

Eligibility and benefit adequacy for families in the tax-benefit system

Micro-simulations using EUROMOD

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Risks, Resources and Inequalities:

Increasing Resilience in European Families

Title: Eligibility and benefit adequacy for families in the tax-benefit system: Micro-simulations using EUROMOD

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Introduction

In this deliverable, we critically analyse the tax-benefit systems of Belgium, Croatia, Poland, Spain, Sweden and the United Kingdom, for their capacity to function as an automatic stabiliser and protect the income and reduce the risk of poverty for a range of different household- and family types.

Automatic stabilisers are forms of income protection that sustain people's livelihood *and* purchasing power in times of economic downturn. Particularly as unemployment goes up, automatic stabilisers such as unemployment benefits (and to a lesser extent social assistance) partially protect the individuals against income losses, thus keeping the demand for goods and services to ensure a quick economic recovery (Farnsworth & Irving, 2018). As such, automatic stabilisers serve a function that corresponds to the conceptualization of resilience, to provide well-being, or decent living conditions, despite adverse conditions.

Automatic stabilisers are particularly considered in macro-economic analyses and -recommendations (European Central Bank, 2020), and generally gain considerable attention in times of crisis, including the Great Recession (Andersen, 2016) and Covid-19 (Brewer & Tasseva, 2021; Nowiński et al., 2022). In a similar vein, the EU Recovery and Resilience Facility, implemented in response to Covid-19, has strong stabilising elements as it allows member states to borrow funds to “implement ambitious reforms and investments that make their economies and societies more sustainable, resilient and prepared”¹. Similarly, responding to ongoing megatrends that the EU seeks to prepare for, the high-level group on the future of social protection recommend that welfare states “should ensure an adequate buffer against the social risk of income inadequacy” (European Commission, 2023, p. 45). In more general terms, automatic stabilisers (or, in the terms of the aforementioned high-level group, buffers) are considered to improve societal and economic resilience (Alcidi & Thirion, 2017; Stráský & Claveres, 2018) (Alcidi & Thirion, 2017; Stráský & Claveres, 2018).

Research has shown that the capacity for income stabilisation in tax-benefit systems is substantial at the macro-level, and has remained more or less stable over the last decades (Maravalle & Rawdanowicz, 2020), and that in addition to various social security-based and social assistance-based income protection benefits, the degree of income stabilisation is further promoted by (the progressive nature of) income taxes (European Commission. Directorate General for Economic and Financial Affairs, 2018).

¹ https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en (last accessed 20 August 2024)



With this it is meant that income shocks to disposable income (after taxes) tend to be smaller than the income shocks to market-income, an effect that was found in particular important for high-income households (Coady, 2023).

However, the literature on automatic stabilisers generally focuses on macro-economic outcomes, thus ignoring (among other heterogeneities) family diversity (Dolls et al., 2011, 2020; Maravalle & Rawdanowicz, 2020). Yet, it has been well-established in the social policy literature that there are inequalities in who has access to, and who benefits from, policies that are part of the tax-benefit system (Overview: Nieuwenhuis et al., 2023). Some of the underlying causes of these inequalities relate to:

- Benefit levels (Marx et al., 2024; Nelson, 2013)
- Eligibility criteria (O'Brien et al., 2020)
- Non take-up (Janssens & Van Mechelen, 2022; Marc et al., 2022)
- Lack of flexibility and inclusiveness (Daly, 2023; Dobrotic & Martinis, 2023; Leon & Cerrillo, 2023)
- Mis-matches or lack of synergies between various policies (Eurydice, 2023; Leon, 2024; Yerkes & Javornik, 2019)
- Matthew effects (Van Lancker, 2023)

These issues may reproduce and create inequalities in who has access to the welfare state – including the tax-benefit system, and thus undermine the capacity of tax-benefit systems to stabilize incomes. The lack of access to the welfare state relates to issues of policy supply (what do policies intend to provide, and to whom?) and policy demand (who seeks access to the welfare state, and how does their background, family composition, and employment history affect their eligibility). Problems with aspects of policy supply or policy demand can have different origins and dynamics, which warrant very different policy recommendations (Clasen & Siegel, 2007; Helmdag, 2022; Nelson & Nieuwenhuis, 2021; Otto & Van Oorschot, 2019). For that reason, in this deliverable, we limit our focus to the policy supply side. We take a social-rights perspective on how various tax-benefit policies are designed and what they intend to provide to a range of household- and family types in a number of (un)employment-related scenarios (Marshall, 1950).

This deliverable focuses on the income protection provided through taxes and benefits, and their impacts on the poverty risk of different types of households – thereby describing the variation in how redistribution sustains income stability of households. The overarching question is *“How well are households that differ in their family relations protected against income poverty through taxes and benefits?”*. We address this by answering four sub-questions:

1. How (financially) well-off are dual-earner couples with children and single parents in different European countries?
2. How (financially) well-off are different household types when they earn a low wage?
3. How well are unemployed couples supported (financially) by different out-of-work benefits?
4. How (financially) well-off are unemployed single parents when living with grandparents or taking up part-time employment?



Methods

In this deliverable, we use the European tax-benefit microsimulation models EUROMOD and UKMOD. Microsimulation modelling enables the assessment of the impact of specific policy rules on benefit entitlements and tax liabilities of a micro-unit by combining country-specific tax-benefit rules with detailed micro-level information on household income and demographic characteristics (Sutherland & Figari, 2013). In general, the model is able to simulate direct taxes, social insurance contributions and cash benefits (Aerts et al., 2023; Sutherland & Figari, 2013). Covering all member states of the European Union and the United Kingdom, this model is a unique tool for conducting cross-country comparisons of tax-benefit system. It is particularly useful to analyse existing, proposed and hypothetical tax-benefit policies. For this deliverable, we focus on the cross-country comparison of existing tax-benefit policies and their distributional outcomes, using the 2023 policy system² in the model.

The European microsimulation model operates on both representative empirical data, usually from the European Union statistics on income and living conditions (EU-SILC) survey, and hypothetical data – i.e., based on reference individual or household characteristics suitable for comparisons. In this deliverable, we employ hypothetical household data generated by the Hypothetical Household Tool (HHoT). HHoT is integrated within the European microsimulation models, EUROMOD and UKMOD. It allows users to define specific family constellations, with complete control over the household characteristics (e.g. the household income, the household composition, the employment status, the age of children and so forth), allowing users to define specific family constellations (Hufkens et al., 2019). This allows for an ideal “all else equal” evaluation by sidestepping actual population compositions in empirical data, thereby enabling a more thorough analysis of the impact of tax-benefit policy rules, revealing the degree of targeting towards specific family constellations, interactions between policies and the overall adequacy of the tax-benefit system (Derboven et al., 2024; Hufkens et al., 2019). By keeping household characteristics constant, hypothetical data facilitates cross-country comparisons of specific tax-benefit policies (Hufkens et al., 2019).

Notwithstanding the strengths of microsimulation modelling and the hypothetical household tool, there are some noteworthy limitations. Firstly, the hypothetical household tool assumes that there is perfect take-up of social rights and no tax evasion (Hufkens et al., 2019; Sutherland & Figari, 2013). However, in reality non-take-up of social rights is a significant problem in all European countries (Janssens & Van Mechelen, 2022). The perfect uptake of social rights also implies that there is no discrimination and no unfair treatment by welfare offices. Secondly, EUROMOD only simulates taxes and cash benefits. This excludes the wide range of in-kind benefits (i.e. services) offered to households such as child care services, free school meals, elderly services and so forth. Thirdly, the model does not account for housing benefits. Additionally, given the substantial regional and dwelling-specific differences in housing costs, these are excluded from the simulations.

² The 2023 policy system reflects the tax-benefit policy rules within a country as of June 30, 2023.



Lastly, since hypothetical household data focuses on specific family constellations, the results cannot be fully generalized to the broader population (Derboven et al., 2024). Hence, in the proceeding deliverables the analyses will be conducted using representative empirical data.

Model households

We define the households to match the Families within Household Typology (FHT) (Bartova et al., 2023) as closely as possible. The majority of current studies use the household as the relevant unit of measurement for families. However, neglecting the complexity of family relations within household, the household-based approach can over- or underestimate the prevalence and social outcomes of certain family constellations. For example, two single parents living in the same dwelling are often misclassified as a couple with children. The novel FHT-approach applies a more family-based approach by exploiting family relation variables in empirical datasets, disentangling families within household. This improved identification of family relations enables a more accurate measurement of the prevalence, the poverty risks and living standard of certain family constellations.

Using the Hypothetical Household Tool, we recreate the different FHT-household types. More specifically, we analyse the following household types: (1) Single; (2) Couple without children; (3) Single parent (-65) with an adult child; (4) Single parent (+65) with an adult child; (5) Single parent with dependent children; (6) Couple with dependent children; (7) Couple with an adult child; (8) Single parent with dependent children and grandparents; (9) Couple with dependent children and grandparents.

Table 1 details the household assumptions used in the Hypothetical Household Tool. In each household, there is at least one 35-year-old individual, who serves as the reference point in the table. All 35-year-olds have completed secondary education. When there is only one 35-year-old in the household, their marital status is either single in the 'single household' or divorced in all other households. The marital status of couples is married.

Depending on the family type, we include older household members, namely the parents of the 35-year-old. In the scenarios 'single parent (-65) with an adult child' and 'the couple with an adult child', these parents are still working a full-time job at the average wage. In the other scenarios, they are retired and receive an average pension. If both parents are present, they are married, otherwise, their marital status is divorced. In households with children, the children are aged 2 and 7 years old and are, respectively, attending preschool and primary school.

The labour market variables strongly differ by scenario. The employment status of the 35-year-olds varies between employed, unemployed and inactive. In employment, the individual works a full-time³ job at average wage, as defined by the EU-SILC. However, we also simulate a part-time scenario and a scenario at low wage (defined as earning two-thirds of the average). In case of unemployment, the calculation of contributory unemployment benefits is based on previous full-time employment at average wage. Inactivity comes into effect once the unemployment benefit has been completely depleted⁴. In multigenerational households, the active age parents of the 35-year-old are always full-time employed at the average wage. Elderly parents receive the average pension⁵ within a country expressed as a percentage of the average wage. Note, however, that these analytical choices reflect individuals and households in relatively stable or well-off initial labour market situations. Given that a considerable part of the population exposed to unemployment, part-time and low wage work are

³ A working week of 38 hours or more is considered full-time{Commission, n.d. #7} employment.

⁴ The maximum duration of the unemployment benefit strongly varies between the selected countries.

⁵ The gross pension replacement rates are respectively 42.5% of the average wage in Belgium, 43% in Croatia, 29.3% in Poland, 80.4% in Spain, 62.3% in Sweden and 41.9% in the United Kingdom (OECD, 2023).



facing more precarious conditions – the estimations, in this regard, can be viewed as an upper bound (or overestimation) of income protection.



Table 1 Definition of model household typology

| | Single | Couple without children | Single parent (-65) with adult child | Single parent (+65) with adult child | Single parent with dependent children | Couple with dependent children | Couple with adult child | Single parent with dependent children and grandparents | Couple with dependent children and grandparents |
|-----------------------------|-----------------------|-------------------------|--------------------------------------|--------------------------------------|--|--|------------------------------|--|--|
| Number of household members | One | Two | Two | Two | Three | Four | Three | Five | Six |
| Age | 35 years (1) | 35 years (2) | 60 years (1) 35 years (1) | 70 years (1) 35 years (1) | 35 years (1) 7 years (1) 2 years (1) | 35 years (2) 7 years (1) 2 years (1) | 60 years (2) 35 years (1) | 70 years (2) 35 years (1) 7 years (1) 2 years (1) | 70 years (2) 35 years (2) 7 years (1) 2 years (1) |
| Marital status | Single | Married | Divorced | Divorced | Divorced | Married | Married | Divorced | Married |
| Number of children | None | None | None | None | Two | Two | None | Two | Two |
| Pensioners | None | None | None | One | None | None | None | Two | Two |
| Employment status | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario |
| Hours worked | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario |
| Wage | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario | Dependent on scenario |



Variables

At-risk-of-poverty threshold

To assess if a household is in poverty, we use the at-risk-of-poverty threshold as defined by Eurostat⁶. A household with a net disposable household income below 60% of the median equivalized disposable income is at-risk-of-poverty. Based on the OECD equivalence scale⁷, this threshold is equivalized, i.e. adjusted for households of different sizes.

We utilize Eurostat's⁸ poverty thresholds for the members states of the European Union and the national statistics for the United Kingdom (Francis-Devine, 2024). A household is considered at-risk-of-poverty if their equivalized net disposable income is lower than €1,450 in Belgium, €494 in Croatia, €502 in Poland, €916 in Spain, €1,363 in Sweden and €1,259 in the United Kingdom.

Net disposable income

The net disposable household income is the total income available to a household after taxes and cash transfers.

To better understand how well-protected different family constellations are by the welfare state, we decompose the net disposable household income into different tax and benefit components. More specifically, we identified eight main categories, namely (1) labour income; (2) child related benefits; (3) other benefits; (4) pensions; (5) unemployment benefits; (6) social assistance benefits; (7) taxes; and (8) social insurance contributions. 'Child related benefits' is an overarching category for different types of child support provided by the welfare state (e.g. cash child benefits and education benefits). The 'others' category includes all benefits that cannot be assigned to any of the other categories such as lone parent support, pension related supplements, and so forth. Both the taxes and the social insurance contributions category represent the payable contributions after accounting for credits, exemptions and deductions are deducted. Table 2 details the names⁹ of the key policies for each country within the different categories of the decomposition.

⁶ European Commission. (n.d.). Glossary: At-risk-of-poverty rate. Eurostat. Retrieved August 6, 2024, from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:At-risk-of-poverty_rate.

⁷ In the OECD-modified equivalence scale, the first adult in the household is assigned a value of 1. For each additional household member aged 14 years or older 0.5 is added. Children younger than 14 years receive a value of 0.3 each.

⁸ European Commission. (2024). At-risk-of-poverty thresholds - EU-SILC and ECHP surveys, Eurostat. https://doi.org/10.2908/ILC_LI01

⁹ The names are expressed in the national language if possible.



