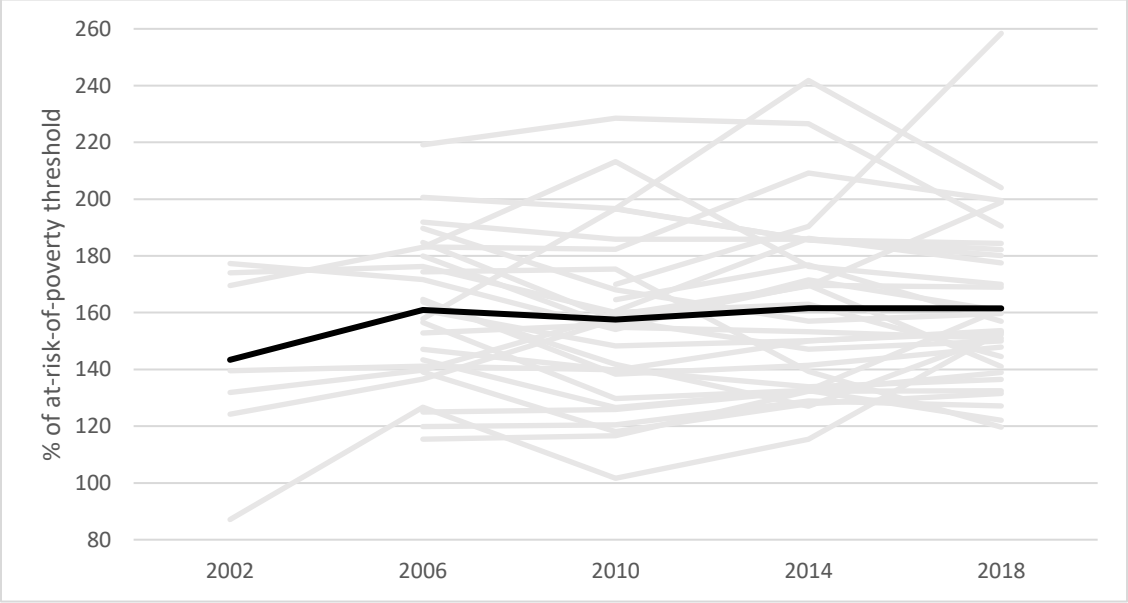
[5] For clarity, we distinguish between three types of wage floors. The "statutory wage floor" as determined by the statutory or collectively bargained wage floor, the "absolute wage floor" as measured by the P5 value and the "effective" wage floor as measured by the P10 value.

[6] Europe's workhorse survey on income and living conditions EU-SILC also provides information in earnings developments. But the EU-SILCs reference period is the whole previous year. There is calendar data on main activity status month by month but that is a very imperfect measure of actual work intensity. Hence it is impossible to really distinguish between work intensity trends (for example part-time work trends) and earnings trends.

country variation, both in levels as in trends. In the Nordic countries, Belgium and the Netherlands, but also in Romania, the effective wage floor in some years reaches twice above the poverty threshold. Meanwhile closer to the bottom, in countries including Estonia, Latvia, Lithuania and Cyprus, first-decile gross wages are only around 20% above AROP. Mind you, this implies that as much as 10 per cent of the full-time working population in these European countries earn gross wages barely above the single-person poverty threshold. Usually, the net income will be even lower because of taxes and social security contributions.

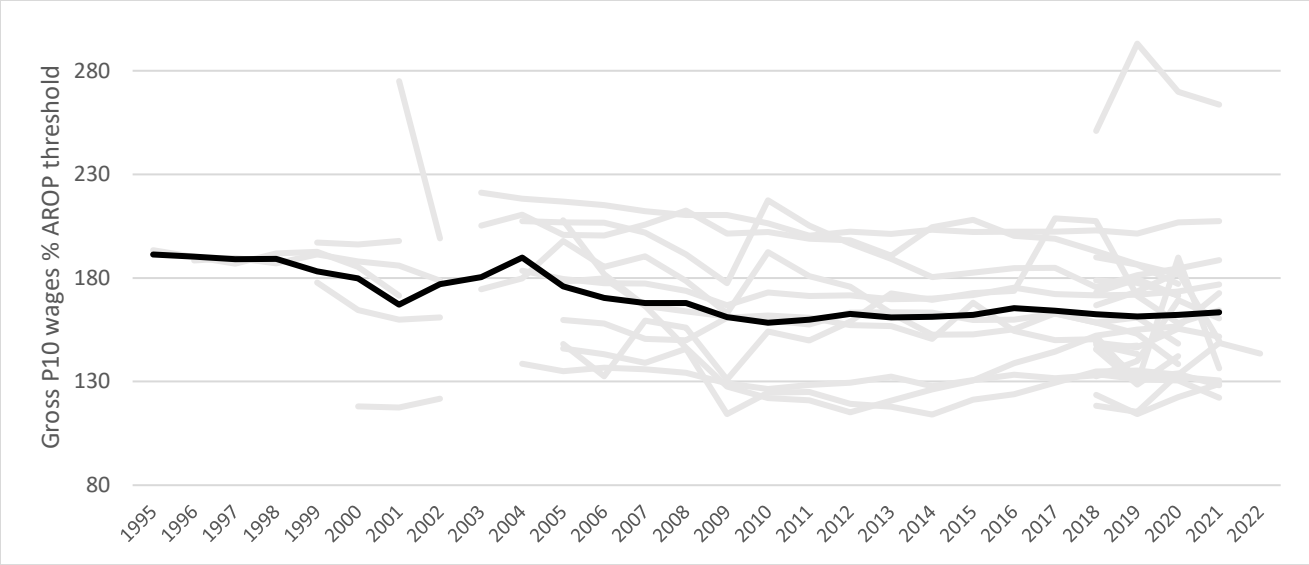
The appendix tables show a more detailed breakdown by country groupings. Very broadly speaking, the overall stability in the EU average after the mid-2000s combines small declining trends in the adequacy of gross P10 wages in the Nordic and to a less extent Continental European countries, be it in both cases from comparatively elevated starting levels. For the Southern European countries we observe overall stability, with marked cross-country variation. Only in the CEE countries we observe a strong and clear trend of rising wage floors: highly necessary, we emphasize, given the low starting levels.

Figure 6. Low wages (P10) relative to the poverty line in EU countries 2002-2018, ESES data.



Note: based on full-time equivalent wages (including full-time and part-time earners). Black lines refer to the average over countries that are available in 2002 respectively 2006 and 2010.

Figure 7. Gross P10 wages relative to the poverty line, 1995-2021/2. Source: OECD Earnings Distribution Database.



The gross earnings data from ESES and OECD EDD are widely used in socio-economic analyses. Still, they have their limitations, meaning that these data may not perfectly capture what is happening in the lower segments of the labor market. The EDD data is restricted to full-time workers and the ESES data does not comprise all wage-earners – only those employed in firms with more than 10 employees. It should also be noted that the ESES only publishes data once every four years. This is a limitation for time-series analysis in its own right, and since the EDD data for several countries is drawn from ESES, this also results in unwanted gaps in the database.

Therefore we complement our analysis of income floors in the labor market with gross earnings data from EU-SILC. Note that in contrast to ESES, EU-SILC is not designed to measure wage income per se. Rather, the survey contains annual and monthly employment incomes for a representative sample of the adult population, from which 'non-trivial assumptions' are necessary to construct comparable estimates of gross wages (Eurofound 2014: 102). One central difficulty is in distinguishing between changes in work intensity (full-time, part-time, or full-time equivalent) and changes in wage levels proper.[7] We follow the EU-SILC methodological literature (eg. Eurofound 2014, Berger and Schaffner 2015, Fernández-Macías and Vacas-Soriano 2016, Salverda and Rook 2023) in identifying a comparable sub-sample of full-time equivalent wage-earners as the basis of our indicative distribution of gross wages. From this distribution, we use the tenth and fifth percentiles as proxies for effective and absolute wage floors (see Haapanala et al. 2023).

Figure 8 shows an overall trend that is broadly similar to the one observed on the basis of ESES and EDD data, with very little variation around the EU-level mean of P10 gross labor incomes at 138% of the AROP threshold. The EU mean hit its lowest point in 2008 as the financial crisis hit the labor markets in earnest, before recovering in the post-crisis years. The main reason why the first decile of gross labor incomes as derived from EU-SILC is lower than the first deciles from the EDD and ESES respectively is that our applied definition of full-time employment in EU-SILC is less restrictive, therefore including people with

[7] In EU-SILC there is calendar data on main activity status month by month but that is an imperfect measure of actual work intensity, sometimes a very imperfect one. Hence it is impossible to fully distinguish between work intensity trends (for example part-time employment) and earnings trends.

less stable or less permanent labor market participation than the full-year, full-time workers observed in the other datasets. This also means that the EU-SILC estimates provide an arguably more realistic picture of labor incomes in precarious, low-wage employment: this segment of the wage distribution, where employment contracts are often short-term and the realized amount of working hours and therefore labor incomes can vary on a short-term basis, is often left under-observed or truncated by summary statistics in surveys intending to capture homogeneous full-time employment (Salverda and Rook 2023).

Once again, this EU-level picture of stability and similarity hides some marked differences between country groups. Mostly notably, we see a mild rising trend in SILC-derived first-decile labor incomes in the Nordic countries, and a picture of comparative stability in the CEE countries.

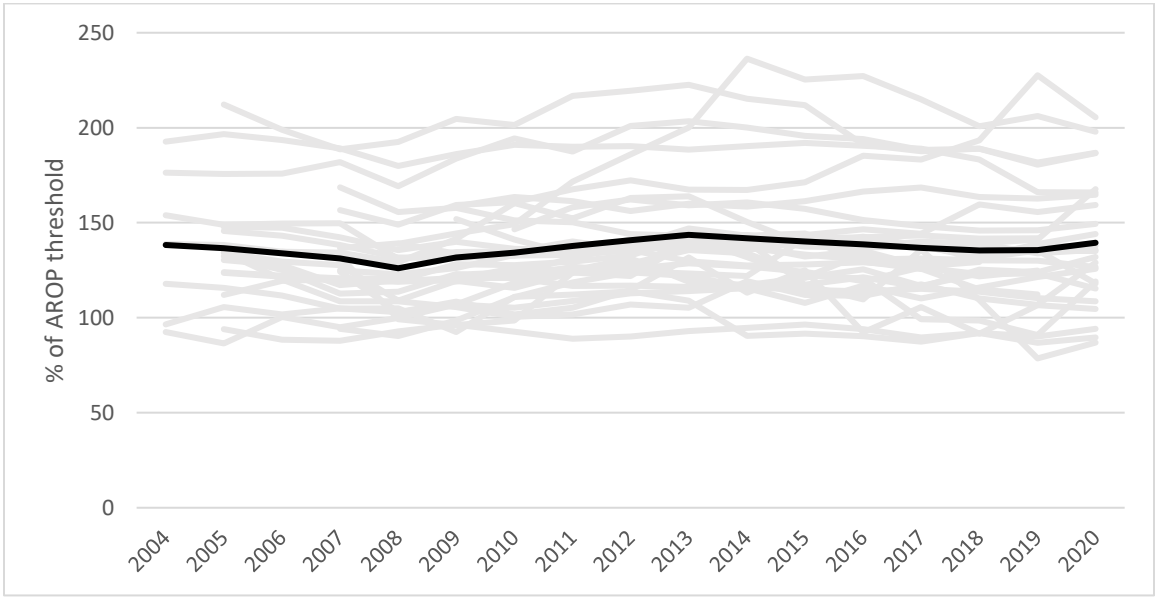
So far, we have applied the commonly used P10 value as our threshold for effective wage floors. By definition, this still leaves one in ten wage-earners – the lowest of the low wage incomes – below the cutoff point. Ideally, we would use the lowest observed labor incomes as the absolute wage floor but these tend to be inaccurate outliers: inaccuracy at the top and bottom of the wage distribution is a known issue with survey-based estimates of earnings, and this is particularly true for the EU-SILC (Eurofound 2014). Given these limitations, next we outline trends in the fifth percentile of SILC-derived labor incomes as the lowest feasible percentile of the wage distribution that can be identified relatively robustly across countries and over time.[8]