Table 2 Overview of national policies in the analyses, by country and income component

| Policy category | Belgium | Croatia | Poland | Spain | Sweden | United Kingdom |
|----------------------------|--|---|---|--|--|--|
| Child benefits | <ul style="list-style-type: none"> Groeipakket/allocations familiales Sociale toeslag/supplément social Schooltoeslag/Allocation d'études | <ul style="list-style-type: none"> doplatak za djecu Top-up payment child benefits | <ul style="list-style-type: none"> Zasiłek rodzinny Dodatek z tytułu rozpoczęcia roku szkolnego Swiadczenie wychowawcze rodzinny kapitał opiekuńczy Swiadczenie Dobry Start | <ul style="list-style-type: none"> Prestación por hijo a cargo no contributiva | <ul style="list-style-type: none"> Barnbidrag | <ul style="list-style-type: none"> Child benefits Best Start Foods Free School Meals School Clothing Grant |
| Other benefits | | <ul style="list-style-type: none"> Top-up payment pensioners | <ul style="list-style-type: none"> trzynasta i czternasta emerytura | <ul style="list-style-type: none"> Prestaciones por nacimiento o adopción de hijos en los supuestos de familia numerosa, monoparentales o madres discapacitadas | <ul style="list-style-type: none"> Bostadsbidrag/Bostadstillägg | <ul style="list-style-type: none"> Winter Fuel Allowance Cost of Living Payment |
| Social assistance benefits | <ul style="list-style-type: none"> Leefloon/ Reveny d'Intégration | <ul style="list-style-type: none"> zajamčena minimalna naknada Top-up payment social assistance recipients | <ul style="list-style-type: none"> Pomoc społeczna | <ul style="list-style-type: none"> Ingreso Mínimo Vital | <ul style="list-style-type: none"> Ekonomiskt bistånd | <ul style="list-style-type: none"> Universal Credit |
| Unemployment benefits | <ul style="list-style-type: none"> Werkloosheidsuitkering/ allocation de chômage | <ul style="list-style-type: none"> novčana naknada za vrijeme nezaposlenosti Top-up payment unemployment benefit recipients | <ul style="list-style-type: none"> zasiłek dla bezrobotnych | <ul style="list-style-type: none"> Prestación por desempleo contributiva | <ul style="list-style-type: none"> Arbetslöshetsförsäkring | <ul style="list-style-type: none"> Contributory jobseeker's Allowance |



| | | | | | | |
|--------------------------------|--|---|--|---|---|---|
| Pension | <ul style="list-style-type: none"> Rustpensioen/ pension de retraite | <ul style="list-style-type: none"> starosna mirovina | <ul style="list-style-type: none"> świadczenie emerytalne | <ul style="list-style-type: none"> Pensión contributiva por jubilación total o por jubilación parcial | <ul style="list-style-type: none"> Ålderspensionen | <ul style="list-style-type: none"> State retirement pensions |
| Taxes | <ul style="list-style-type: none"> Inkomstenbelasting/ Impôt sur les revenus Belastingvoordeel voor kinderen (alleenstaande ouders)/ avantage fiscal pour les enfants (des parents isolés) | <ul style="list-style-type: none"> Porez na dohodak Expansion personal allowance for children | <ul style="list-style-type: none"> podatek dochodowy od osób fizycznych Child tax credit | <ul style="list-style-type: none"> Impuesto sobre la Renta de las Personas Físicas Mínimo por descendientes | <ul style="list-style-type: none"> Inkomstskatt | <ul style="list-style-type: none"> Personal income tax Child tax credit |
| Social insurance contributions | <ul style="list-style-type: none"> Sociale zekerheidsbijdrage/ Cotisations de sécurité sociale | <ul style="list-style-type: none"> doprinosi za socijalno osiguranje | <ul style="list-style-type: none"> składki na ubezpieczenia społeczne | <ul style="list-style-type: none"> Cotizaciones a la Seguridad Social | <ul style="list-style-type: none"> Socialförsäkringsavgifter | <ul style="list-style-type: none"> Employee National Insurance contributions |



What is EUROMOD and how to interpret its results?

What is EUROMOD?

EUROMOD is a tool that can be used to analyse the tax-benefit systems of all countries in the European Union. It does so by combining two types of information:

- Information on the background of individuals and households. This includes, among other things, information on the household composition (e.g. the number of adults, number of dependent children, etc.) and information on each person in the household about their age, gender, economic activity (employed, unemployed, inactive, etc.), and wages.
- Information about the rules and regulations of each country's tax- and benefit system. These rules and regulations are available for each specific policy separately, including (but not limited to) income tax, social security contributions, pensions, child benefits, housing benefits, unemployment benefits and social assistance.

By combining these two elements of information, EUROMOD can estimate for each person and each household which policies they might be eligible for, how much taxes they would need to pay, how much benefits they might receive (from each benefit policy separately), and consequently what their household income would be.

We use EUROMOD to answer the question how (people in) various households are doing financially. We do this in three steps, schematically illustrated in Figure 1.

1. In Step 1, shown on the left-hand side of Figure 1, we define a set of households. The households differ based on the family relations among the household members. Family relations that extend across households are not covered by EUROMOD (including alimonies and child support), but the family relations (or absence thereof) among household members are. We define the number of adults in the household (and their relations), and in households where children are present, their ages are 2 and 7. For the adults, we defined whether they are employed, unemployed or inactive, and among the employed, we defined what wage they earn as a percentage of the national average. In the EUROMOD tool, these households are defined in what is called the *hypothetical household tool*, and as the name suggests these are hypothetical households – stereotypical in a sense, as depicted in the Figure. A strength of EUROMOD is that we can very precisely define households and then make changes to these households to analyse how that affects their income situation.

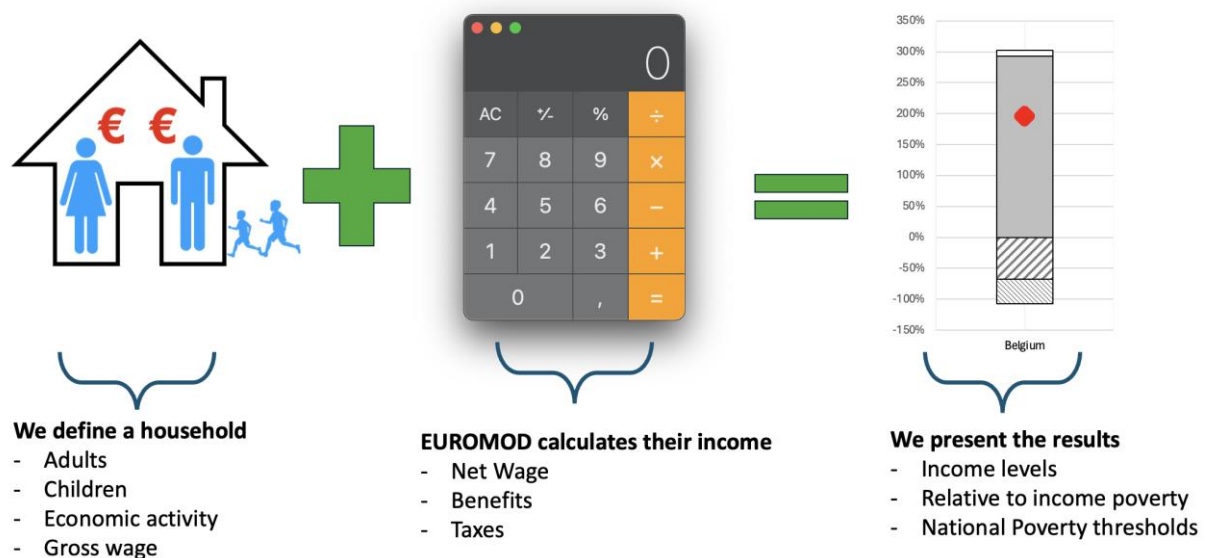


Because we can change one aspect at a time, we can very precisely analyse how the welfare state functions for various household types. The following household types are defined:

- Single adult
 - Couple without children
 - Single parent (working-age) with adult child
 - Single parent (retired) with adult child
 - Single parent with dependent children
 - Couple with dependent children
 - Couple with adult child
 - Single parent living with grandparents
 - Couples with children and living with grandparents
2. In Step 2, shown in the middle of Figure 1, we provide the information on the households and persons that were defined in Step 1 to the EUROMOD tool. EUROMOD is a calculation machine: First, it will check for each household and each person in that household whether they are eligible for a number of policies (e.g. child or household benefits) based on the background information provided. If a person or household is eligible, it will then calculate how much they will receive. It will also check the extent to which people need to pay taxes by looking at their total income and at what the different income sources are (for instance, it is taken into account whether benefits in a country are taxable income or not – and to what extent the tax unit is eligible for tax deductions). Finally, it will calculate the total disposable income of each person, and of each household.
 3. In Step 3, shown on the right-hand side of Figure 1, we present the results that come out of EUROMOD. All results are based on annual income – similar to most tax systems. The results comprise an estimate of the total household income of each household type and the different types of income that comprise the total – as well as the taxes that are deducted from the household income.

In the next section, we provide a more detailed description of how to interpret the results.

Figure 1 Schematic Representation of EUROMOD Analysis



How to interpret EUROMOD results?

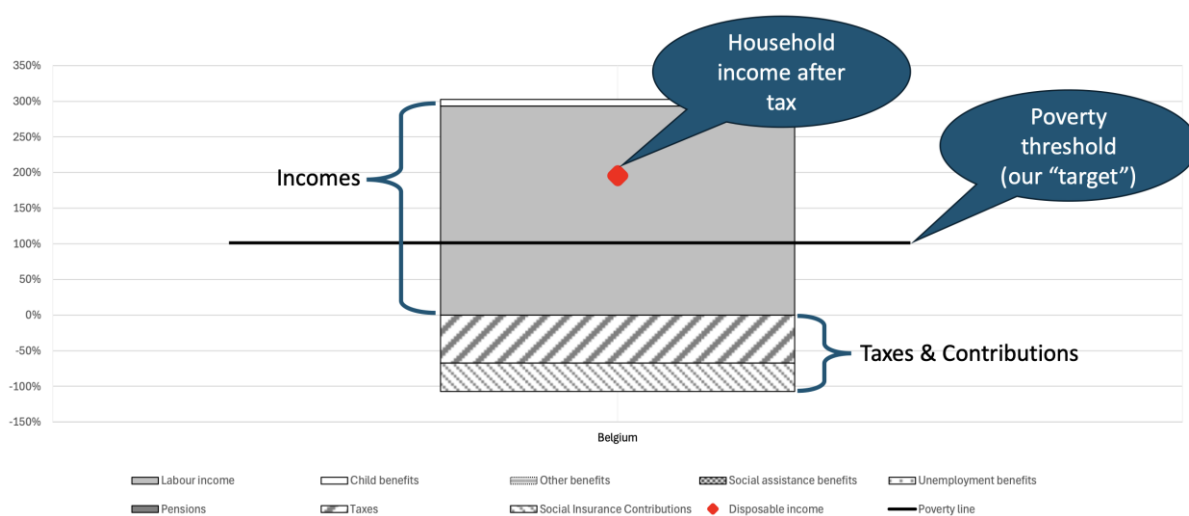
Figure 2 provides an example of how we present the results – in this case, only for a dual-earner couple (with two dependent children) household type, and only for Belgium. The Figure shows a vertical bar, that is stacked of several components – indicated by different shadings. Each component represents a different type of income or tax. Specifically, we distinguish between the following income components (also shown in the legend at the bottom of the Figure):

- Labour income
- Child benefits
- Unemployment benefits
- Social assistance benefits
- Other benefits
- Pensions
- Taxes (on income)
- Social insurance contributions

When all applicable benefits are added to the labour income, and all applicable taxes and social security contributions are subtracted (the household income after tax), we are left with what the household can spend freely: this is referred to as the disposable (household) income. In the figures, the disposable (household) income is represented by the **red diamond**.

The horizontal **black line**, finally, represents the national at-risk-of-poverty (AROP) line (the line below which people are considered to be at-risk-of-poverty). We present all results relative to the poverty line. That way, we (a.) get an indication of how well households are doing financially in terms of poverty, and (b.) the amounts become comparable across countries. The poverty line is defined as 60% of the national median of equivalised household income, which is the same as the main definition of income poverty used by the EU. It is adjusted to the composition of the household, so that for each household the relevant poverty line is used. The poverty line can be thought of as our “target”: the level of income each household needs to participate in society, albeit at low levels.

Figure 2 Example of EUROMOD Results: How well-off is a dual-earner couple – at average wage – with 2 children, in Belgium?



Now, how to interpret the results presented in Figure 2? In this case, as described in the caption, we are looking at a household that is formed by a dual-earner couple with 2 dependent children (age 2 and 7). The adults both earn an average wage, and live in Belgium. The easiest way to interpret these results is through three steps:

1. First, compare the **disposable income** (red diamond) to the **poverty line** (the black horizontal line). In this case, the household as described above has an income that is well above the poverty line – in fact, this dual-earner couple has a disposable income that is nearly twice as high as the poverty line.
2. Second, where is the income of this household coming from: how much earnings do they have, and what benefits do they receive? In this case, the labour income (grey bar) of both partners combined is just under 3 times (300%) of the poverty line. They further receive child benefits (white bar), but this amount is small compared to their labour income. Taken together, in this case, the labour income and child benefits are all the incomes of this household – as indicated by the accolade.
3. Third, it is relevant to also at the taxes and social security contributions the household has to pay – as shown by the negative components (because they are subtracted from their total income). This particular household pays a total almost equivalent to the poverty threshold in taxes and social security contributions: the total of taxes and social security contributions (indicated by the accolade) reaches just below -100%.

Finally, the total income (the top of the bar) is higher than their disposable income (red diamond). This is simply because the total income is gross of taxes. In other words, taxes need to be subtracted first to determine the disposable income of the household. This is the case for most of the results presented here.



How well are diverse households protected against income poverty through taxes and benefits?

In this section, we present the main evidence focused on answering the four research questions. The amount of statistical results produced using EUROMOD is vast, and therefore we initially present only a selection of the evidence. This selection was made strategically to ensure a concise presentation of the evidence, and to be representative of the results as a whole. To repeat, the research questions are:

1. How (financially) well-off are dual-earner couples with children and single parents in different European countries?
2. How (financially) well-off are different household types when they earn a low wage?
3. How well are unemployed couples supported (financially) by different out-of-work benefits?
4. How (financially) well-off are unemployed single parents when living with grandparents or taking up part-time employment?

The answer to the first question is limited here to only two household types: *couples with children and single parents*. This makes it possible to present the results, in one figure, for all six countries: Belgium, Croatia, Poland, Spain, Sweden, and the United Kingdom.

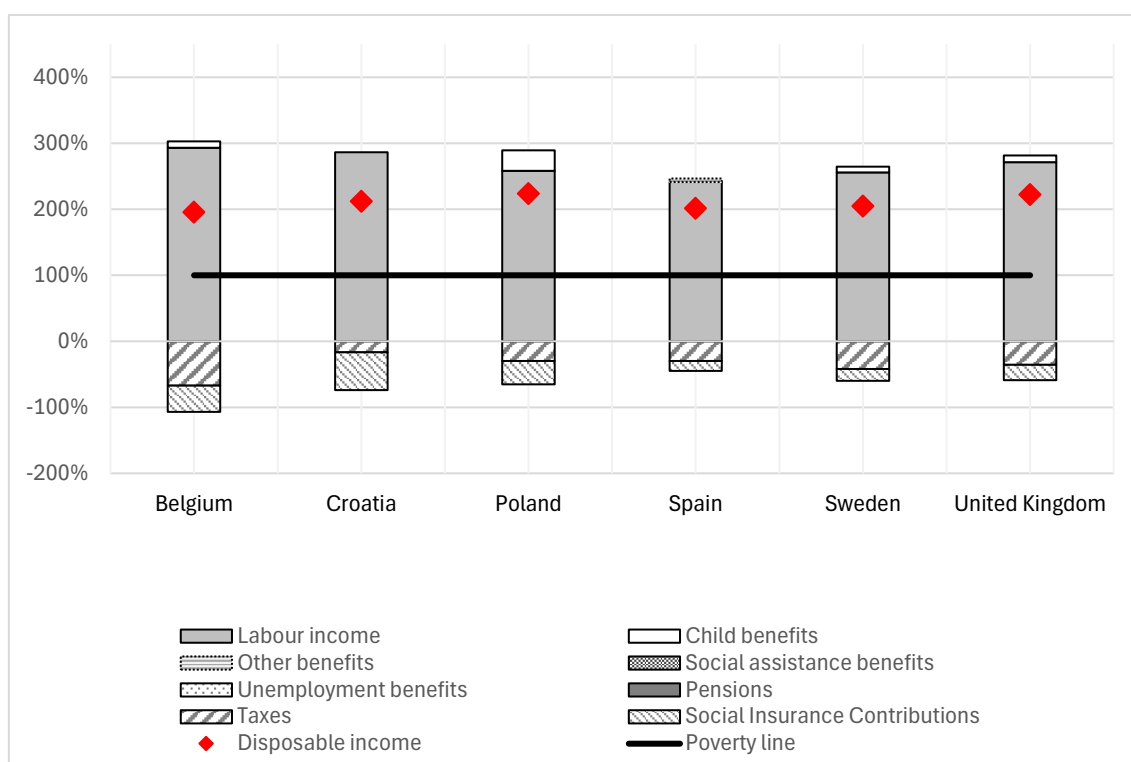
The answers to questions two, three and four are given for only *one country* at the time. The reason is that this provides the space to look at different household types, and different scenarios. Nonetheless, all countries are represented at least once in this chapter, and the answers to the research questions are based on the analysis of all countries (as indicated at the end of each section). The evidence for all other countries is made available in the supplemental material at the end of this report.



How well-off are dual-earner couples with children and single parents in different European countries?

To answer the first research question (“How (financially) well-off are dual-earner couples with children and single parents in different European countries?”), we present three scenarios. First, we present the financial situation of dual-earner couples in which both partners work full-time at the national average wage (Figure 3). This is followed by an analysis of the financial situation of an (otherwise identical) single parent who works full-time at average wage (Figure 4), and at a low wage rate (Figure 5). In other words, the people in these scenarios are all working full-time, at average wage levels.

Figure 3 How well-off are dual-earner couples – at average wage – with 2 dependent children?



In all six countries in focus here, dual-earner couples working full-time at the national average wage, are financially well above the at-risk-of-poverty threshold (Figure 3). Their labour income (solid grey bars) ranges from about 2,5 times the poverty threshold (Spain) to nearly three times the poverty threshold in Belgium and Croatia. In all countries the households pay social insurance contributions and income taxes (the amounts paid sometimes even exceed what is necessary in income to avoid poverty, such as in Belgium). In most countries the couples receive child benefits, but this is a relatively small share of the household income. The amount is highest in Poland, whereas these dual-earner couples do not receive child benefits in Croatia and Spain, since they do not provide a universal benefit for children. The resulting disposable household income (red diamonds) is (nearly) twice that what is necessary exceed the poverty threshold in each of these six countries.

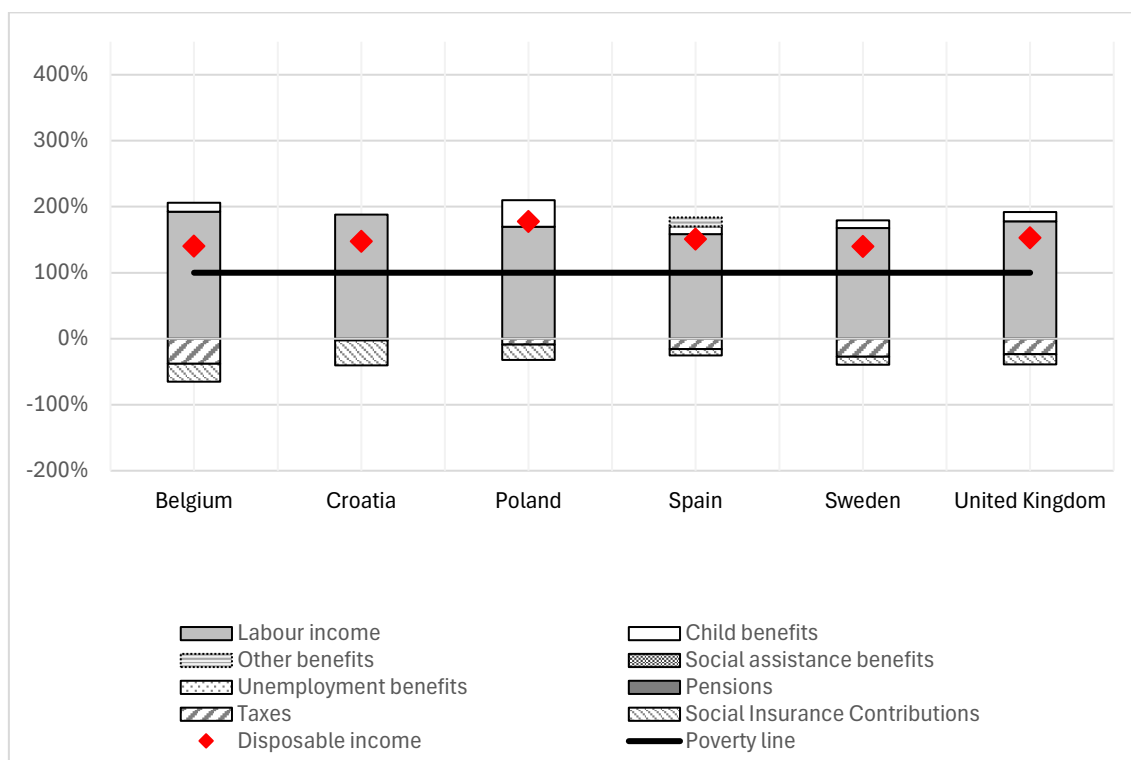
At the average wage level, single parents are also above the poverty threshold in all six countries (Figure 4), but with a smaller margin than dual-earner couples. Child benefits are now provided in Spain, and slightly higher in, for instance, Belgium and the United Kingdom. It should be noted that EUROMOD over-estimates the child benefits to (most) single parents in Sweden, because it



does not account for the fact that in most cases the child benefits are shared between the two parents even if they are no longer together (Daly et al., 2023; Nieuwenhuis et al., 2022).

When examining a scenario where single parents are working full-time but at a low wage (two-thirds of average wage), they are considerably closer – or at – the poverty threshold (Figure 5). Comparatively, these working single parents are worse off in Belgium and Sweden, where their income is equivalent to the poverty threshold, and best off in Poland and the United Kingdom – in particular through child benefits and other income top-ups. In this scenario, child benefits in Croatia are activated since they are strongly low-income targeted.

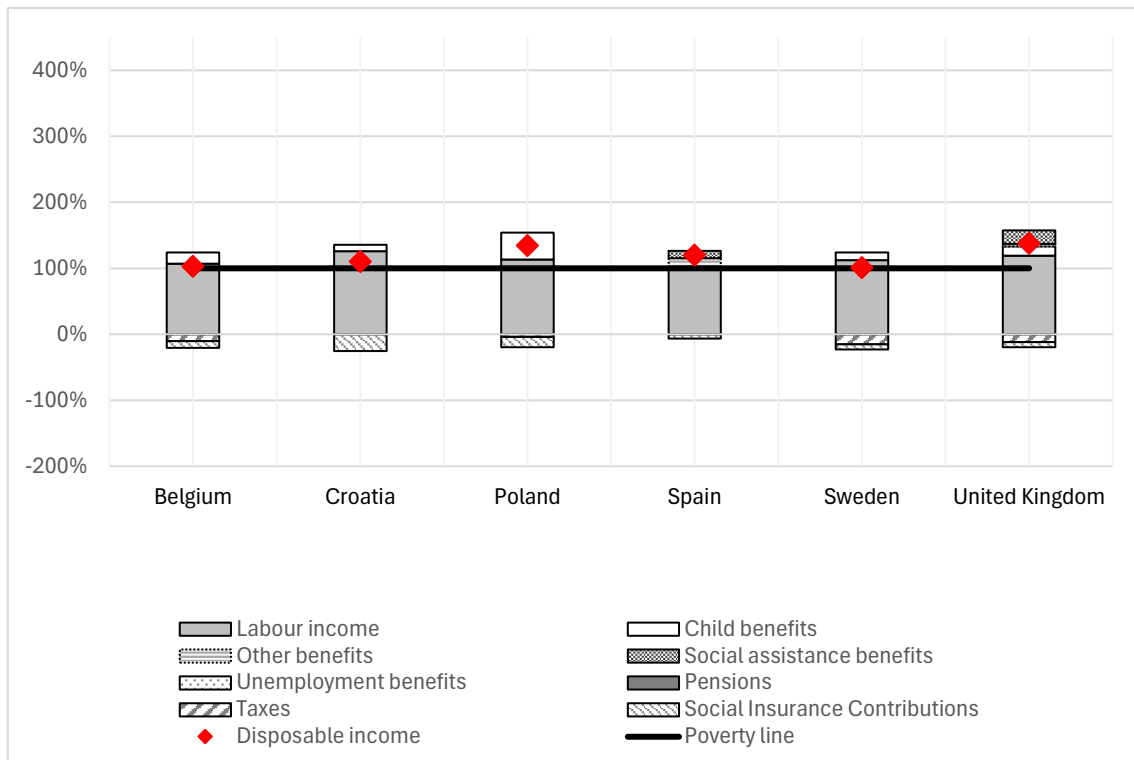
Figure 4 How well-off are working single parents – at average wage – with 2 dependent children?



In sum, to answer the first research question, full-time workers were not found to be at-risk-of-poverty in none of the compared countries and in none of the scenarios. However, single parents (for whom working full-time is often already a challenge, particularly without the adequate policy support (Harvey & Mukhopadhyay, 2007)) are very close to the poverty threshold when working at two-thirds of average wage. In other words, despite working full-time, they are dependent on child- and other benefits to avoid poverty. The relationship between working full-time at a low wage and different family- and household types is explored the next section.



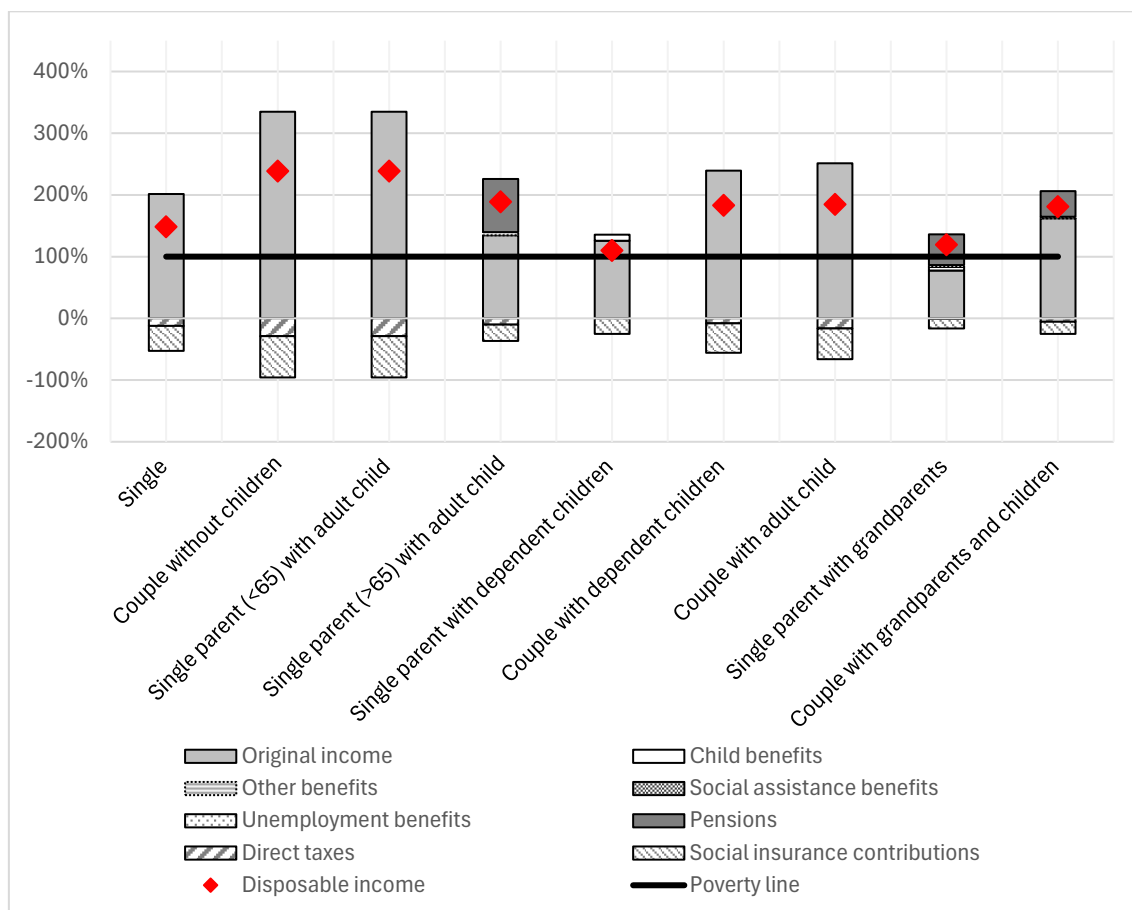
Figure 5 How well-off are working – low wage – single parents with 2 dependent children?