At the absolute wage floor, the picture is again one of stability: both at the EU-level average and within country groups. Worth noting is that the EU mean for gross P5 labor incomes happens to coincide almost perfectly with the AROP threshold. This means that on average, one in twenty wage-earners in Europe has annual gross labor incomes below the poverty threshold, with the worst situation in Cyprus, Hungary, Estonia, Bulgaria and Norway. Note that this calculation refers entirely to individual labor incomes with regard to the equivalized single-person poverty threshold. Since several low-wage workers live in households with another income earner, this does not automatically imply that one in twenty wage-earners in Europe lives in poverty. It only means that for this share of wage-earners, their earned incomes are not sufficient for a poverty-free life without additional income sources, for example from a wage-earning partner or wage subsidies (Lass and Wooden 2020; Salverda and Rook 2023; Pedersen and Picot 2023). Some of these wage-earners may be in a living situation where they are satisfied with their low personal labor incomes: for example, secondary earners, or students with few overhead expenses. From a policy standpoint, the presence of such low-wage employment still raises the question whether employment relationships that theoretically cannot support a life above the poverty threshold are acceptable in the labor market.

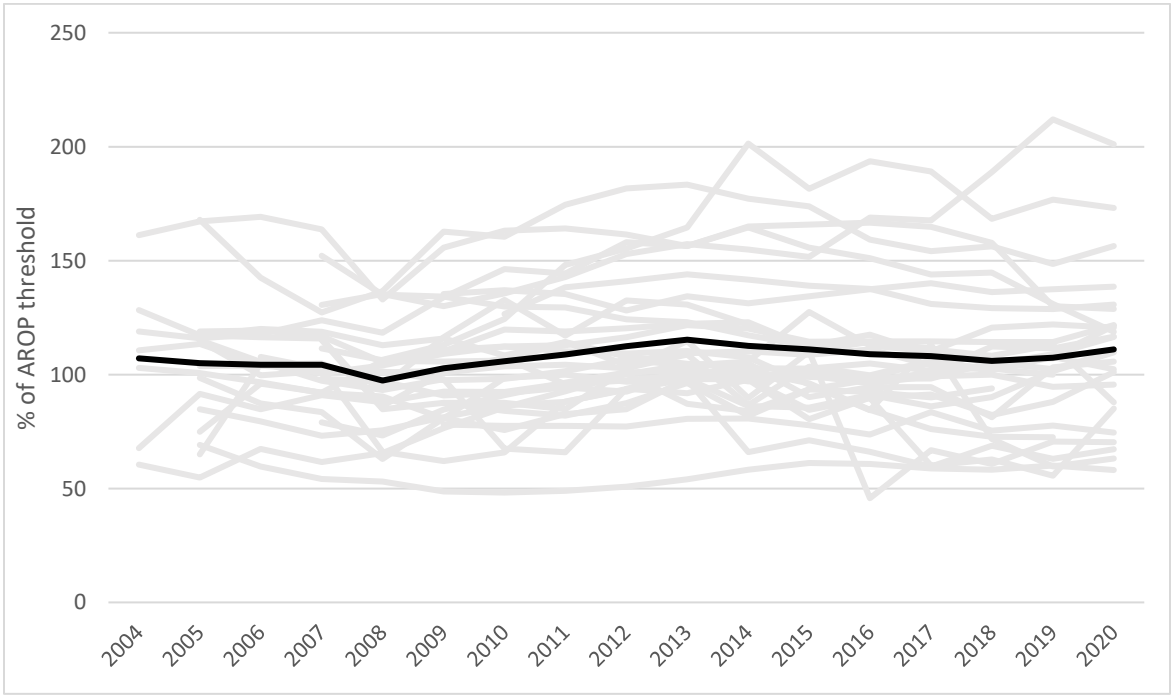
[8] Note that such measurement issues arise particularly for all Nordic countries before income reference year 2008. This is why we exclude the SILC-based income quantiles for these countries and years from the analysis.

Figure 8. Effective and absolute wage floors (gross P10 and P5 wages) relative to the poverty line, 2004-2020. Sources: EU-SILC, WSI Minimum Wages Database.

Panel A. Effective wage floor (gross P10 wages)



Panel B. Absolute wage floor (gross P5 wages)



The big picture

So, what can we say after this comprehensive review of the trends in statutory, absolute and effective wage floors in Europe? The very least we can say is that the general picture is not one of erosion. For the most part, wage floors have kept up with relative poverty lines. This finding is relatively robust across datasets and points of measurement. This is perhaps all the more striking when we know that employment rates have also increased for the most part, in many countries even quite strongly. Clearly, employment growth has not come at the price of deteriorating wages at the lower end of the distribution. It is also not the case that the incidence of low-paid work has increased (see Figure 9). Again, the available data points towards remarkable stability in the EU mean: around 15 per cent of full-time workers are earning gross wages less than two thirds of the median, with very little change over the latest two decades. Of course, there are exceptions. Germany is a notable case where low-paid employment increased, following an erosion of collective bargaining coverage and waning union power, until the introduction of the statutory minimum wage in 2015 reversed this trend (Bosch 2018). But there are also countries where the incidence of low-paid work has decreased, including Portugal, Poland and Slovakia.

In Appendix Figure 8 we look at low pay incidence by countries. Here, we see somewhat of a convergence between country groups in Europe: the Nordic countries, with the lowest rates of low pay incidence, have seen an increase from approximately 6% to 8% of the population. At the same time, the Continental and Southern European country groups have seen gradual downward trends although the average levels of low pay incidence there remain in excess of 10%. In the CEE countries, the level has remained quite stable at approximately 21%.

Figure 9. Incidence of low pay (below two-thirds median) in EU28+NO,IS (-SE), 2000-2022. Source: OECD.

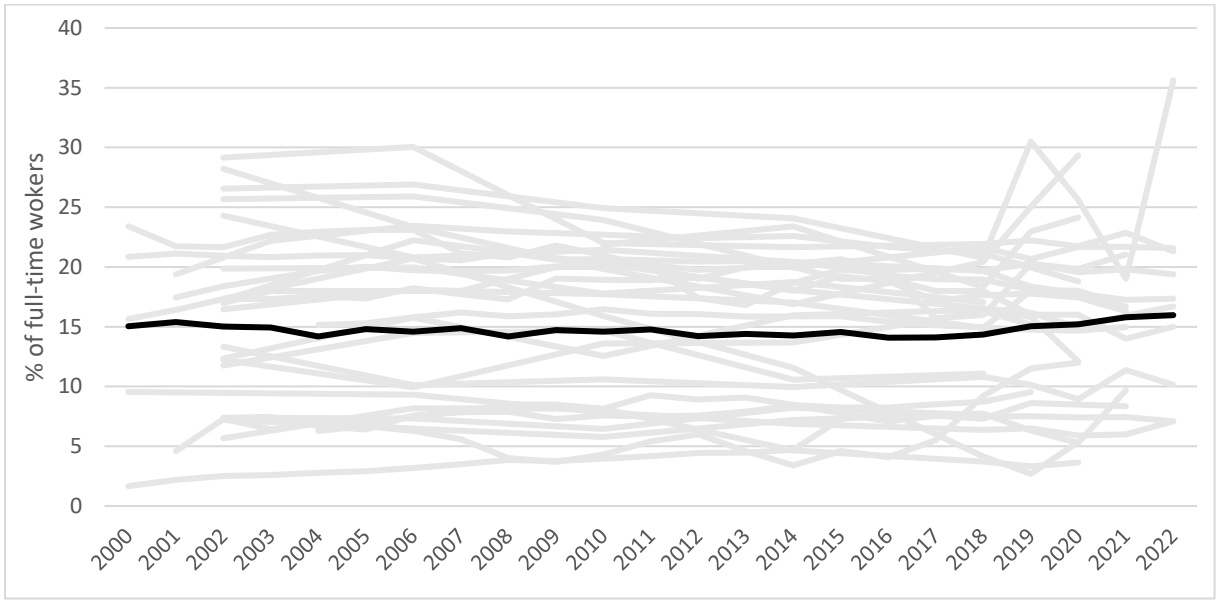


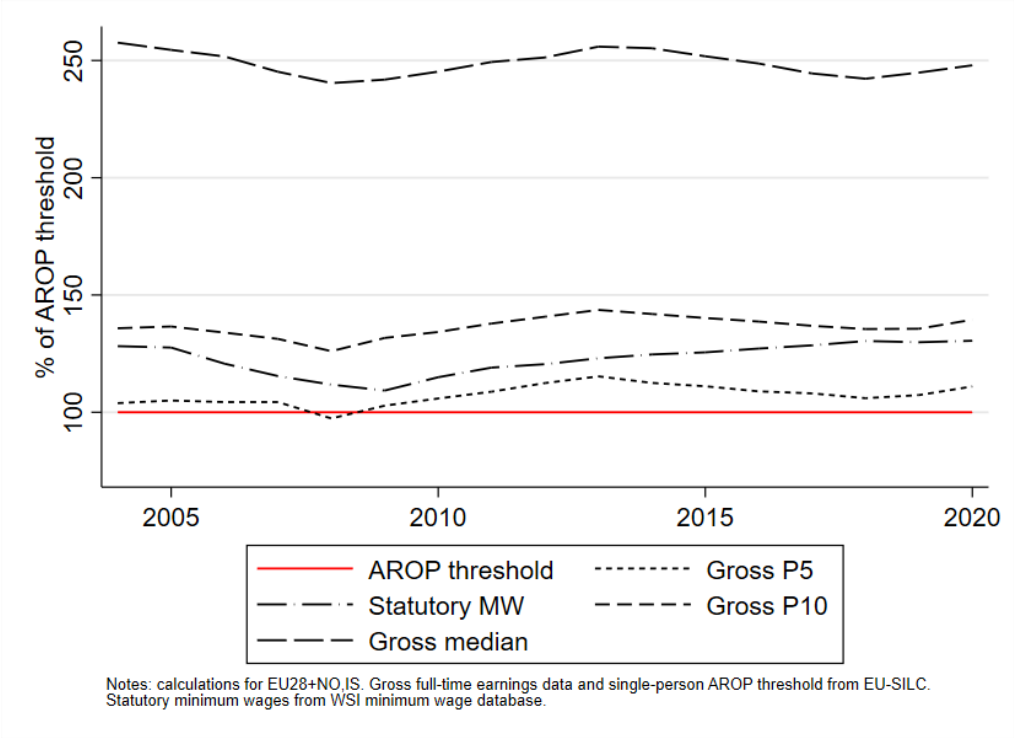
Figure 10 sums up the big picture of the earnings hierarchy in European labor markets. It shows the average levels for the statutory minimum wage, the absolute wage floor (P5), effective wage floor (P10) and the median wage in the EU28 countries plus Norway and Iceland, all expressed relative to the single-person

AROP threshold of equivalized disposable household income. This picture confirms that wage floors in Europe are on average at about the same level in 2020 as they were in 2004. The effects of the financial crisis are visible in the levels bottoming out in 2008-2009, with the absolute wage floor at P5 even going briefly below the AROP threshold in 2008. Still, by 2020 the EU average shows a recovery in all income quantiles. If anything, the lowest wages appear to have done even slightly better than median wages.