How well-off are different household types when they earn a low wage?

In this section, we present the income situation of a range of different household types (categorized by their family relations). Each of these family-in-household types works full-time (either as a single worker or as a dual-earner couple) at what is considered a low-wage rate (two-thirds of average wage). Here, we present the results for Croatia and Sweden.

Figure 6 How well-off are different household types at low wage – in Croatia?

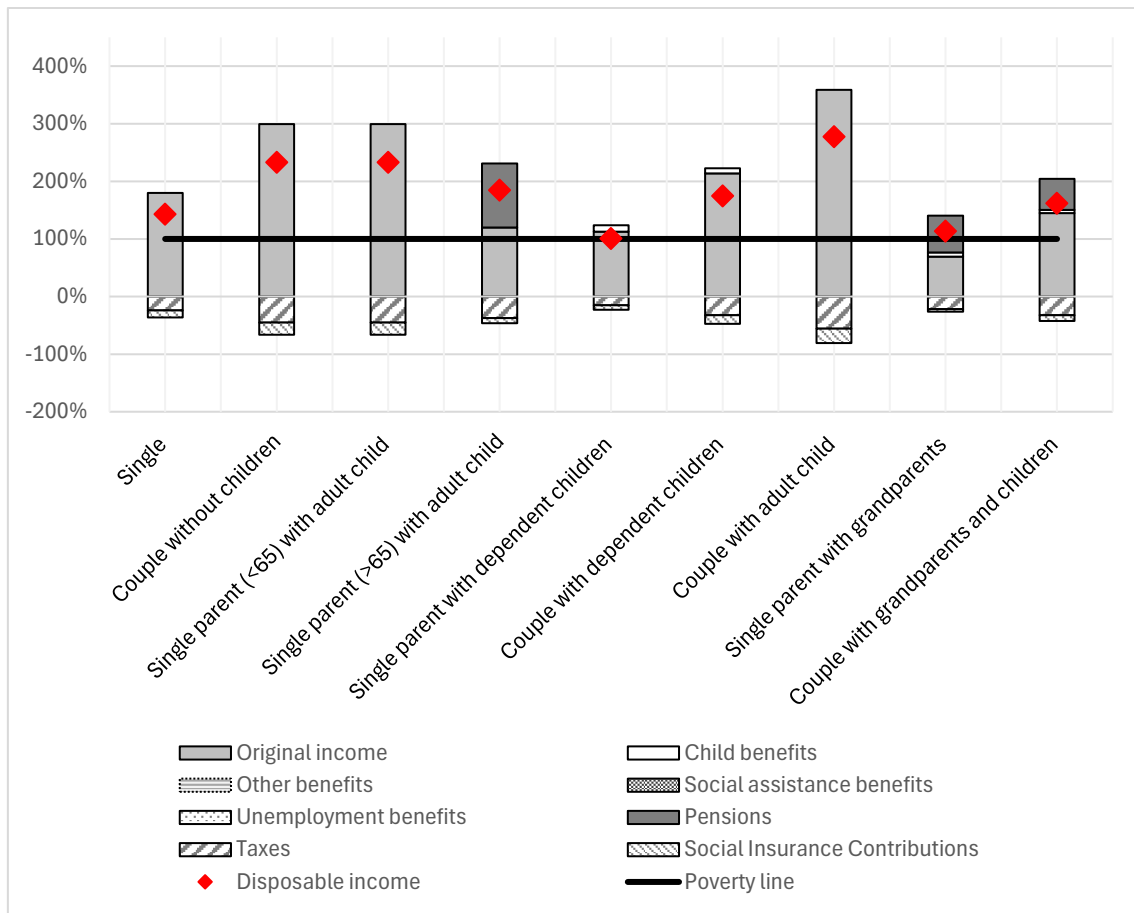


In Croatia (Figure 6), single-person households and single parents with dependent children are particularly close to the poverty threshold. Most households receive no benefits, with the exception of single-parent households who receive a small amount of child benefits, and households in which retired persons live.

The comparison between different household types shows a quite similar picture in Sweden (Figure 7). Single parents with children are at the poverty threshold, despite working full-time at two-thirds of the average wage. This has likely to do with the fact that Sweden is a dual-earner society where many couples both work full-time, which drives up the standards of living as represented by the relative at-risk-of-poverty threshold. This high at-risk-of-poverty threshold is difficult to meet for single earners – and particularly for single parents who also have to support their dependent children (Nieuwenhuis, 2022).



Figure 7 How well-off are different household types at low wage – in Sweden?



In relation to the second research question, how (financially) well-off different household types are when they earn a low wage, the evidence suggests that the differences between family- and household types tend to be larger than the differences between different countries. This general pattern also holds for the countries not shown in this chapter (see the supplemental material): single-earner households are closer to the poverty thresholds, as are households with dependent children – this accumulates in single-parent households usually being close to the at-risk-of-poverty thresholds. Full-time workers usually receive few welfare-state benefits, except for (often universal) child benefits.

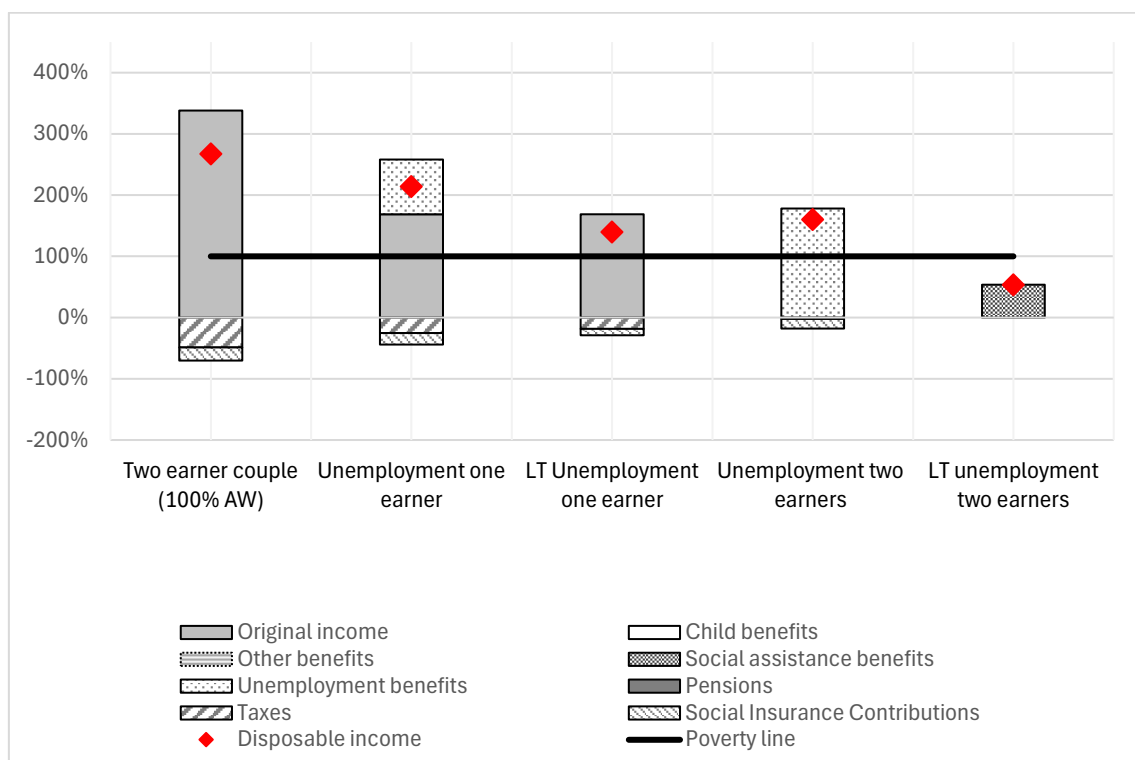


How well are unemployed couples supported by different out-of-work benefits?

Up to this point, all scenarios pertained to full-time workers, either at average or low (two-thirds of average) wage. Here we introduce “shocks” in terms of unemployment to answer the question how well unemployed couples are supported by different out-of-work benefits. We examine previously two-earner couples here (full-time at average wage), because we observed before that they were financially best off – irrespective of having children.

Usually, a distinction is made between social security-based unemployment benefits that replace a percentage of previous wage (often up to a ceiling, and only after workers qualify by having paid either a membership fee or social security contributions for a sufficiently long period), and social assistance as a minimum guaranteed income (typically at a fixed rate) for those who do not qualify for unemployment benefits. Here we assume that workers become unemployed and initially qualify for unemployment benefits. However, after a period of time (this differs by country) they no longer qualify for unemployment benefits and have to resort to social assistance benefits. This is represented in the scenarios as long-term unemployment.

Figure 8 How well are unemployed couples supported by different out-of-work benefits – in Spain?



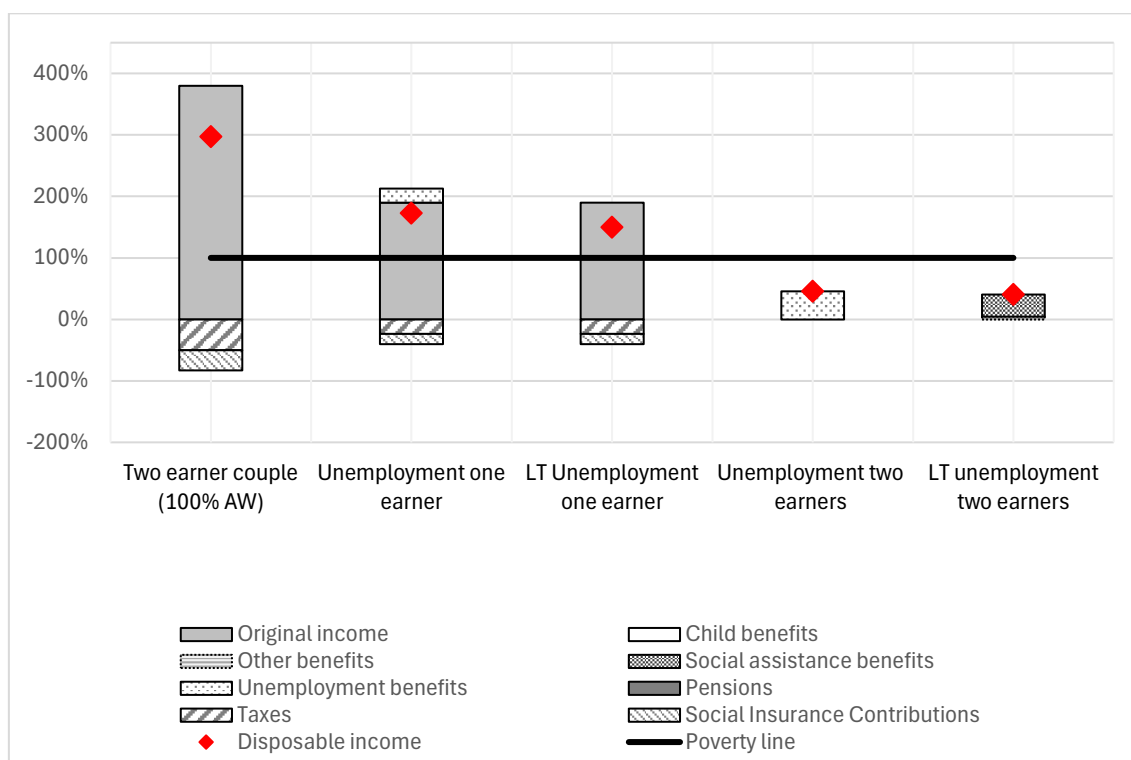
In Spain (Figure 8), the main finding is that with the exception of households in long-term unemployment, the welfare state provides a significant degree of unemployment protection to couples. As was shown before, in the baseline (both in employment) scenario the dual-earner couple has a disposable income substantially above the poverty threshold. If one of the partners becomes unemployed (second column), their income is to a substantial degree



replaced by the unemployment benefits. While their household income is lower, it is still well above the poverty threshold. Even when the unemployed person no longer qualifies for unemployment benefits the household is above the poverty threshold (third column). Notably, this is the case although they do not qualify for social assistance benefits, since those are means-tested and this group would be above the threshold. If both partners become (short-time) unemployed (fourth column), their labour income is sufficiently replaced to reach above the poverty line. However, if both are long-term unemployed (fifth column) – and thus have to resort to social assistance, they are well below the poverty threshold.

In the United Kingdom (Figure 9), the unemployment benefits are substantially lower, and the difference in the income situation of short-term or long-term unemployed is substantially smaller than in Spain. In stark contrast to the same scenario in Spain, if both partners become unemployed the couple is at risk of poverty even when both qualify for unemployment benefits (again, see the fourth column).

Figure 9 How well are unemployed couples supported by different out-of-work benefits – in the United Kingdom?



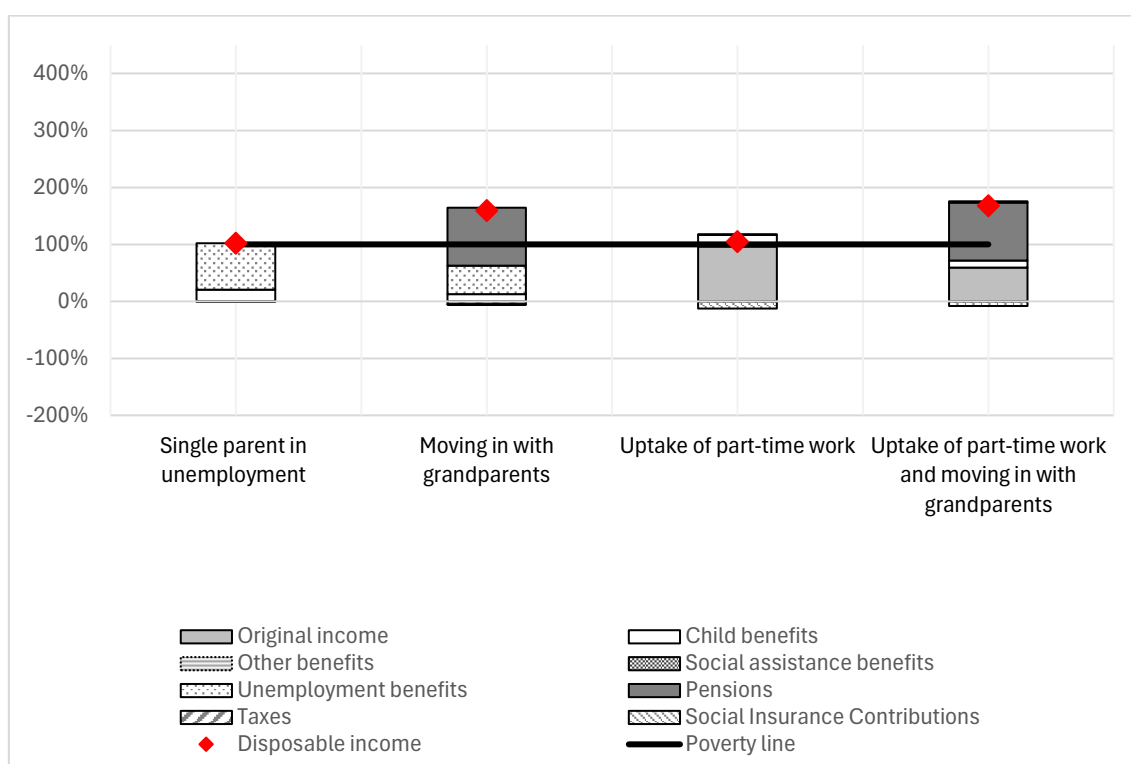
The answer to the third research question is that short-term unemployment is compensated for reasonably well, at least when one partner of a dual-earner couple becomes unemployed and if they are eligible for unemployment benefits. Long-term unemployment of both partners, or even shortly after becoming unemployment in case they are not eligible for insurance-based unemployment benefits, results in an income below poverty. This general finding also applies to the countries shown only in the supplemental material. However, like in the United Kingdom, even short-term unemployment (that is, still qualifying for income replacement from unemployment benefits) of both partners results in a disposable household income below the poverty threshold in Poland, or just above it in Croatia.



How well-off are unemployed single parents when living with grandparents or taking up part-time employment?

Finally, we examine the situation of unemployed single parents in various scenarios: receiving social security unemployment benefits, moving in with grandparents, taking up part-time work, or both. The model assumes that an unemployed single parent previously worked full-time at average wage, and is (still) eligible for unemployment benefits. The pension benefits are at the national average level. The scenario of getting back into employment focuses on part-time employment to represent a realistic situation in which returning to full-time employment often is infeasible for a single parent (nevertheless, being in full-time employment is shown in Figure 4).

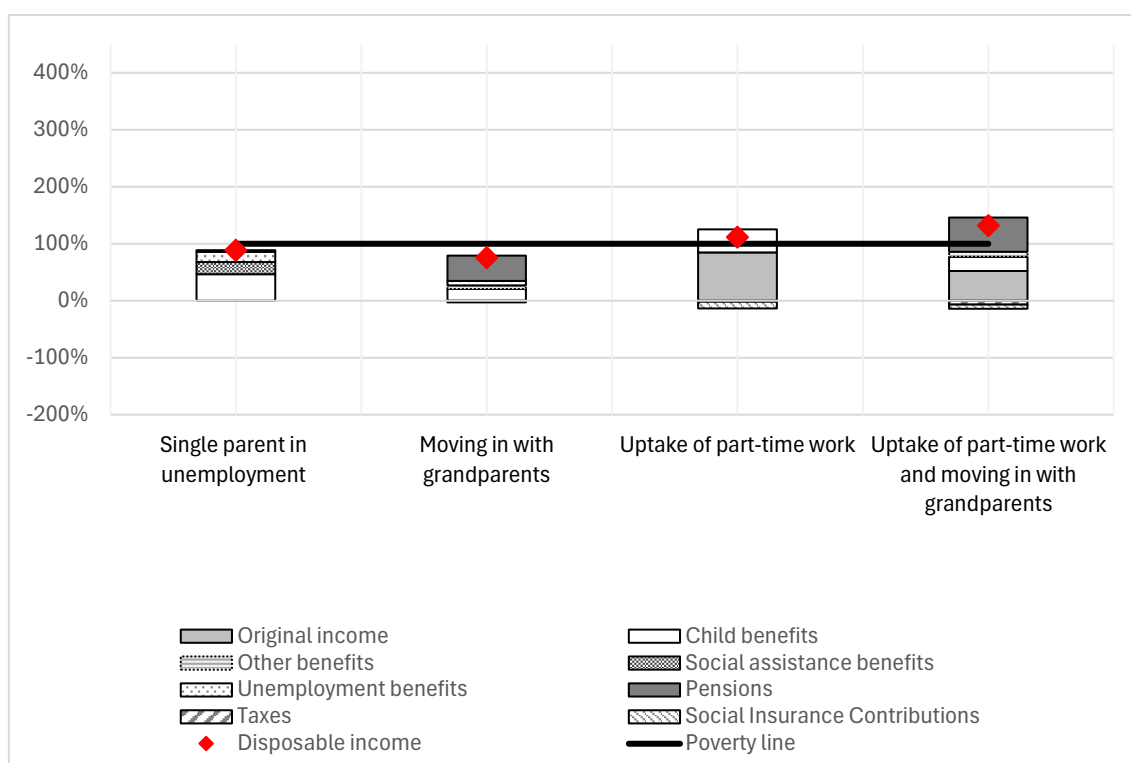
Figure 10 How well-off are unemployed single parents in various scenarios in Belgium?



In Belgium (Figure 10), an unemployed single parent has a disposable income at the at-risk-of-poverty level, and their income is a combination of unemployment benefits and child benefits (first column). If they were to live with grandparents (of their child(ren)), and if the grandparents have an average pension, their income is substantially higher (second column). Only returning to employment part-time (column three) instead of cohabiting with grandparents, only marginally improves their income situation in relation to the baseline. In part this is because their labour income is only slightly higher than the unemployment benefits they now no longer receive, but also because they now need to pay social insurance contributions. Both taking up part-time work and moving in with grandparents is, in this scenario, the strategy that is most efficient in buffering against poverty (column four).



Figure 11 How well-off are unemployed single parents in various scenarios in Poland?



In Poland (Figure 11), the situation is different. Here, single unemployed single parents are estimated to be in poverty. They receive more child benefits compared to in Belgium, and a social assistance top-up, but only very low unemployment benefits. Moving in with grandparents actually decreases their financial situation, because the social assistance top-up, the child benefit, and the unemployment benefits are all lower in that scenario. This results in a reduction in household income that is not compensated by the pension income of the grandparents. The scenario of taking up part-time employment does improve the income situation of single parents in Poland, but only slightly above the poverty line. As in Belgium, combining part-time work and living with grandparents represents the largest increase in disposable household income – and in both countries the income sits above the poverty line.

To answer the fourth research question, it is important to point out that neither part-time employment, nor living with grandparents, are guaranteed ways in all countries to avoid poverty for (previously) unemployed single parents. Part-time employed single parents are still in (or very close to) poverty in Belgium, Croatia, Spain, Sweden, and the United Kingdom. Often, these part-time working single parents are paying income taxes and social security benefits, despite being in poverty. That taxation systems not only fund redistribution, but can also result in people being taxed into poverty, is attracting more attention recently (Gornick et al., 2024). Single parents living with grandparents are still in poverty in Croatia and Poland. Even though (the sharing of) pension income can reduce poverty in households of multigenerational households (Verbist et al., 2020), we found here that this poverty-reduction capacity is lowest in countries where multigenerational households are less common (Croatia and Poland), whereas it is more effective in countries where such households are least common (i.e. Sweden) (Bartova et al., 2023).



Conclusion

Automatic stabilisers are usually considered as macro-economic instruments, and studied less from the micro-perspective of family diversity. From a macro-perspective automatic stabilisers aim to protect both the supply- and demand- sides of the economy in times of crisis. In other words, by maintaining households' income (and therefore purchasing power) in times of for instance an economic crisis with high rates of unemployment, automatic stabilisers ensure not only that the unemployed have sufficient income to maintain an adequate standard of living but also that the demand for goods and services remains high. By doing so, it is argued that the economy will recover more swiftly – in turn lowering unemployment which reduces the need for the unemployment benefits.

As was argued in the introduction, however, the degree to which unemployment benefits and other aspects of the redistributive tax-benefit system function as an effective automatic stabiliser, is generally only evaluated at the aggregate level. In this report, we focused on how automatic stabilisers produce divergent protection against relative poverty across different family and household types as well as over varying welfare state contexts. The existence of sociodemographic and institutional heterogeneity in who has access to and benefits most from the tax-benefit system can not only impair its redistributive capacity, produce less efficient incentive structures for taking up employment, but also, ultimately, risk pushing individuals and families into social exclusion.

Against this background, we focused specifically on differences in how well the income position of diverse households and families are protected by the tax-benefit systems of Belgium, Croatia, Poland, Spain, Sweden, and the United Kingdom. We raised the overarching question *“How well are households that differ in their family relations protected against income poverty through taxes and benefits?”* and subdivided this in four research questions:

1. How (financially) well-off are dual-earner couples with children and single parents in different European countries?
2. How (financially) well-off are different household types when they earn a low wage?
3. How well are unemployed couples supported (financially) by different out-of-work benefits?
4. How (financially) well-off are unemployed single parents when living with grandparents or taking up part-time employment?

It should be acknowledged that these research questions do not aim to give a full answer to the question whether the tax-benefit systems of the aforementioned six countries are effective automatic stabilisers for diverse household- and family- types. That would require an examination of households' consumption, as well as a macro-level analyses of how macro-level economic recovery benefits diverse families and households.



Nevertheless, as automatic stabilisers are relied on as important economic instruments to respond (in part) to so-called mega-trends – including the new world of work, automation, and population ageing – it is pertinent to examine whether diverse families and households are equally well-protected.

Regarding the first research question, it was found that in none of the countries in focus and in none of the scenarios were full-time workers found to be at-risk-of-poverty. However, single parents (for whom working full-time is often already a challenge), are very close to the poverty threshold when working at two-thirds of the average wage in most of the countries studied here. In other words, despite working full-time at a wage level that is common to this group, they are dependent on child- and other benefits to avoid poverty.

The evidence relevant to the second research question suggests that the differences between family- and household types tend to be larger than the differences between different countries: single-earner households are closer to the poverty thresholds, as are households with dependent children – this accumulates in single-parent households usually being close to the at-risk-of-poverty thresholds.

The answer to the third research question was that short-term unemployment is compensated for reasonably well, at least when one partner of a dual-earner couple becomes unemployed and if they are eligible for unemployment benefits. Long-term unemployment of both partners results in an income below poverty. However, even short-term unemployment of both partners results in a disposable household income below the poverty threshold in Poland and the United Kingdom, or just above it in Croatia.

Finally, related to the fourth research question, it is important to point out that neither part-time employment, nor living with grandparents, are guaranteed ways in all countries to avoid poverty for (previously) unemployed single parents. These analyses highlighted two relevant findings. The first was that in some countries, income taxation was found to be related to part-time working single parents falling into poverty. The second was even though (the sharing of) pension income can reduce poverty in households of multigenerational households, we found that this poverty-reduction capacity is lowest in countries where multigenerational households are more common (Croatia and Poland), whereas it is more effective in countries where such households are least common (i.e. Sweden).

It should be noted that most of these scenarios were based on households (and families) that were relatively well-off – at least initially – in the sense that they were working full time at average or two-thirds of average wage. Furthermore, these analyses took on a social rights perspective, thus charting what the tax-benefit systems intend to provide. However, issues like non-take-up were not accounted for, and some benefits (such as alimony, child support, and housing benefits) are often not included in the EUROMOD simulations – or at least not adequately. In other words, for many families and households, reality is more precarious than the scenarios presented here. Moreover, in countries such as Croatia or Poland, the poverty threshold in itself might not represent what is minimally needed to sustain a decent life. In that sense, our results are an overestimation of how well-off households in different family constellations actually are.

From a resilience perspective, automatic stabilisers can serve an essential function in providing decent outcomes despite the divergent family and household experiences of adverse social and economic conditions. However, when with the relatively optimistic scenarios studied here, there are strong indications that the automatic stabilisers of tax-benefit systems will not be able to protect the incomes of all households and families equally in times of crisis. In particular



households with fewer earners (e.g. single adults and single parents) are at odds, and single parents particularly so. The implication is that even if automatic stabilisers achieve the desired goal of macro-economic recovery, these benefits are not shared equally.



Supplemental country-specific evidence

Belgium

Figure 12 Belgium – How well-off are different household types at low wage?