Notably, our calculations show that working for the statutory minimum wage – calculated for hypothetical full-time, full-year, uninterrupted labor market participation – corresponds to an annualized labor income somewhere between the fifth and tenth percentiles of the actually observed full-time working population from EU-SILC. This point is worth reiterating. Statutory minimum wages are usually defined as an hourly or monthly currency amount. For workers engaging in full-time employment during short-term, infrequent or unpredictable peaks in labor demand but with less than full-time employment during other moments in the income year, which is often the case with zero-hours, on-call or flexible-hours contracts, this can result in annual incomes beneath commonly applied adequacy thresholds (Moore et al. 2017).

Our calculations from EU-SILC, aiming to include all and only those workers whose main activity status and primary income source both come from the labor market, suggest that between 5 and 10 per cent of the full-time equivalent wage-earning population in Europe so defined have annual labor incomes corresponding to below-minimum pay. This estimate is consistent with past research (Garnero et al. 2015). It also demonstrates the limitations of exclusively relying on statutory minimum wages as a minimum income protection mechanism.

Figure 10. The earnings hierarchy. Gross earnings quantiles for full-time workers in EU28+NO,IS. All calculations from EU-SILC.



It is worth reiterating that there are no uniform patterns, not even within the conventional country groupings shown in the appendix graphs. This should not come as a surprise. Analyses comprising many countries rarely yield patterns that fit simple (or even not so simple) narratives. In fact, if there is one thing that decades of comparative income inequality research has taught us it is that country variation remains remarkably persistent and that trends are often surprisingly idiosyncratic (Nolan et al. 2014; Nolan 2018a,b). Country-specific trends tend to sit particularly uneasy with accounts that see secular shifts in advanced economies as drivers of inequality trends – for example, globalization or skill-biased technological change. As recent literature suggests, the story of global inequalities in the twenty-first century increasingly looks like a story of flat or downward trends (Pinkovskiy et al. 2024). This story is hard to reconcile with large or secular explanations, let alone arguments of an unstoppable upwards march in inequality and poverty. Our observations are no exception.

Where are we now?

Having looked at trends in the statutory, absolute and effective wage floors relative to the poverty threshold, we will consider the current state of affairs in a bit more detail. This is where we bring minimum income benefit levels into the picture. More specifically, we ask how incomes in and out of work relate to each other. For that, we need to shift the focus from gross to net incomes, taking account of taxes and social security contributions but also possible extra benefits such as child benefits or in-work benefits.

Going back to our hypothesis of the structural account of inadequacy, it is a widely accepted policy principle that the net income at the statutory, absolute or effective wage floor must not go beneath the base level of out-of-work benefits for work capable persons. Conversely, this argument implies that policy makers who wish to lift the net incomes of benefit recipients must also find ways to lift the lowest labor incomes. So, do we see evidence of this "glass ceiling" in action?

Figure 11 benchmarks two key minimum income measures against the relative poverty level in 2021 in a set of European countries: the net income of social assistance recipients (white circles) and the net income of a statutory minimum wage worker (black triangles), taking account of taxes and social security contributions, but also child benefits and other potential income supplements.[9] These calculations are performed for a single person and for a single parent with two children.

Our main focus in this analysis is on net disposable incomes. For a point of comparison, we also include the gross amount of the statutory minimum wage (black bar). This demonstrates that in most European countries, the tax-and-transfer system results in a rather considerable difference between gross and net disposable incomes, already at the statutory wage floor.[10]

Guaranteed minimum incomes for people not in work generally fall well short of what would be needed to lift them out of relative poverty. This is even the case for a single-person household. Indeed, the Netherlands is the only country where the net income for a social assistance recipient meets the poverty threshold.

[9] Since this calculation is done with reference to statutory minimum wages, countries where minimum wages are negotiated in collective agreements (the Nordic countries and Italy) are excluded.

[10] Also note that in some countries social assistance is taxed, resulting in a difference between gross and net benefit incomes. However, the extent of taxation on this last-resort benefit type is generally so low that the gross-net difference can be ignored for the purposes of this illustration.

However, the net incomes of statutory minimum wage workers do exceed the poverty threshold in a substantial number of countries: exceptions being Bulgaria, Hungary, Latvia, Estonia and Germany.

In the case of single parents, the situation also looks troublesome. Due to the higher level of the poverty threshold as this household type has more compulsory expenses to meet, full-time work effort at the statutory minimum wage results in net incomes above the poverty threshold in a far smaller number of countries. Not to mention how demanding a full-time work commitment would be for a parent in this scenario. In reality, most single parents are employed on a part-time or flexible basis to balance their income earning and care commitments (Nieuwenhuis and Maldonado 2018). While the levels of social assistance are generally somewhat nearer the poverty threshold – largely due to social transfers specific for this household type such as child benefits, topping-up the social assistance income which is the same as for childless households – these are still not sufficient to stay out of poverty in any European country. In best-performing Luxembourg, Austria and the United Kingdom, the net disposable income that social assistance can provide for a single parent with two children only reaches up to 90% of the poverty threshold.

Countries in Figure 11 are ranked by the adequacy of minimum income protection for those not in work. The grey bars summarize the gap between net incomes for full-time employment at the statutory minimum wage and the net income from social assistance. At a glance, these bars suggest that countries with more generous social assistance have a lower gap between the out-of-work income floor and the statutory wage floor. In other words, the glass ceiling in these countries is closer. If we were to hypothetically increase the guaranteed minimum incomes up to the level of the poverty threshold, we would in fact eliminate the financial incentive for employment at the statutory wage floor in several countries.

Looking at the net disposable incomes available for a single-person household in the European welfare states, there is always at least a 20 percentage point gap between social assistance and employment at the statutory minimum wage. In most countries, this gap is considerably larger. If we look at single parents with children, we see that the welfare states are working slightly harder to protect these vulnerable households from poverty: but still, never by more than what is available from minimum wage employment. For a more in-depth discussion we refer to Aerts et al. (2023).

The crux of the matter is this: raising minimum incomes for people not in work cannot be done without simultaneously raising the statutory, absolute or effective wage floor. One of the main reasons for this glass ceiling relationship is the need to maintain work incentives: a person moving from out-of-work benefits into work must see an improvement in their bank account.

We may briefly add that raising the (statutory) minimum wage is not the only way for policy-makers to improve net incomes for the lowest-paid workers, obviously of significant importance to prevent and reduce in-work poverty (Hick and Marx, 2023). Of course, in-work benefits and (refundable) tax credits can also do the job. Such in-work benefits have grown in importance as we document in Marchal and Marx (2019) and Marchal and Marx (2024). But such in-work benefits do not come cheap. They also carry a substantive risk of entrenching low gross wages: if employers know that the government will always prop up the incomes of low-wage workers, what incentive do they have to pay an adequate wage?[11] Pedersen and Picot (2023) show that an in-work benefit regime leads to a greater incidence of low-wage employment, while public expenses on social transfers also increase.[12] This is a lose-lose outcome. Hence the issue of whether

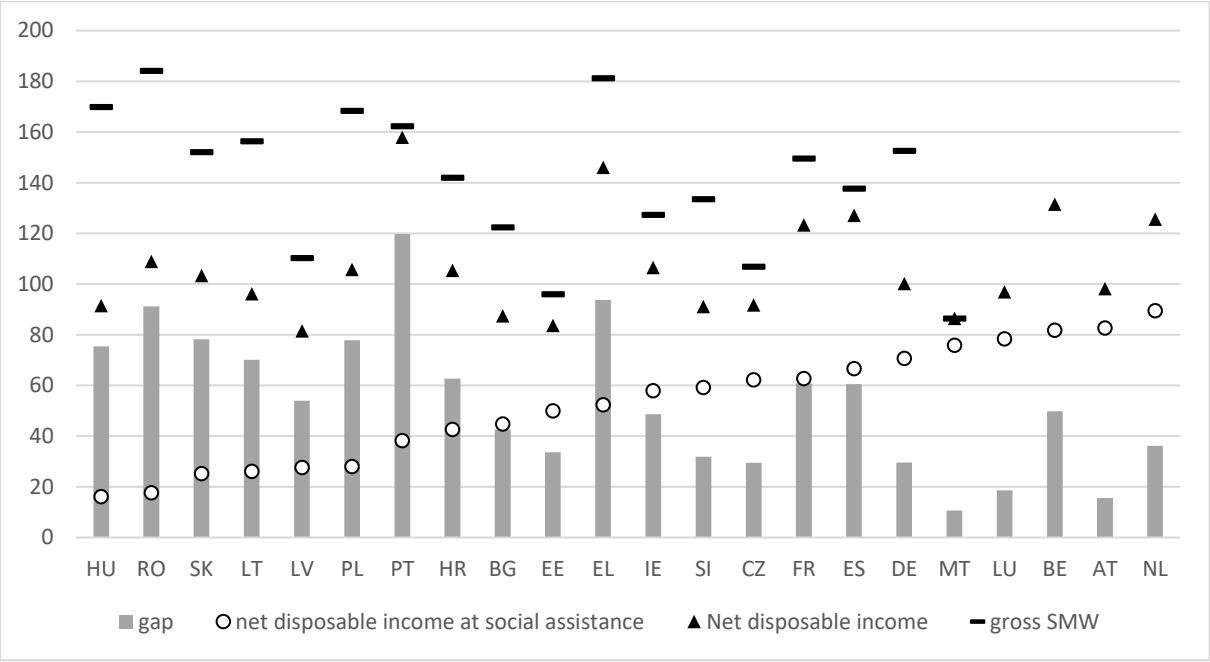
[11] This is precisely how the Speenhamland system in the United Kingdom (1795-1834), by providing poor relief for people employed in the (quasi-)private market, ended up exacerbating the situation of in-work poverty before it was abolished.

[12] The same is also true with universal benefits such as child benefits: unless these are sufficiently targeted for low-wage working households with children, it is a very expensive and thus inefficient way to address in-work poverty.

we can push up wage floors through direct interventions in the labor market, such as minimum wage policy, skills education and training, remains of utmost importance.