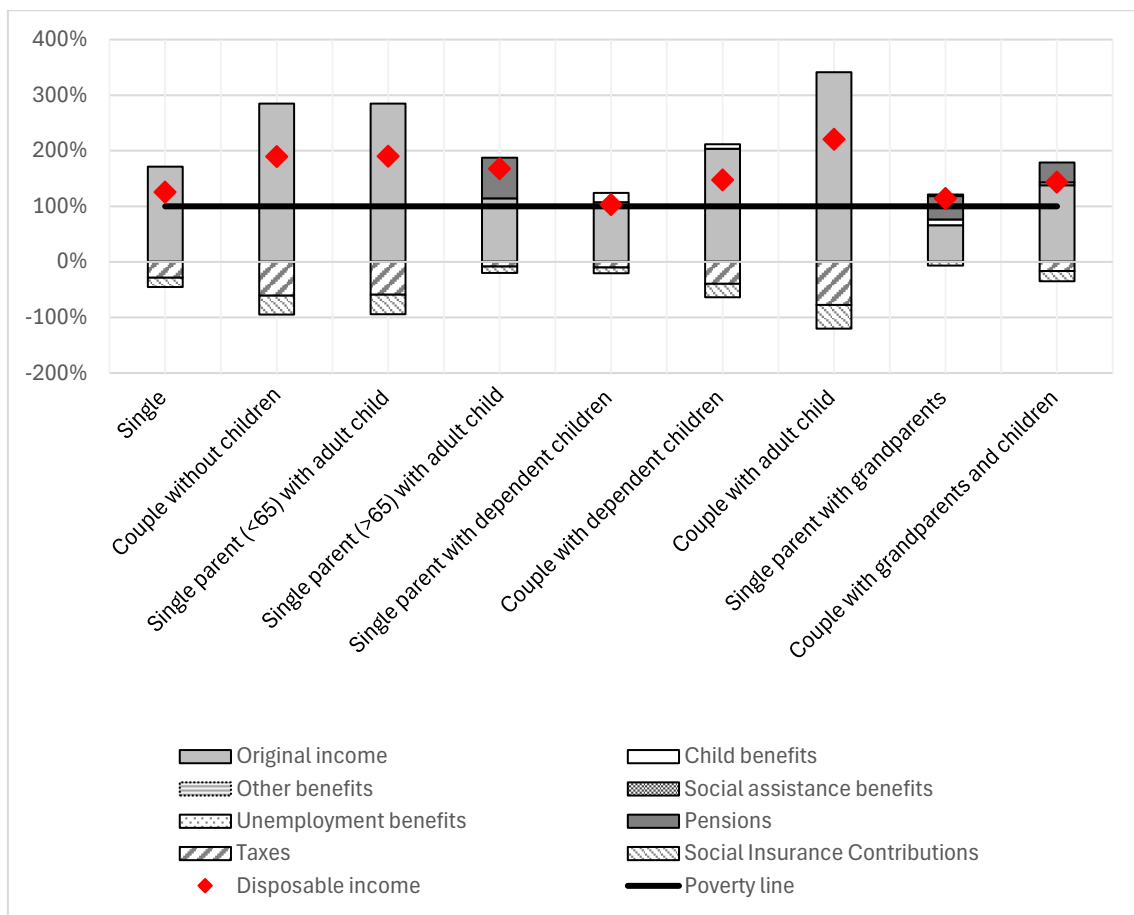


Figure 13 Belgium – How well are unemployed couples supported by out-of-work benefits?

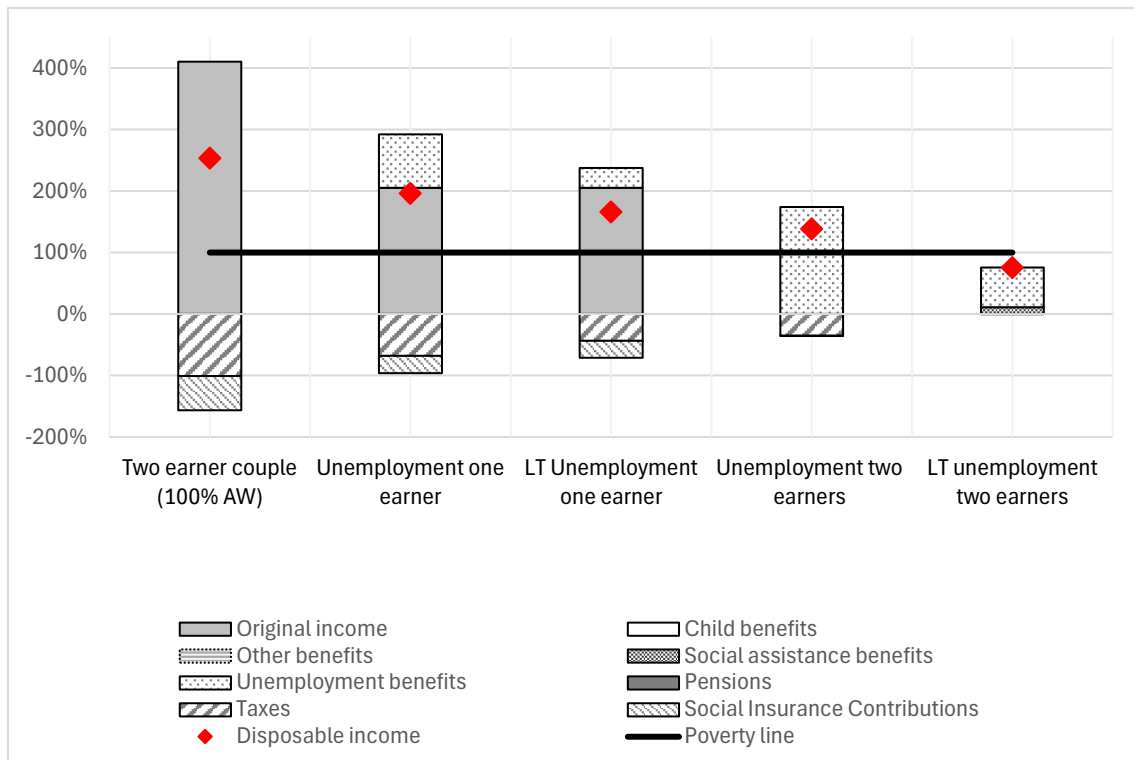
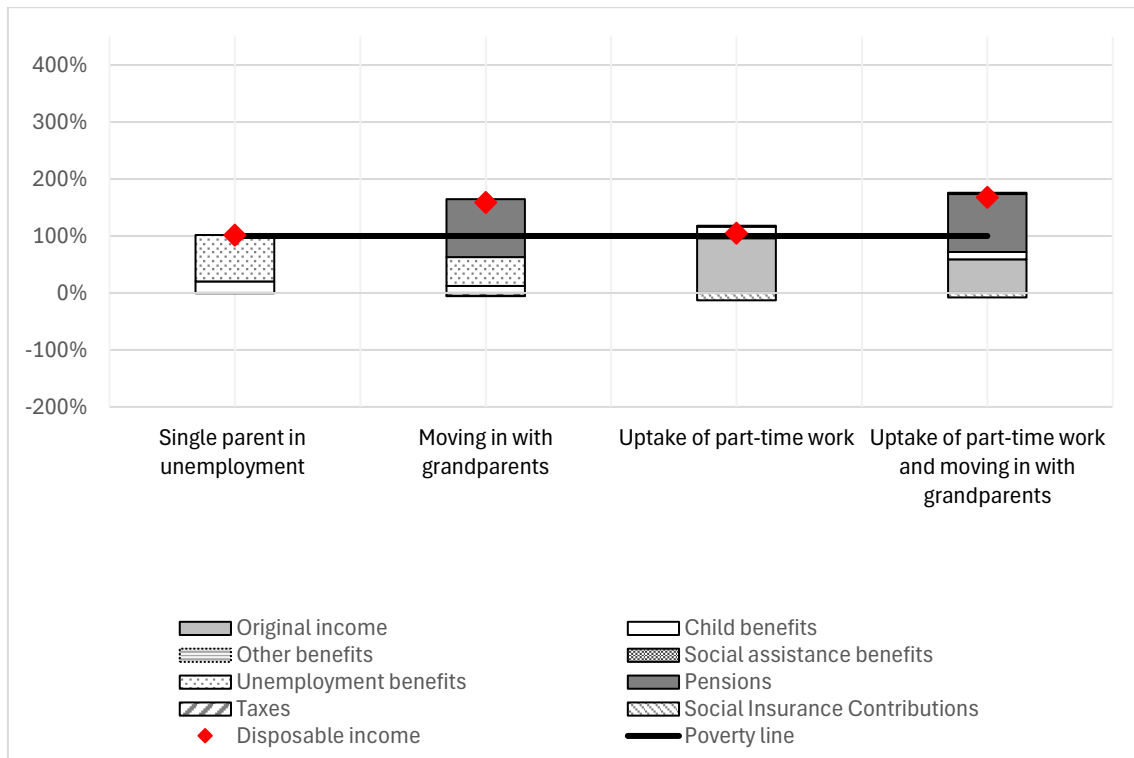


Figure 14 Belgium – How well-off are unemployed single parents in various scenarios?



Croatia

Figure 15 Croatia – How well-off are different household types at low wage?

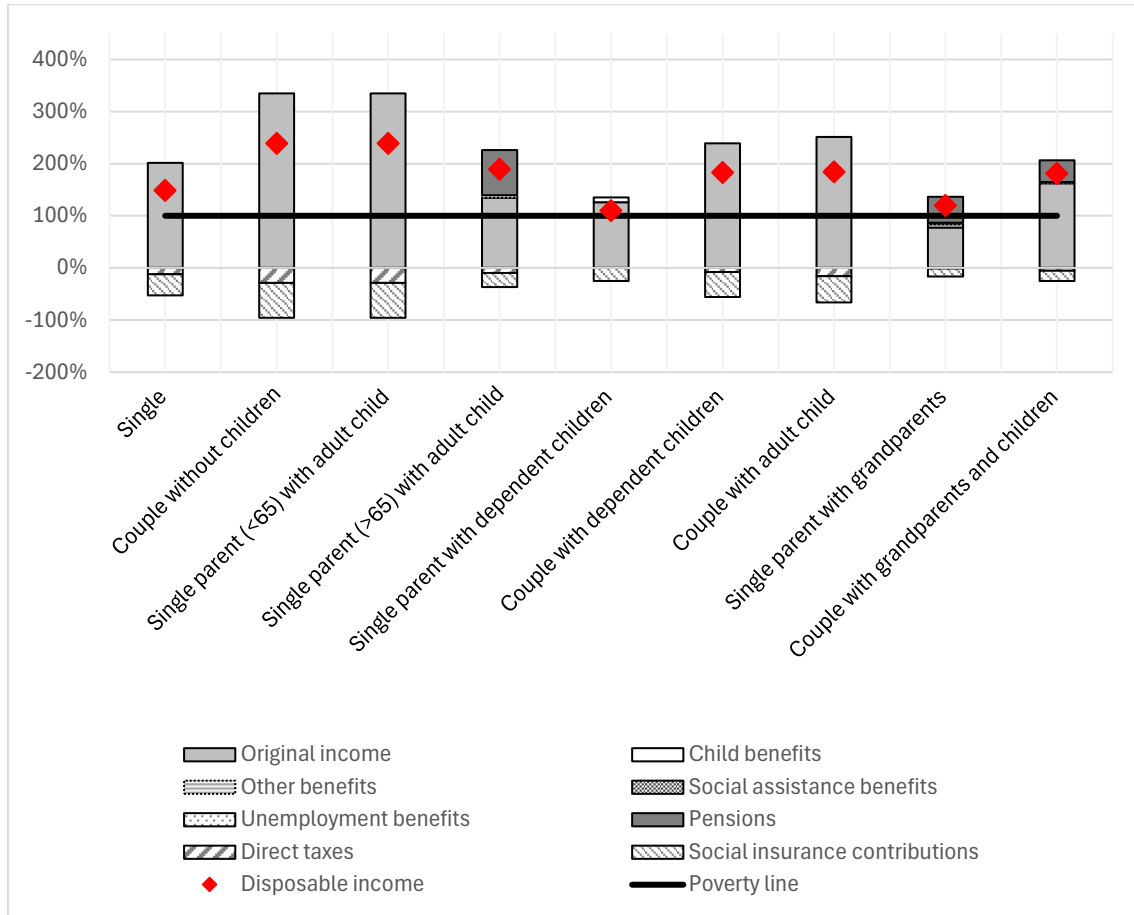


Figure 16 Croatia – How well are unemployed couples supported by out-of-work benefits?