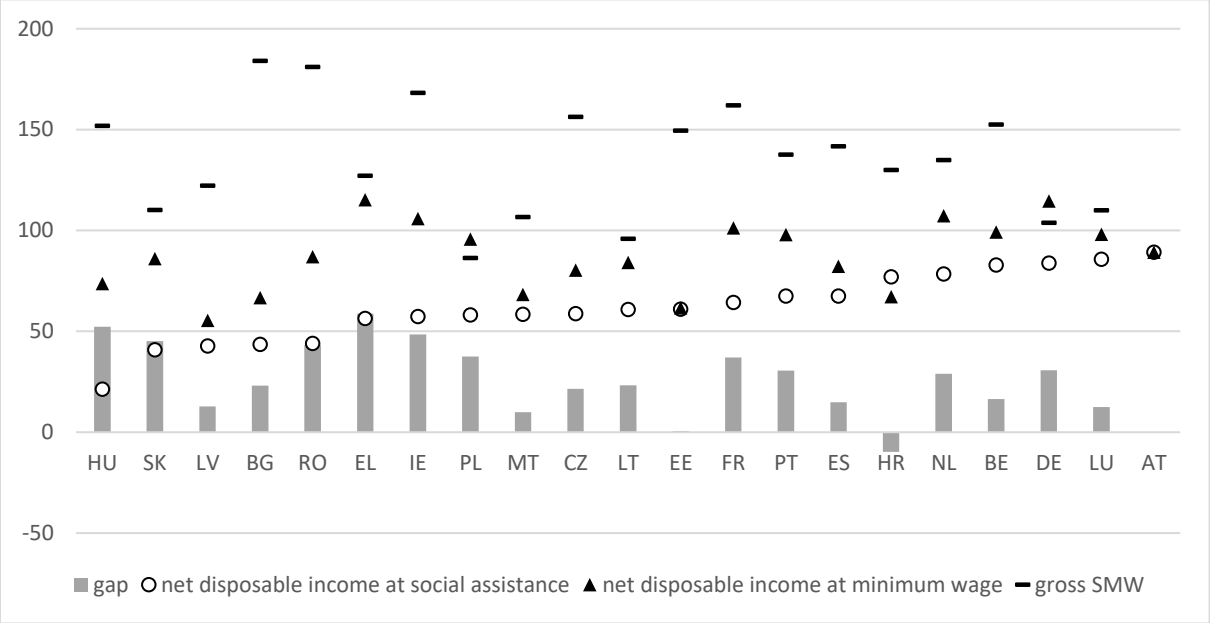
Figure 11. Net disposable income at social assistance and at full-time minimum wage employment, relative to 60% poverty threshold, 2023

Panel A. Single person



Moreover, there may exist strong reasons to maintain the principle of universalism on benefit types such as child benefits: in many advanced welfare states, this remains one of the few social transfers which the middle class may expect to receive as a direct return for their tax payments (Van Lancker and Van Mechelen 2015).

Panel B. Single parent with two children



Note: Countries are ranked by the net income relative to the poverty line when on social assistance
Source: MIPI-HHoT (see Marchal et al. 2018). We thank Elise Aerts and Alessandro Nardo for valuable assistance in updating this dataset. For more details see Marchal and Marx (2024).

Can we push up wage floors further?

Just to recap where we are now. Statutory, absolute and effective wage floors obviously matter for people who primarily rely on labor market earnings for their income. However, they are also relevant for people relying on minimum income benefits, because the maximum level where governments are able to set those benefits – for a variety of political, economic and perhaps even ideological reasons – is capped by the "glass ceiling" of the wage floor. Theoretically, it would be possible to raise the glass ceiling by supplementing the net incomes of low-wage workers with income transfers. Not only would this be expensive for governments if applied at scale: there is also a risk that excessive reliance on in-work benefits would become impossible to future governments to reverse. All of this suggests that the focus of policy attention should be on wage floors and skill-building policies.

Looking at public and academic discourse on wage floors, there is a fascinating contrast. On the one hand, policy-makers after the financial crisis are experiencing renewed policy interest in wages, and minimum wages in particular. After decades of intense and at times heated discussion, Germany introduced a statutory minimum wage in 2015. There are Living Wage Campaigns in many countries, seeking to bring the wages of low-paid occupations closer to their true social added value and above the legally permissible or negotiated minimum (Schulten and Müller 2019). Between the end of the financial crisis in 2012 and the start of the cost-of-living crisis in 2022-23, when inflation, consumer prices and interest rates all spiked to levels not seen since the 1970s, statutory minimum wages in European countries gradually increased at rates slightly greater than inflation (Eurofound 2023).

Not to mention what is happening at the EU level. The Directive on Adequate Minimum Wages (2022/2041/EU) is a remarkable step forward in the social dimension of European integration. This directive would have been unthinkable only a decade ago (Müller and Schulten 2024). Despite the EU's limited legal competence in wage-setting, the directive outlines a strong double decency threshold for statutory and negotiated minimum wages: 50% of the gross mean wage and 60% of the gross median wage. Furthermore, countries where collective bargaining coverage is less than 80% are required to draft a tripartite action plan with employers' organizations and trade unions to improve the processes of collective bargaining and increase the coverage of collective agreements.

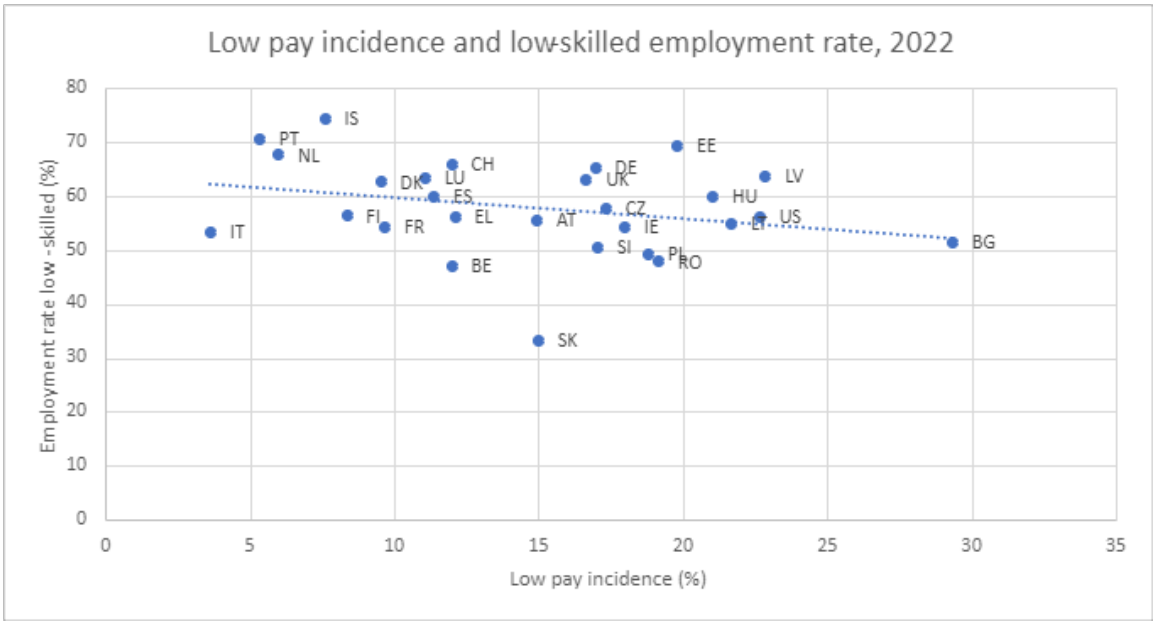
In the wake of the financial crisis and the more recent Covid-19 emergency which had profound labor market effects, European countries and institutions are increasingly coming to recognize that strong statutory, absolute and effective wage floors are crucial instruments of social protection, with implications for the entire minimum income hierarchy.

Yet at the same time there remains a good degree of apprehension about the possibility of lifting wage floors. The changes associated with the transition from industrial to post-industrial labor markets, including the decline of blue-collar manufacturing, intensifying international trade, migration and skill-biased technological change, are widely feared to have made it much more difficult for workers with little or no formal education to find stable, well-paying employment. This was already argued in the influential report of Esping-Andersen et al. (2002): "We no longer live in a world in which low-skilled workers can support the entire family. The basic requisite for a good life is increasingly strong cognitive skills and professional qualifications… Employment remains as always the *sine qua non* for good life chances, but the requirements for access to quality jobs are rising and are likely to continue to do so."

In other words, it has long been argued that rich countries have come to face a choice between two evils, and if that is too strong a word: undesirable outcomes. Either they accept the reality of low-paid precarious work or they face the prospect of unemployability for large swathes of the work force.

This once widely held view, among academics and policy makers alike, that advanced economies would be facing a worsening trade-off between low pay and no pay has long been debunked (Salverda and Checchi 2014; Garnero, 2021; Kenworthy 2008, 2011, 2020; Howell 2021; Howell and Kalleberg 2022) There simply is no evidence that fewer low-paid jobs necessarily mean fewer employment chances for the less skilled, as Figure 12 illustrates. In fact, the opposite appears to be the case.

Figure 12. Low pay and low-skilled employment.



By the same token, decades of intensive and sophisticated empirical research into the employment effects of minimum wages have yielded a similar conclusion: minimum wage hikes do not have to come at a cost in terms of job losses or slower job growth (Dube 2019).

And there is no reason to fear a reversal any time soon. Skill demands are changing for sure. Jobs and even entire occupations disappear, that is also certain. But of course this is not to say that work in general is disappearing (Autor 2015). Also, much of the empirical evidence goes against the idea of a straightforward demand shift against the low-skilled. Instead, some of the evidence points to a process of job polarization (Goos et al. 2009; 2014). This refers to an increase in both high-skilled and low-skilled employment, while at the same time routine-intensive jobs typical of the broad 'middle class' are vanishing. The greatest victims have been jobs that are automatable or offshorable: replacing the high-cost worker in a rich welfare state with a computer, robot, or a remote employee from a country with much lower labor costs. Such displacement is less possible with complex non-routine jobs, whether conducted by highly-educated, high-income people, or by low-paid workers in tasks such as cleaning, catering, construction and last-mile logistics that cannot physically be offshored (Goos et al. 2009, 2014; Goos 2013).

We are now seeing the AI revolution. Of course, the popular media are yet again awash with dystopian predictions. David Autor, the scholar who has done among the most rigorous empirical research of what technology actually mean for human labor, claims that AI poses a real risk to labor markets, but not that of a technologically jobless future. In fact, he sees reason why AI may stop the trend towards job polarization. "The unique opportunity that AI offers humanity is to push back against the process started by computerization – to extend the relevance, reach and value of human expertise to a larger set of workers. Because artificial intelligence can weave information and rules with acquired experience to support decision-making, it can enable a larger set of workers equipped with necessary foundational training to perform higher-stakes decision-making tasks currently arrogated to elite experts, such as doctors, lawyers, software engineers and college professors. In essence, AI – used well – can assist with restoring the middle-

skill, middle-class heart of the U.S. labor market that has been hollowed out by automation and globalization." (Autor 2024).

May a new dawn for poverty reduction be looming?

Gloomy forecasts of human labor, especially low-skilled labor becoming superfluous in rich economies, except under the acceptance of miserably low wages, have turned out to be spectacularly wrong. Employment has reached the highest levels ever recorded in many countries. This has by and large not come at the cost of more wage inequality or low pay.

In fact, with vacancies exceeding the number of potential candidates, labor markets are tighter than ever. In some countries that is translating into the strongest wage increases seen in a generation. The turn-around in the United States is spectacular. After decades of real wage stagnation for large swathes of the work force and even real wage decline at the lower end of the labor market, real wages are finally increasing again. Autor et al. (2023) document a rapid relative wage growth at the bottom of the distribution in the United States over recent years, reversing nearly 40 per cent of the four-decade increase in wage inequality!

The trend does not seem to be confined to the US. The inflation crisis affected real wages in a strongly negative way in many countries but there is also evidence of wages catching up again. The OECD (2024) reports that in 19 of the 33 countries with available data between Q4 2019 and Q3 2023, real wages performed relatively better in low-wage industries than in both mid- and high-wage industries.

Record low unemployment and vacancy rates have placed trade unions and workers in an even stronger bargaining position. With the recent inflation crisis, we saw unions in many cases breaking up the existing collective agreements – which were perhaps completely unprepared for the eventuality of double-digit inflation – to demand wage increases above inflation.

It is uncertain what the future may bring but there are reasons for optimism. Demographic trends lead us to believe that the scarcity of labor supply is here to stay, and most likely to increase. Many more older workers are leaving the labor market, despite rising retirement ages, than there are young people available to replace them. Labor demand also remains strong despite technological advances, notably AI, that are refueling fears of imminent mass unemployment. Such fears have existed for centuries and have invariably proven to be unfounded (Frey 2019). Still, one cannot exclude the possibility that technology may one day displace important sections of the labor force.

Meanwhile, the EU has taken a bold move in the form of the Directive on Adequate Minimum Wages (2022/2041/EU). Although its provisions on minimum wages are not legally binding on member states in the strictest sense, the recommended ‘double decency threshold’ of 60% gross median wage and 50% gross mean wage has already led to member states implementing such objectives in their national legislation (Müller and Schulten 2024). The second objective for measures to increase collective bargaining coverage in member states where less than 80% of workers are covered carries similarly strong normative power.

Currently, very few member states come near to those targets. Most minimum wages in the European countries find themselves in the ranges of 47 – 57% of the median wage, and 40 – 45% of the national average wage. Collective bargaining coverage is way below the 80 per cent target in the vast majority of member states.

In an earlier paper (Haapanala et al. 2023) we show that these targets make sense if the aim is to lift wage floors. Our findings suggest that statutory minimum wages and collective bargaining both have distinct and

complementary roles in establishing wage floors and reducing the share of low-paid workers. Statutory minimum wages help to lift wage floors and higher collective bargaining coverage is associated with a lower share of workers earning low pay.

Is the double decency threshold in the Minimum Wage Directive realistic? From a comprehensive review of the international (although mainly US-based) literature, Dube (2019) concludes that prior minimum wage increases up to 60% of the median wage generally had limited to no significant employment effects. That is not to say that this conclusion is universally applicable. As with most policy choices, wider context and circumstances remain of the essence.

The EU's Minimum Wage Directive almost appears as a case of policy running way ahead of science. Usually it is (progressive) social scientists who advocate bold moves while policy makers tend to be more cautious and "pragmatic". Now the roles seem reversed. Perhaps rightfully so if, as David Autor speculates, the industrialized world is indeed poised to run out of workers before it runs out of jobs.

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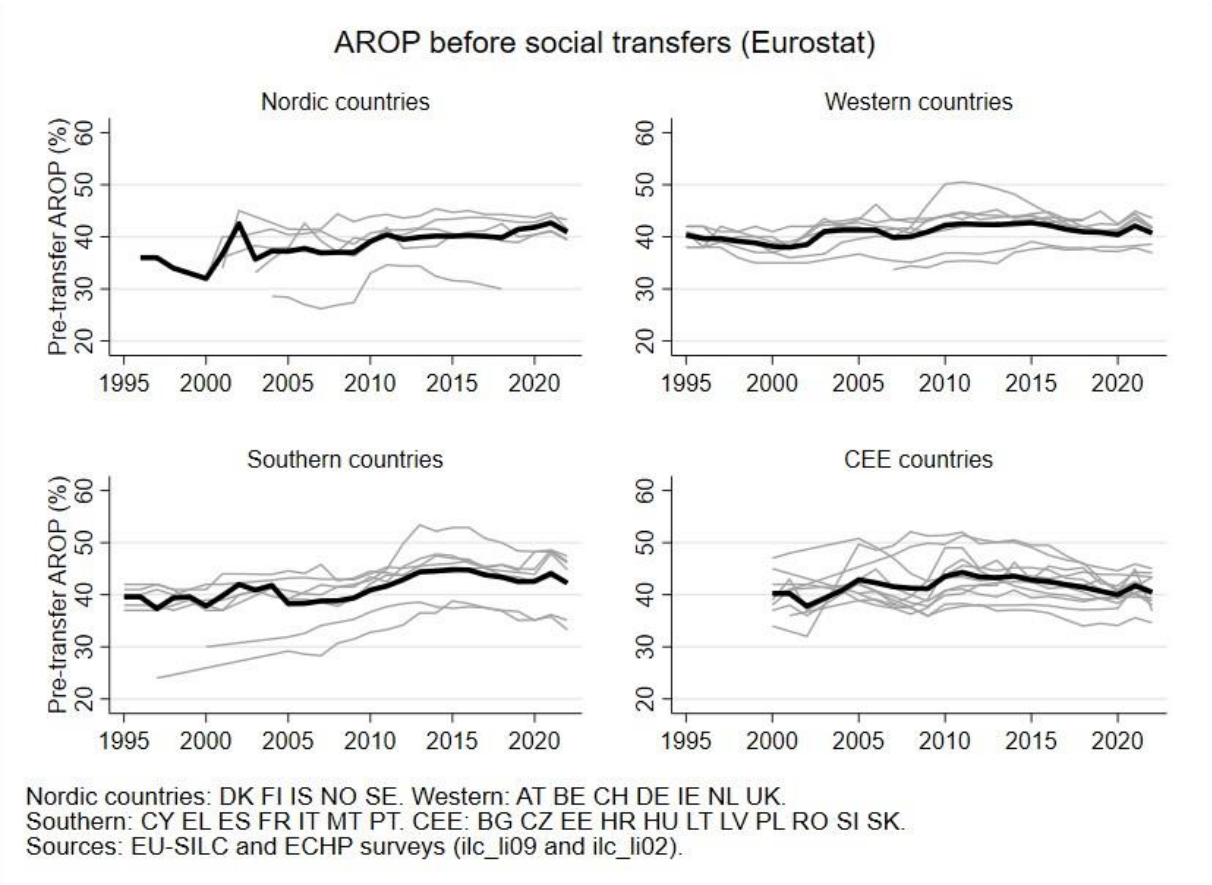
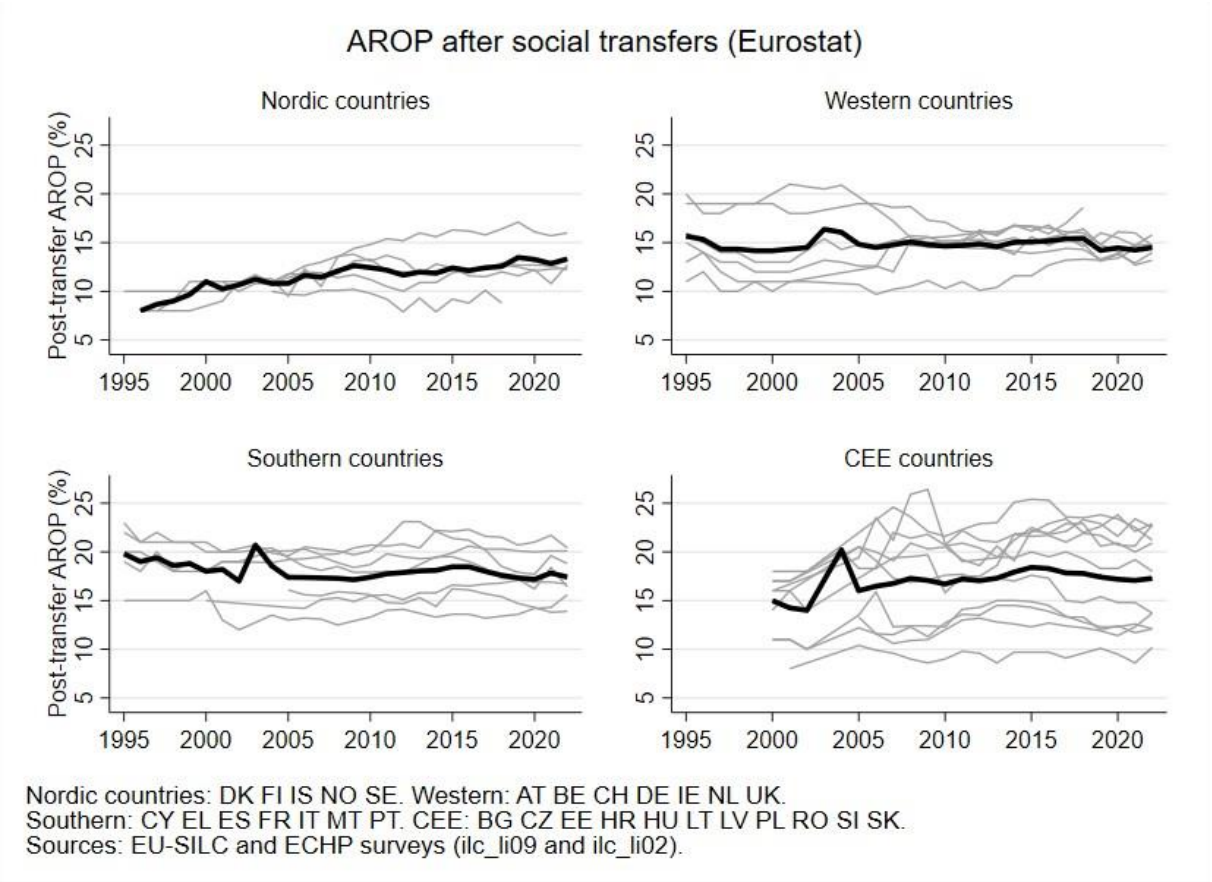
APPENDIX GRAPHS

Appendix Figure 1: At Risk of Poverty Rate (AROP) before social transfers, breakdown by country clusters, EU SILC