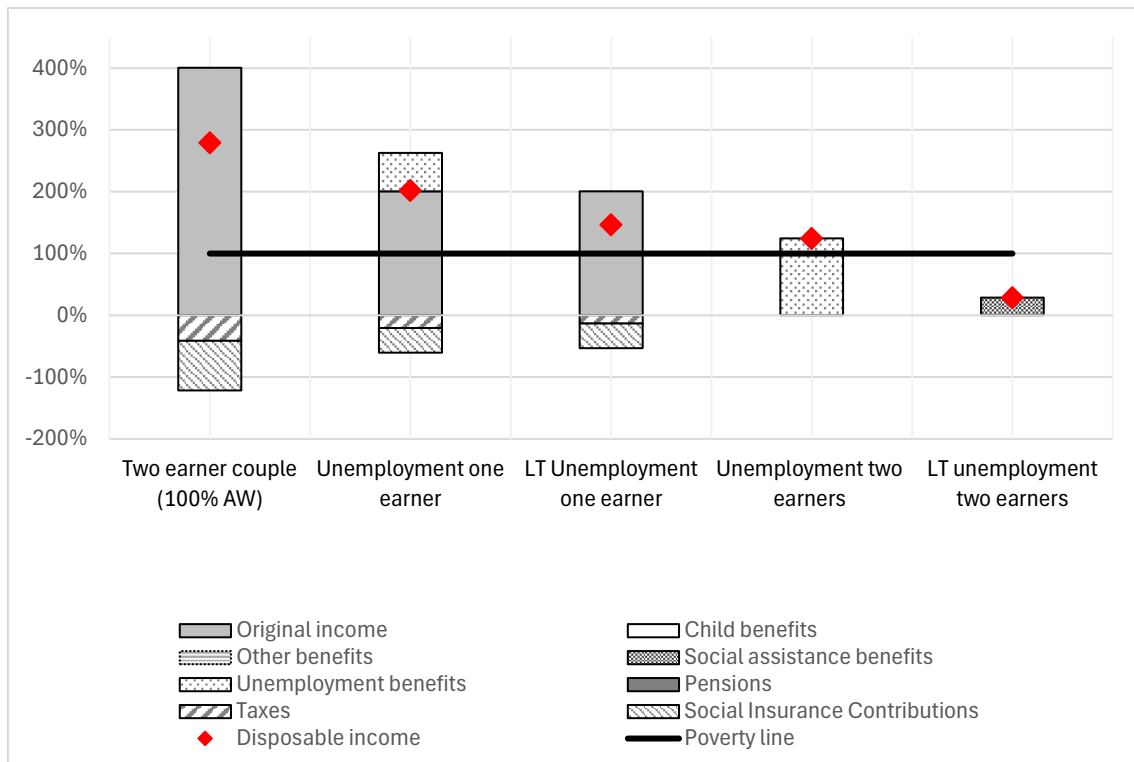
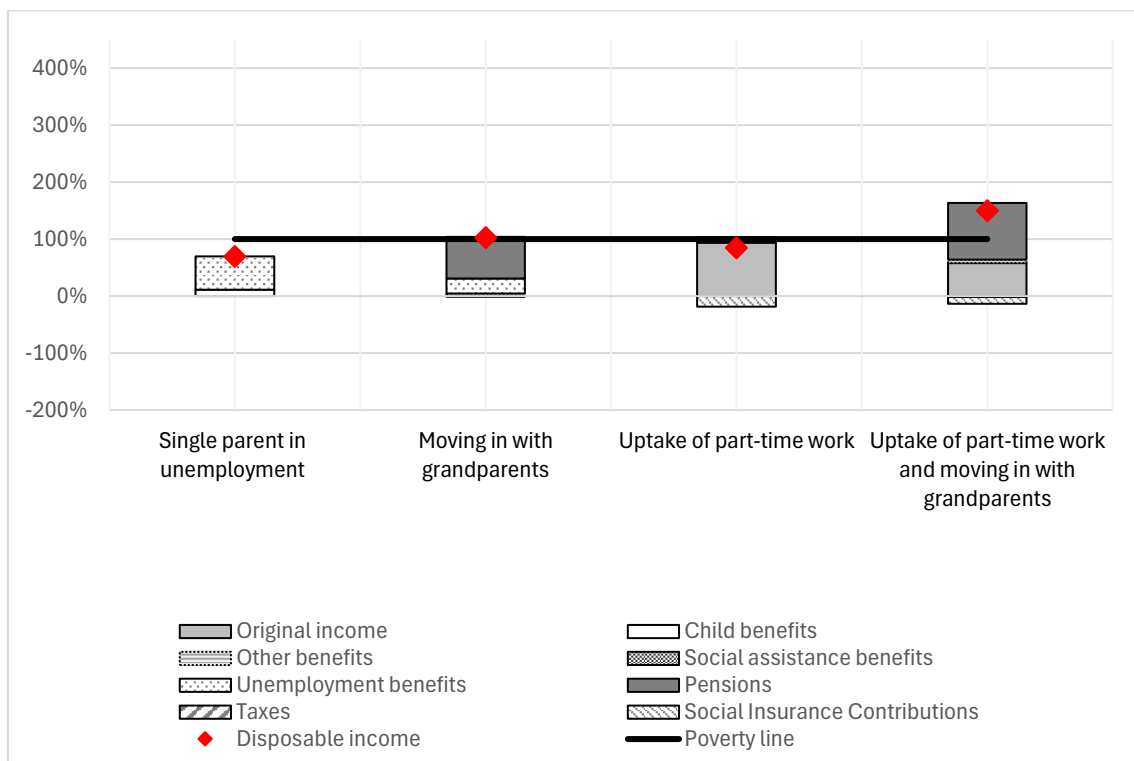


Figure 17 Croatia – How well-off are unemployed single parents in various scenarios?



Poland

Figure 18 Poland – How well-off are different household types at low wage?

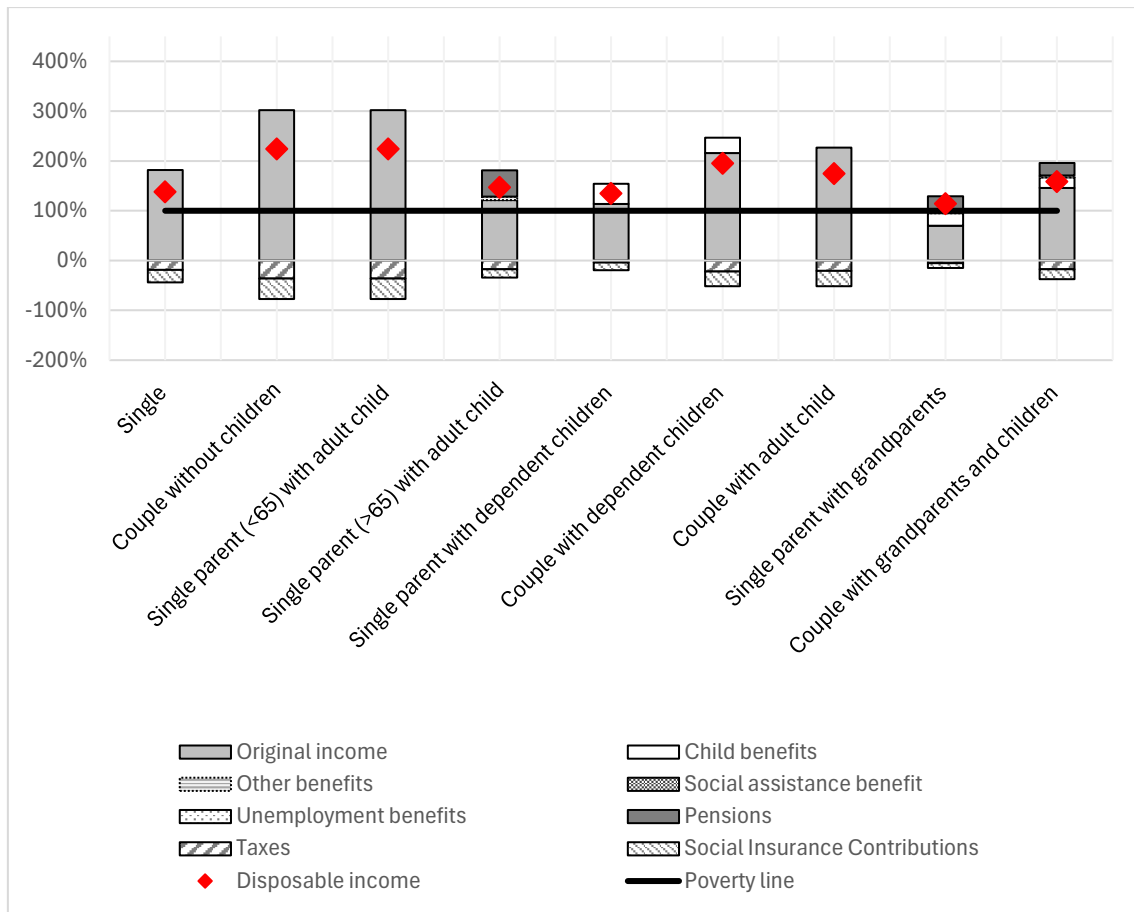


Figure 19 Poland – How well are unemployed couples supported by out-of-work benefits?

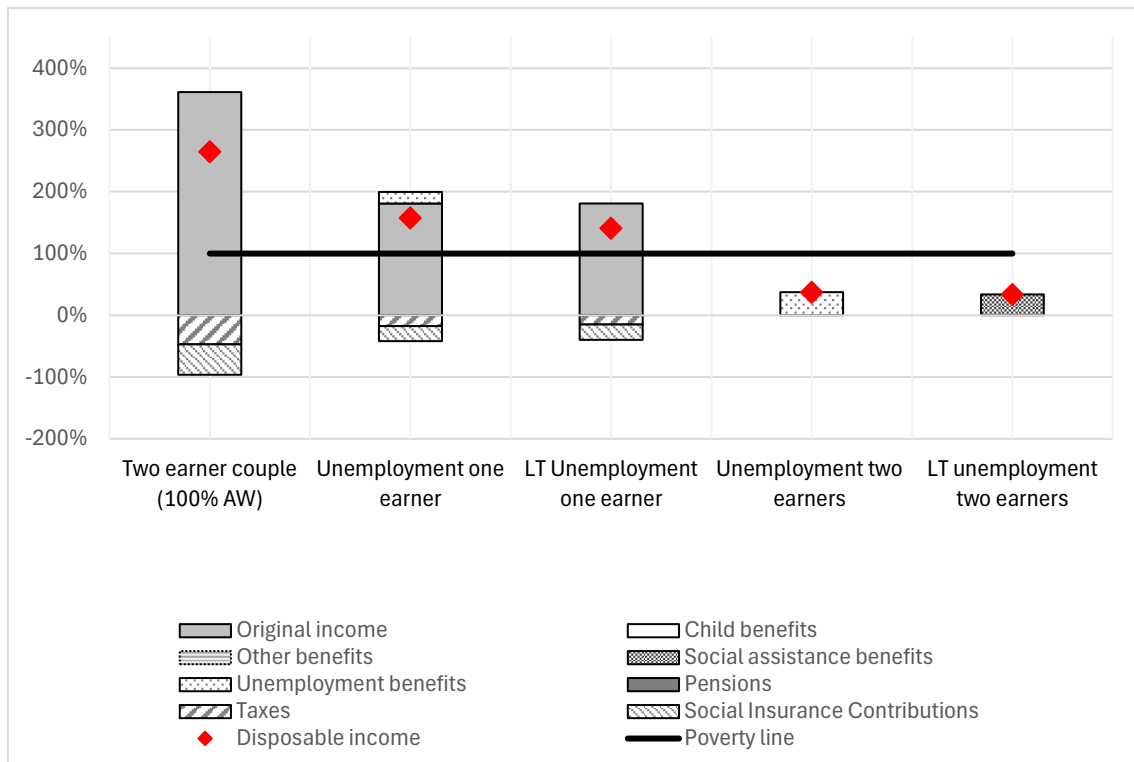
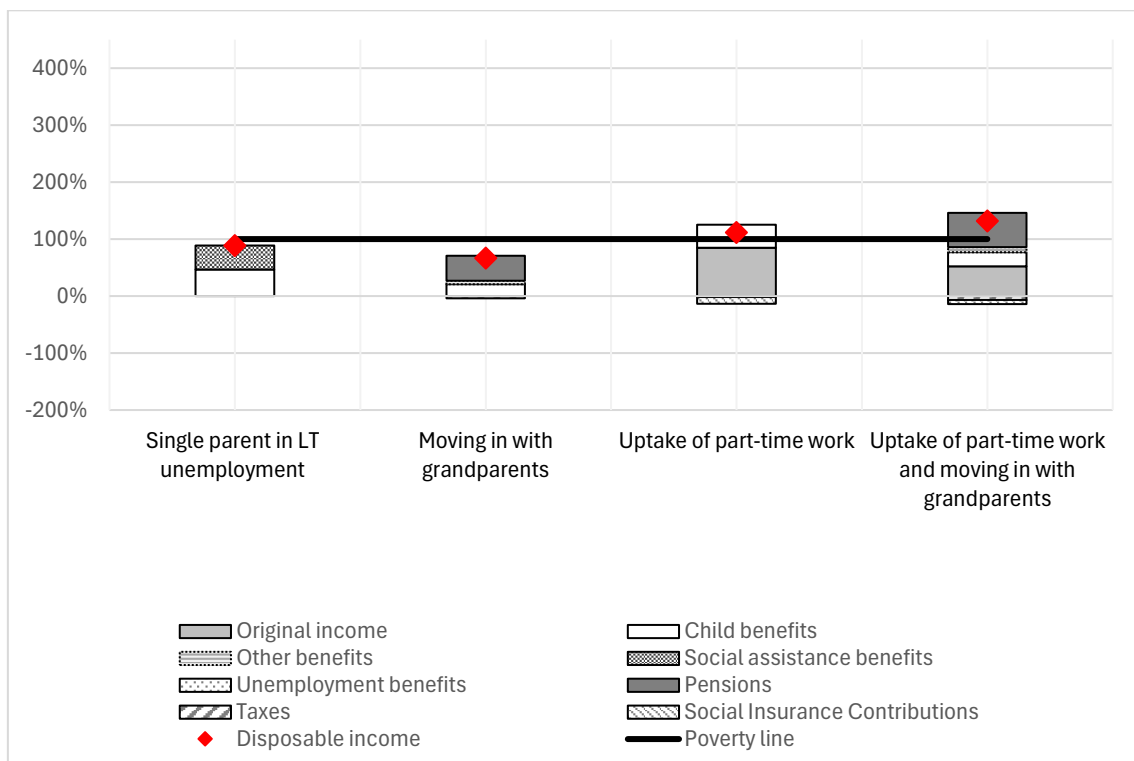


Figure 20 Poland – How well-off are unemployed single parents in various scenarios?



Spain

Figure 21 Spain – How well-off are different household types at low wage?