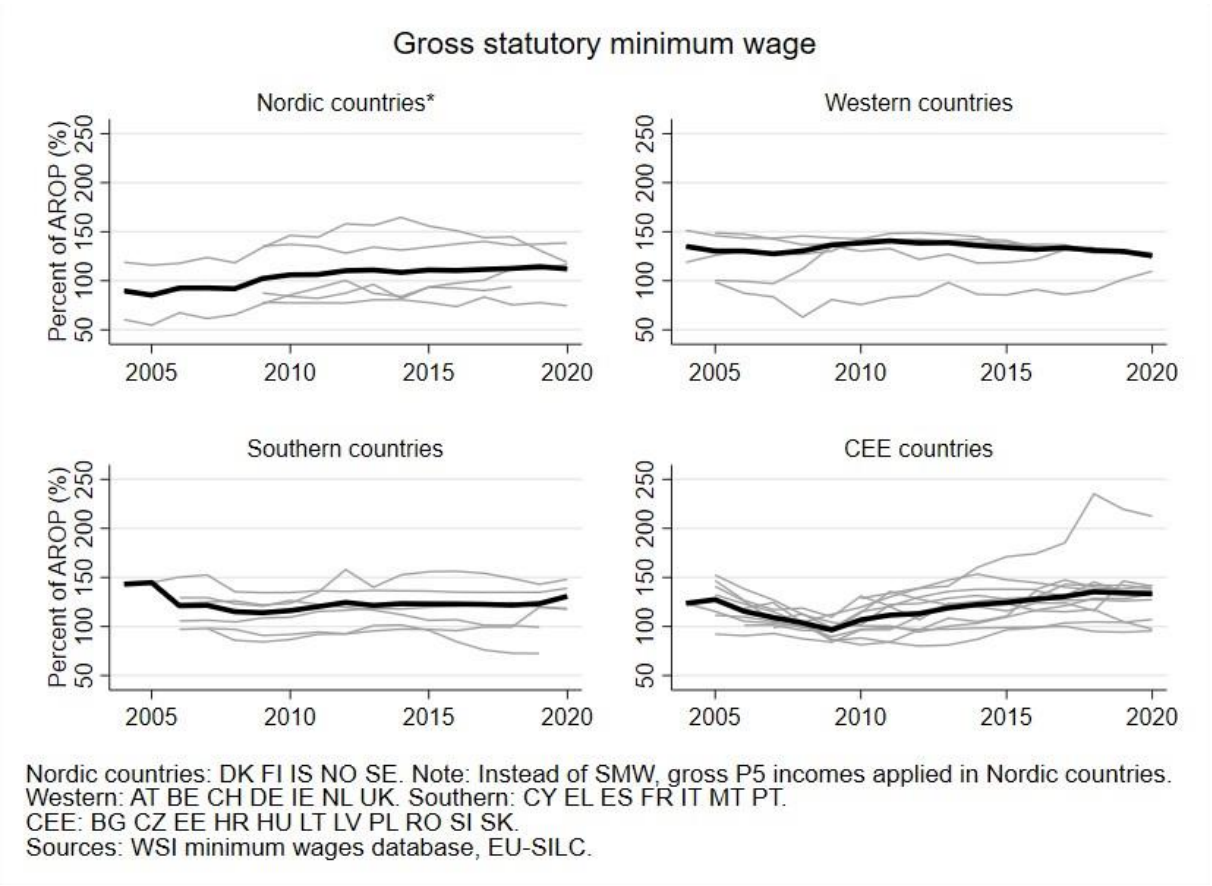


Nordic countries: DK FI IS NO SE. Western: AT BE CH DE IE NL UK.
Southern: CY EL ES FR IT MT PT. CEE: BG CZ EE HR HU LT LV PL RO SI SK.
Sources: EU-SILC and ECHP surveys (ilc_li09 and ilc_li02).

Appendix Figure 2: At Risk of Poverty Rate (AROP) after social transfers, breakdown by country clusters, EU SILC

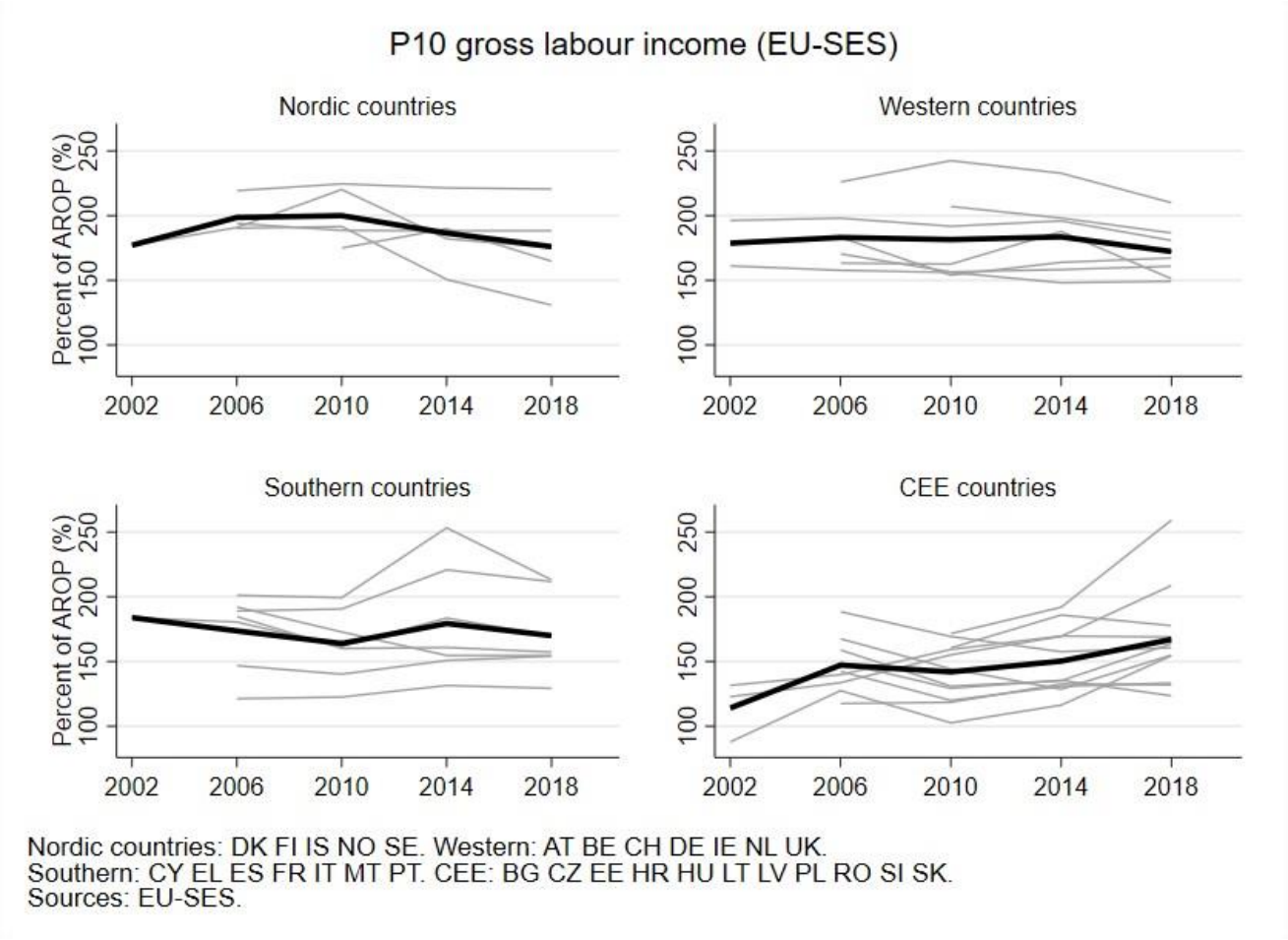


Appendix Figure 3: Statutory minimum wage as a percentage of the relative poverty threshold, breakdown by country clusters.



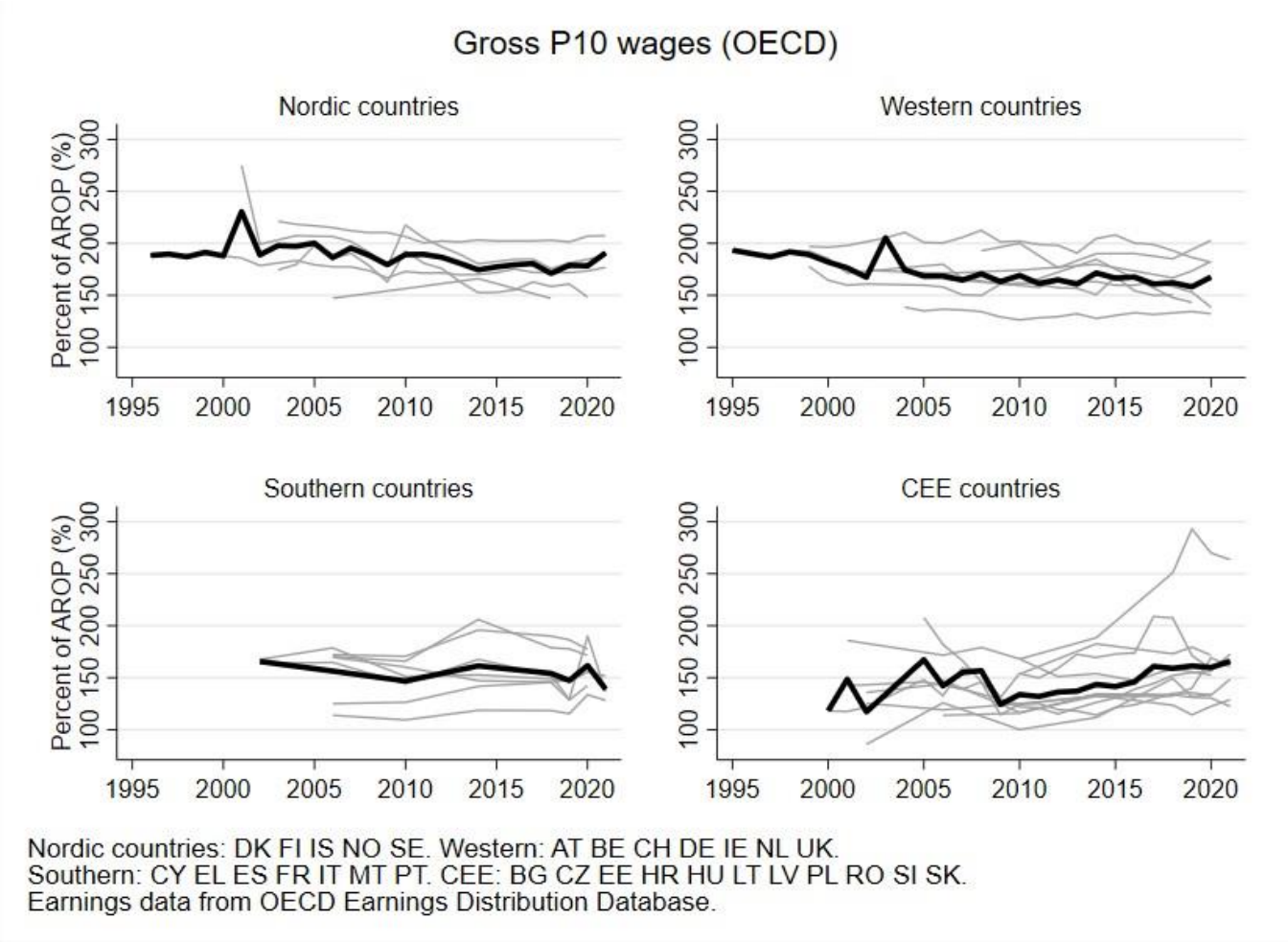
Nordic countries: DK FI IS NO SE. Note: Instead of SMW, gross P5 incomes applied in Nordic countries.
Western: AT BE CH DE IE NL UK. Southern: CY EL ES FR IT MT PT.
CEE: BG CZ EE HR HU LT LV PL RO SI SK.
Sources: WSI minimum wages database, EU-SILC.

Appendix Figure 4: P10 gross labour income upper value as a percentage of the relative poverty threshold, breakdown by country clusters, Structure of Earnings Survey data

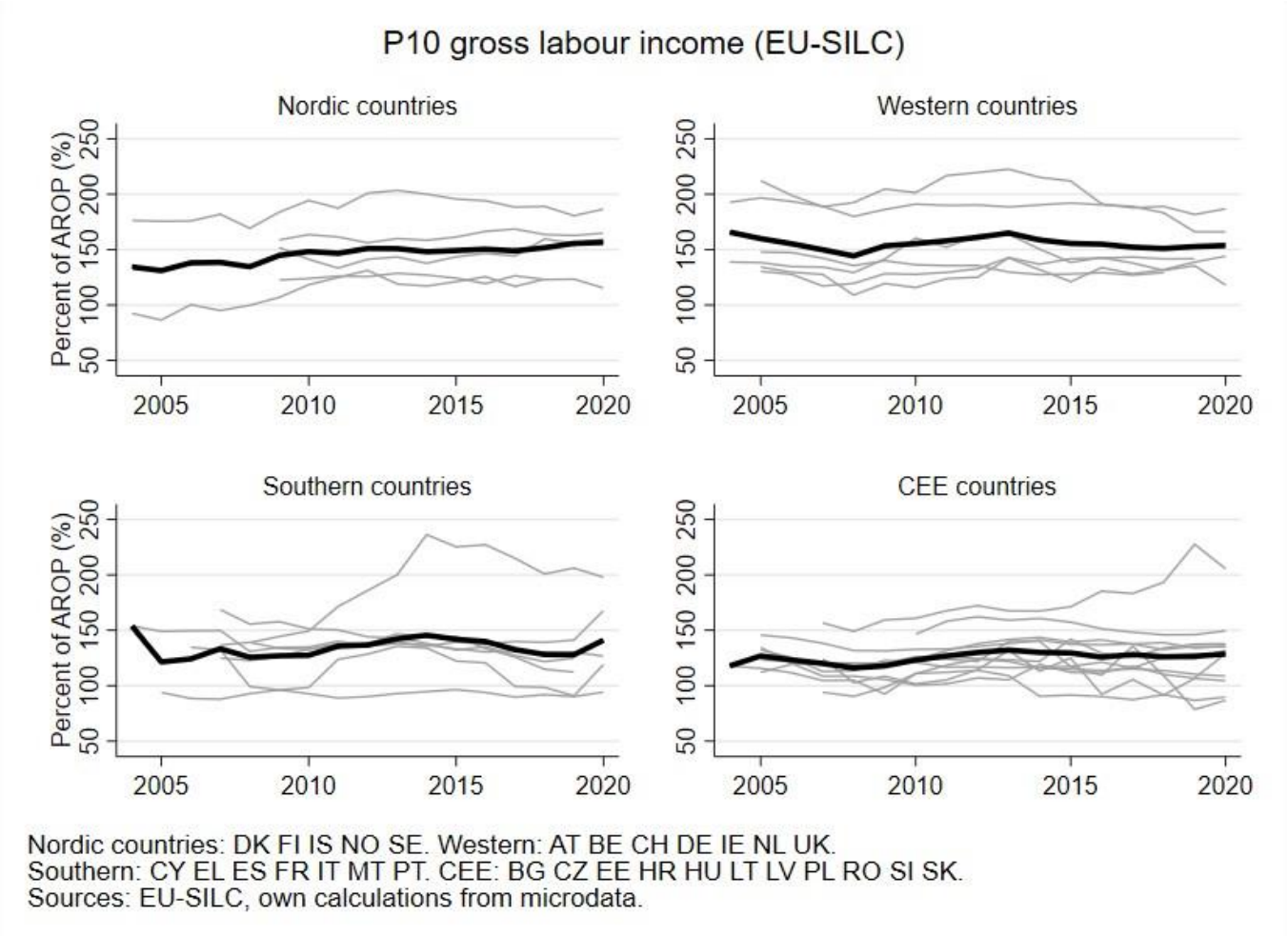


Nordic countries: DK FI IS NO SE. Western: AT BE CH DE IE NL UK.
Southern: CY EL ES FR IT MT PT. CEE: BG CZ EE HR HU LT LV PL RO SI SK.
Sources: EU-SES.

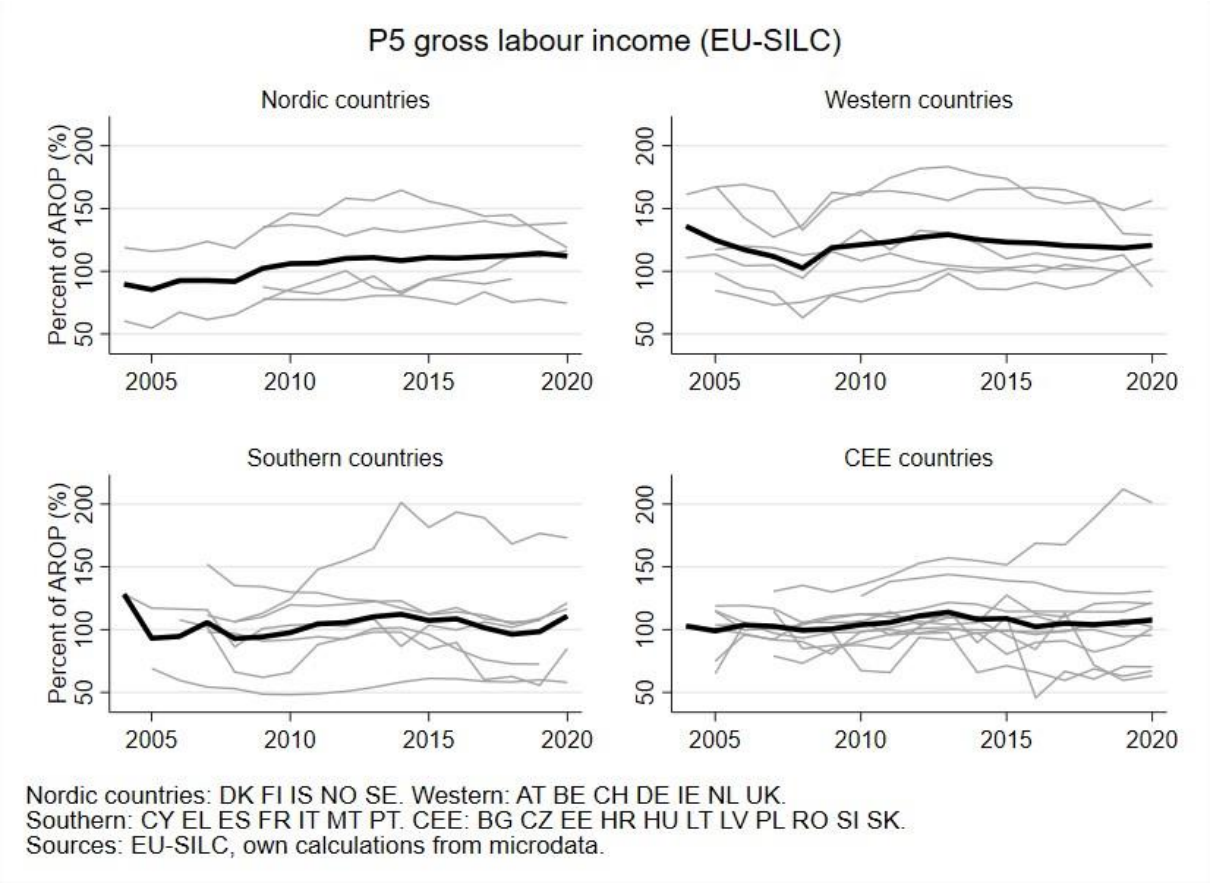
Appendix Figure 5: P10 gross wage upper value as a percentage of the relative poverty threshold, breakdown by country clusters, OECD data base



Appendix Figure 6: P10 gross labour income upper value as a percentage of the relative poverty threshold, breakdown by country clusters, EU SILC data

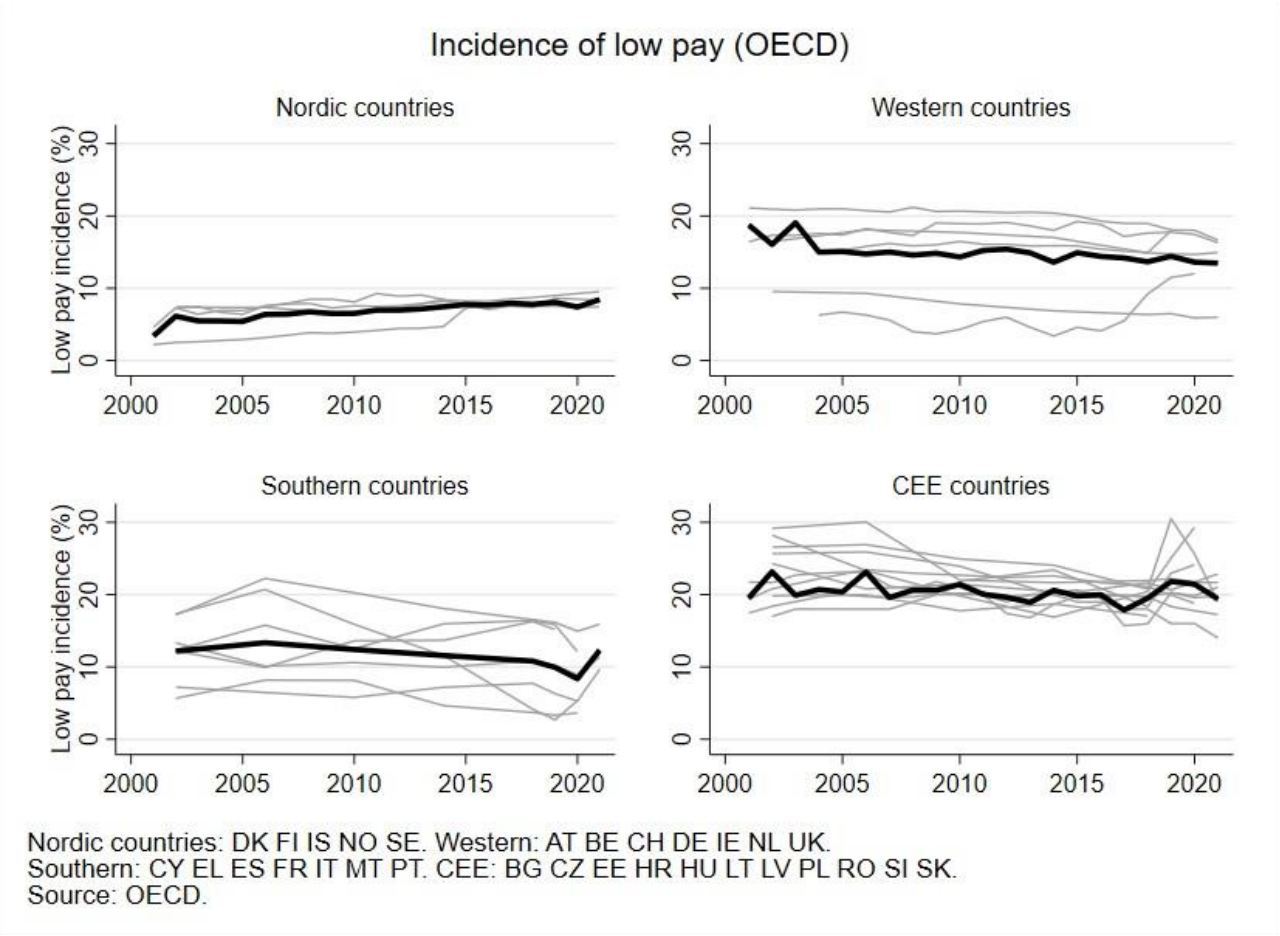


Appendix Figure 7: P5 gross labour income upper value as a percentage of the relative poverty threshold, breakdown by country clusters, EU SILC data



Nordic countries: DK FI IS NO SE. Western: AT BE CH DE IE NL UK.
Southern: CY EL ES FR IT MT PT. CEE: BG CZ EE HR HU LT LV PL RO SI SK.
Sources: EU-SILC, own calculations from microdata.

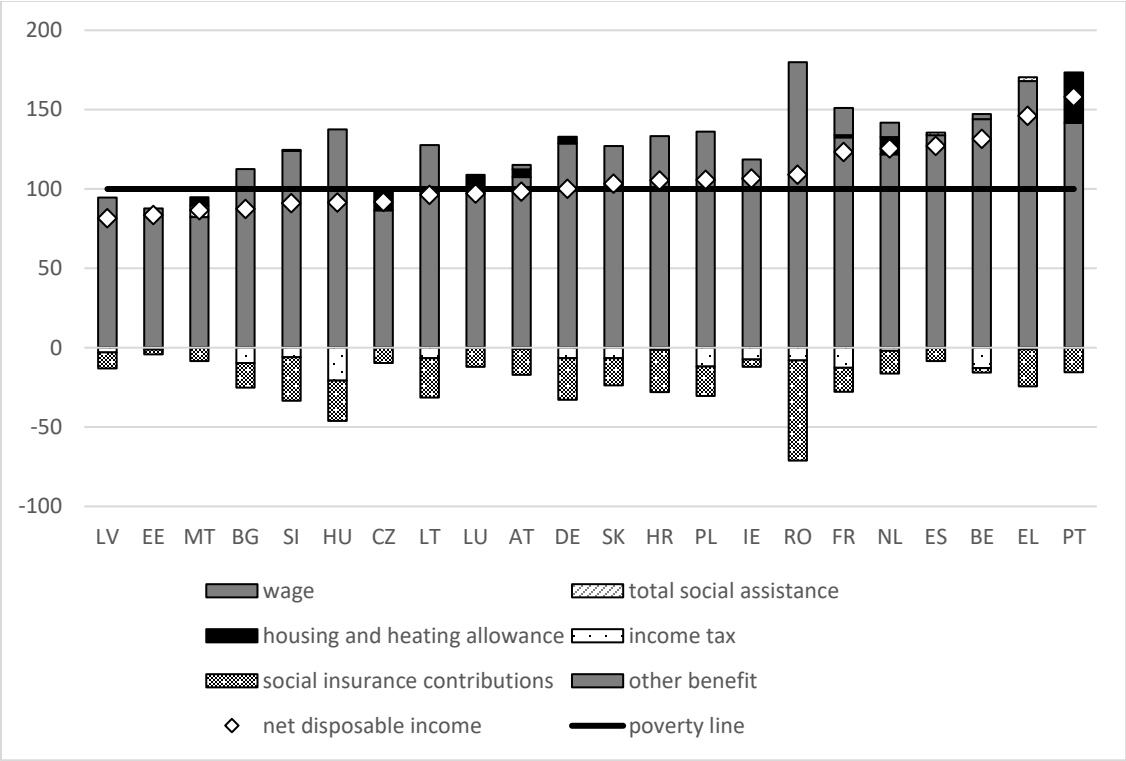
Appendix Figure 8: Low Pay Incidence, breakdown by country clusters, OECD data



Note: Low paid are full-time workers earning less than 67% of the median gross wage.

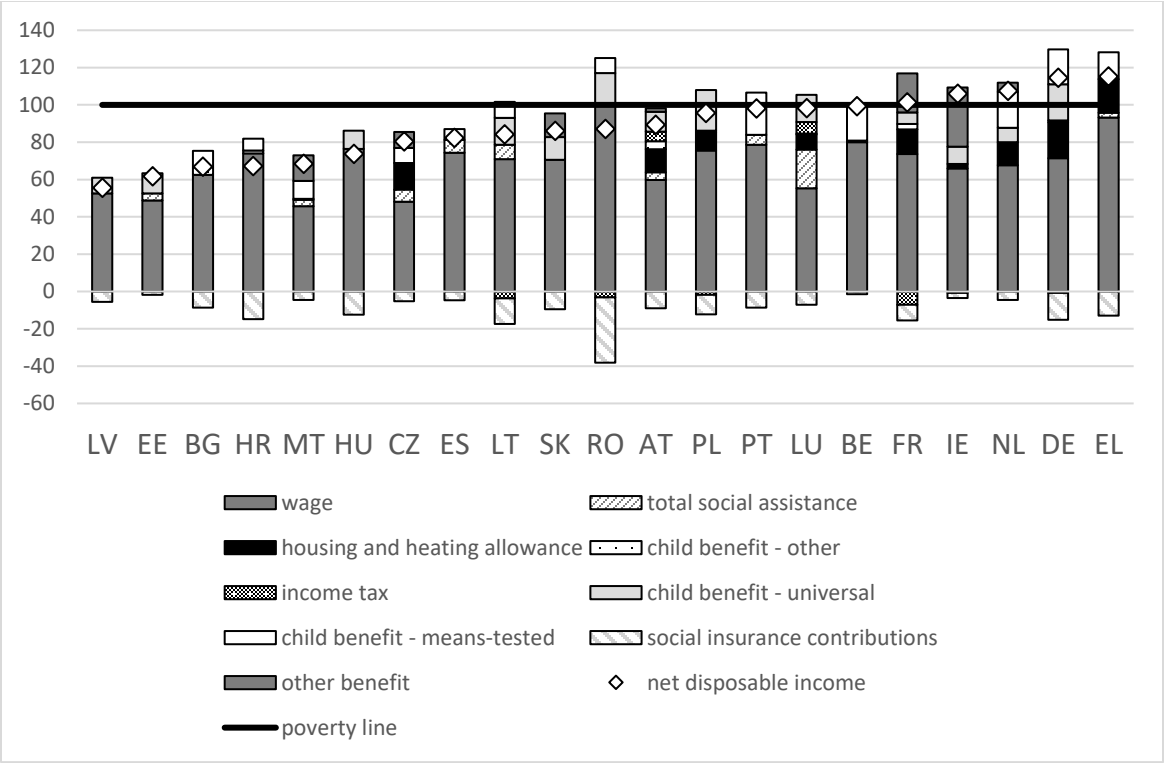
Appendix Figure 9: Net income relative to the poverty line when working at the statutory minimum wage, full time worker in two household situations, 2023

Panel A. Single person household



Appendix Figure 9 (cont.): Net income relative to the poverty line when working at the statutory minimum wage, full time worker in two household situations, 2023

Panel B. Single adult with 2 children



APPENDIX TABLES

Appendix table 1. Full-time gross earnings floors relative to AROP threshold, latest available data and change since early 2000s.

	First year	Last year	SILC P5	change (P.P.)	SILC P10	change (P.P.)	OECD P10	change (P.P.)	SES P10	change (P.P.)	SMW	change (P.P.)
EU28	**2004**	**2020**	**108.4**	**1.5**	**137.3**	**0.0**	**160.1**	**0.8**	**168.9**	**2.2**	**129.2**	**10.0**
RO	2007	2020	201.0	70.49	205.4	48.75	269.8	101.91	259.2	87.72	212.4	113.55
EL	2008	2020	173.1	66.66	197.9	58.99	171.5	5.7	213.1	11.97	148.0	24.58
NL	2005	2020	156.5	-11.46	186.8	-25.34	182.8	11.65	180.8	-15.41	128.2	-10.93
DK	2004	2020	118.7	-0.18	186.6	10.27	206.8	-11.46	220.6	1.27	-	-
FR	2004	2020	121.4	-6.88	167.7	13.79	155.5	-23.13	157.3	-27.47	139.0	-4.05
BE	2004	2020	128.8	-32.35	165.9	-26.74	181.8	-28.69	210.0	-16.03	124.2	-27.19
FI	2009	2020	138.6	3.21	164.8	6.06	173.5	-10	188.4	-5.6	-	-
SE	2009	2020	116.6	29.03	159.4	7.52	184.6	-22.86	175.4	-1.74	-	-
HR	2010	2020	130.7	4.1	149.5	2.91	171.5	17.93	177.7	17.23	136.8	8.09
AT	2005	2020	109.8	11.21	144.1	9.86	132.3	-6.35	161.0	-9.44	-	-
DE	2005	2019	99.9	15.2	141.8	11.33	153.1	-25.23	167.3	-15.79	129.0	-6.75
SK	2005	2020	120.6	5.87	137.9	5.44	156.7	-51.2	163.8	4.91	133.3	-19.2
PL	2005	2020	121.7	2.74	135.8	-9.92	152.6	-19.07	160.7	-27.78	142.0	-4.82
SI	2005	2020	102.3	27.44	135.2	11.13	132.8	13.6	168.9	37.47	127.3	23.87
CZ	2005	2020	110.0	6.3	132.0	8.38	133.3	-12.63	154.9	-12.59	107.2	-25.22
UK	2005	2018	103.3	-13.82	129.3	-18.54	150.4	-9.38	149.2	-11.97	134.2	47.19
LT	2005	2020	101.1	-13.95	129.0	-5.68	169.3	21.64	133.3	-9.04	141.1	0.23
PT	2007	2020	116.5	5.1	126.8	1.78	142.4	16.06	154.1	7.31	117.6	12.01
LU	2004	2020	105.7	38	125.8	29.25	142.1	24.72	142.0	13.25	113.2	9.06
MT	2007	2019	107.2	-44.98	124.8	-43.79	147.4	-12.88	154.6	-37.41	99.3	-30.14
IS	2004	2018	93.9	33.48	123.4	30.92	147.1	-0.18	164.8	-10.18	-	-
ES	2006	2020	85.1	-22.64	119.0	-15.63	189.8	25.19	169.6	-14.29	118.4	25.04
IE	2004	2020	87.8	-22.83	118.0	-20.82	143.3	-22.5	151.2	-12.08	123.8	5.05
NO	2009	2020	74.5	-3.57	115.4	-7.25	148.3	-31.42	130.9	-59.4	-	-
IT	2007	2019	72.5	-25.64	112.3	-24.41	186.4	15.91	211.7	22.76	-	-
LV	2007	2020	95.6	16.61	108.7	14.57	130.5	14.62	131.9	14.41	97.4	-3.8
BG	2007	2020	70.3	-44.87	104.5	-19.84	133.9	33.75	154.5	66.71	135.3	55.27
CY	2005	2020	58.0	-11.09	94.2	0.26	133.7	19.75	129.2	7.98	-	-
EE	2004	2020	67.2	-35.76	89.7	-28.18	122.5	-21.57	123.5	-25.65	95.5	-28.07
HU	2005	2020	63.1	-1.81	86.8	-25.18	158.2	10.13	208.7	86	138.6	56.12
CH	2010	2018	-	-	-	-	-	-	186.6	-20.5	-	-

Notes: Gross earnings quantiles expressed as percentage of single-person AROP threshold (annual net equivalized disposable income for single-person household). First and last years of observation refer to earnings quantiles calculated from EU-SILC. OECD, SES databases have slightly different time ranges of observations.

Sources: SILC P5, P10: own calculations from EU-SILC microdata. OECD: gross earnings deciles from Earnings Distribution Database. SES: gross wage deciles from EU-SES. SMW: monthly statutory minimum wages multiplied by 12 from WSI Minimum Wages Database.