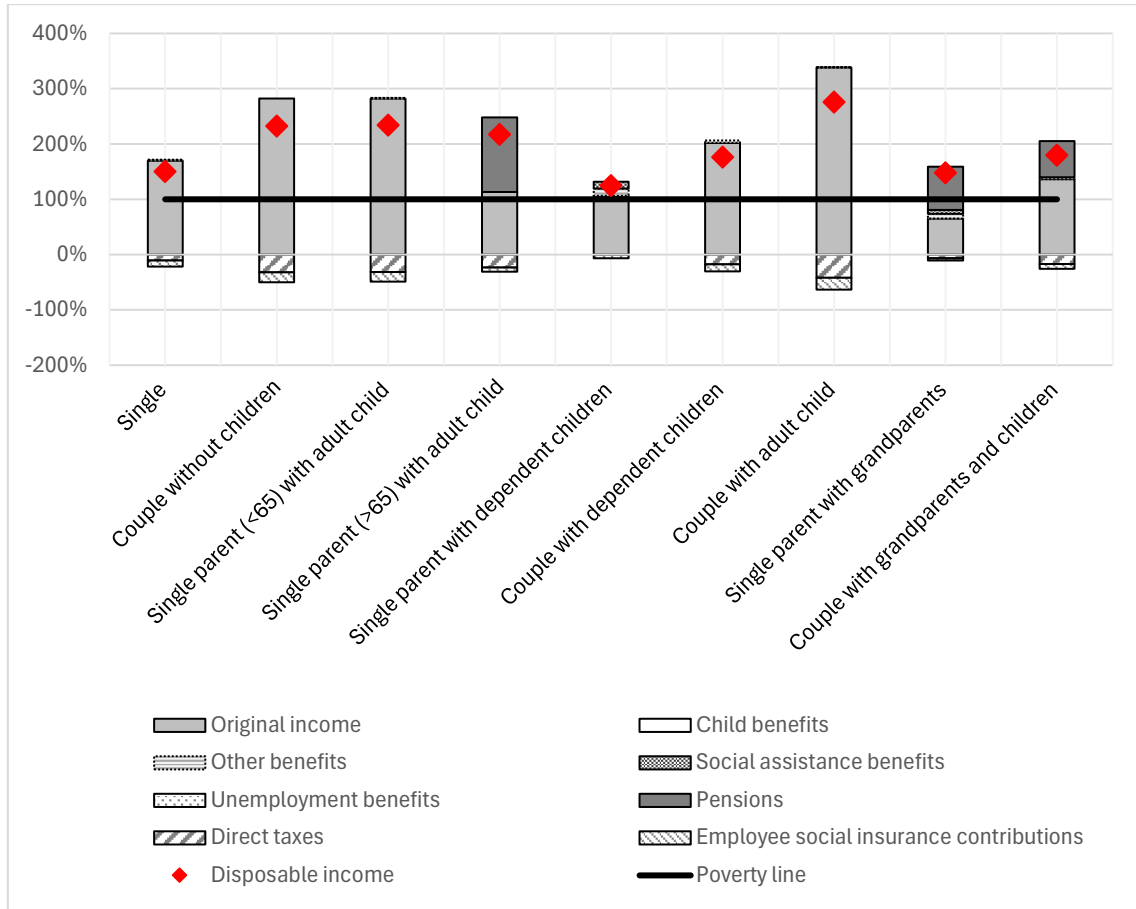


Figure 22 Spain – How well are unemployed couples supported by out-of-work benefits?

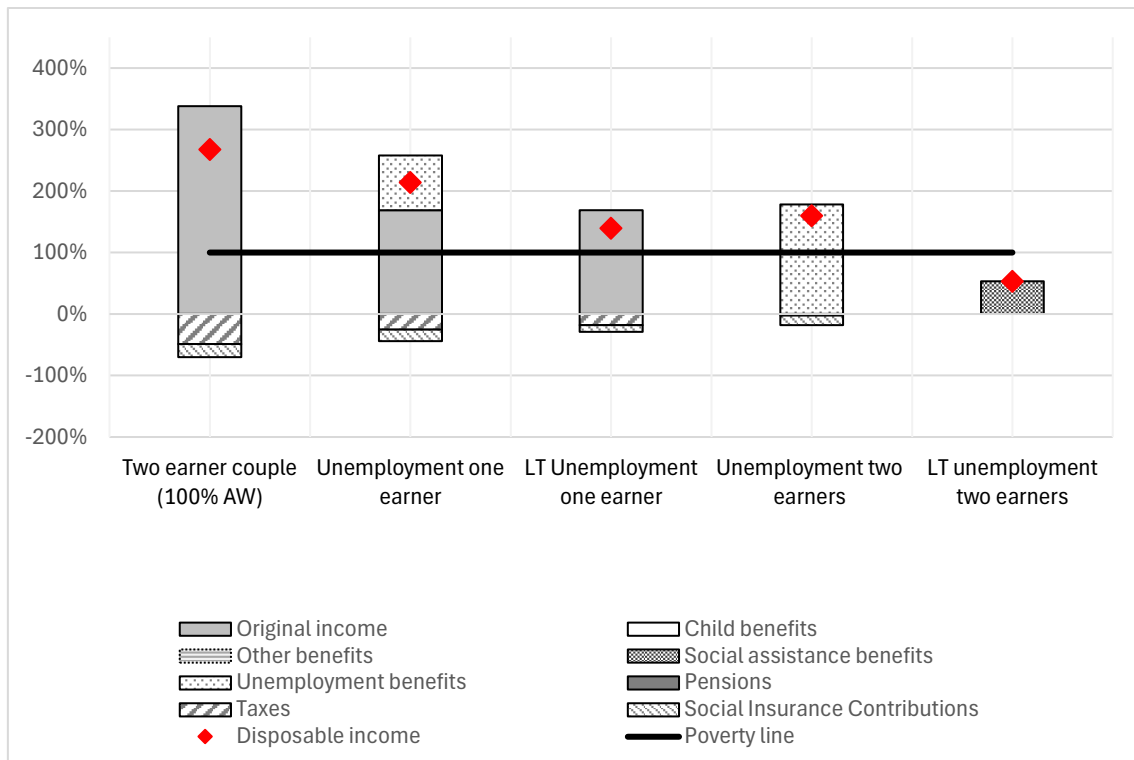
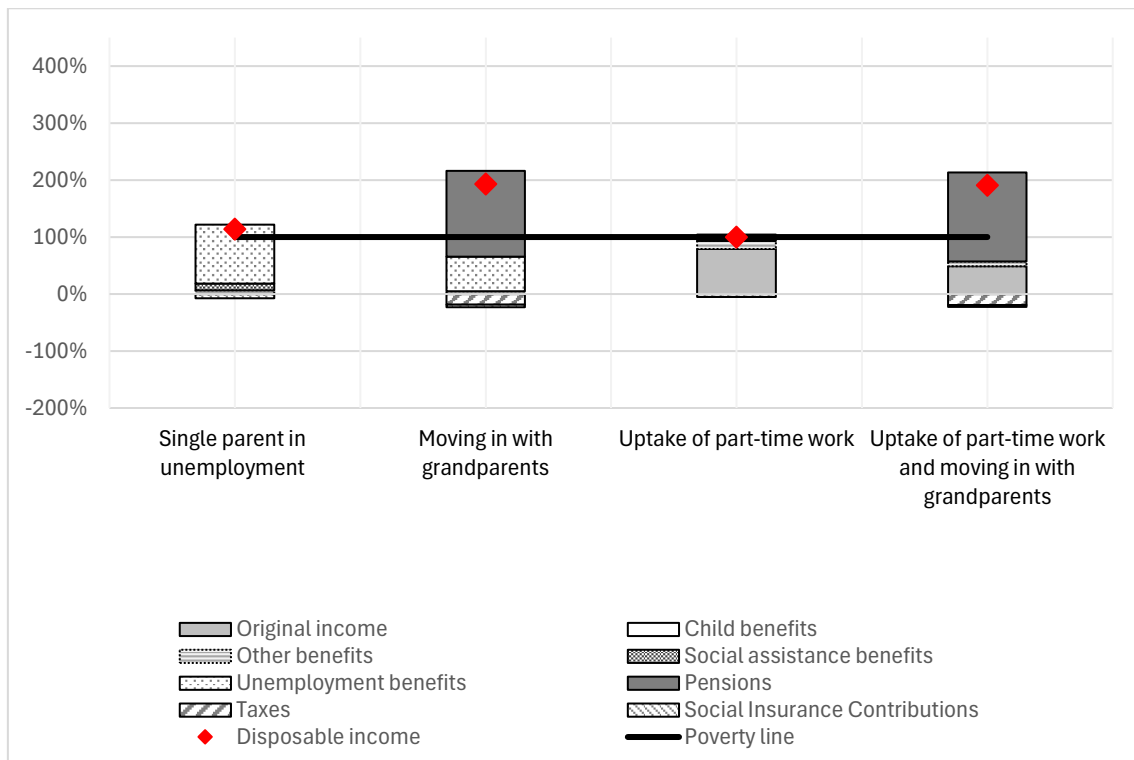


Figure 23 Spain – How well-off are unemployed single parents in various scenarios?



Sweden

Figure 24 Sweden – How well-off are different household types at low wage?

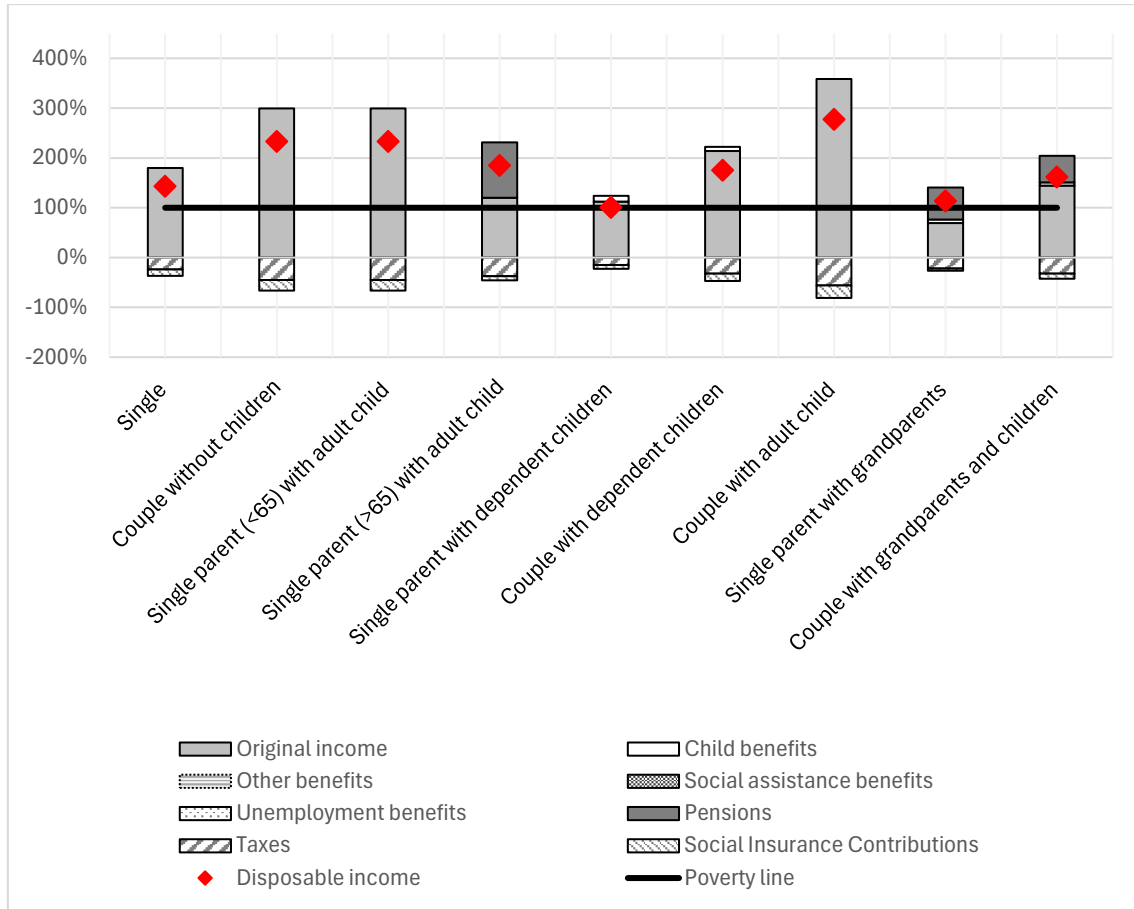
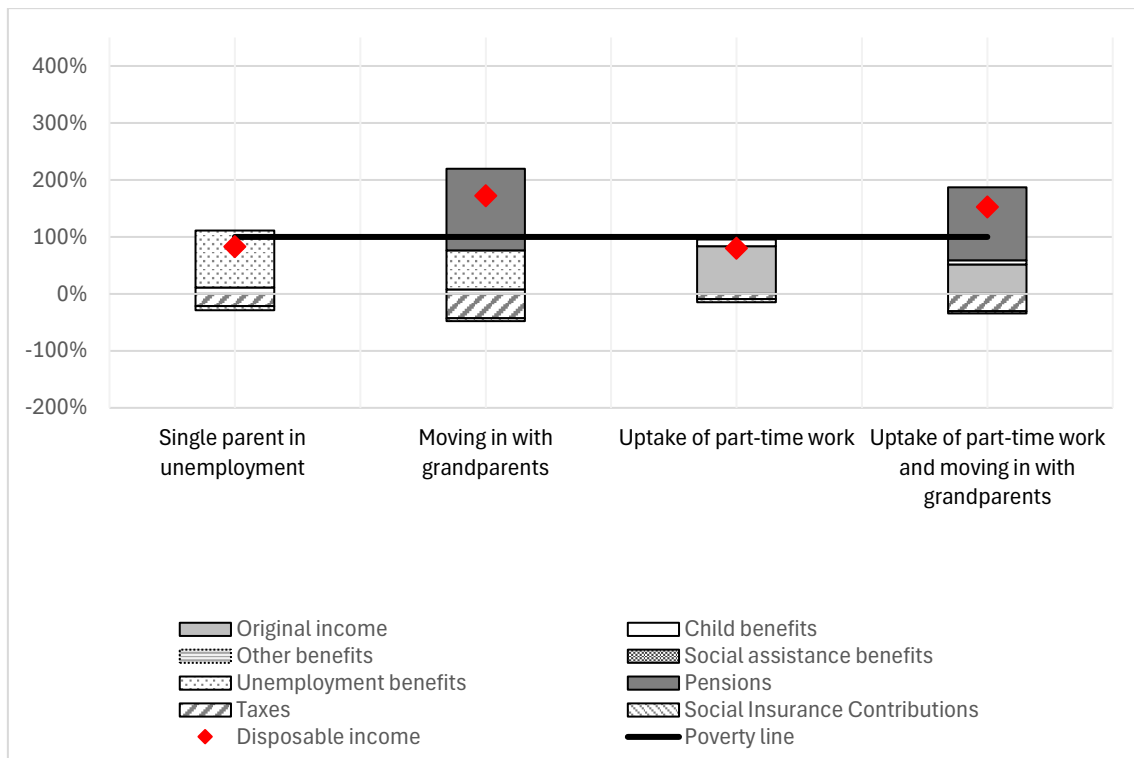


Figure 25 Sweden – How well are unemployed couples supported by out-of-work benefits?



Figure 26 Sweden – How well-off are unemployed single parents in various scenarios?



United Kingdom

Figure 27 UK – How well-off are different household types at low wage?

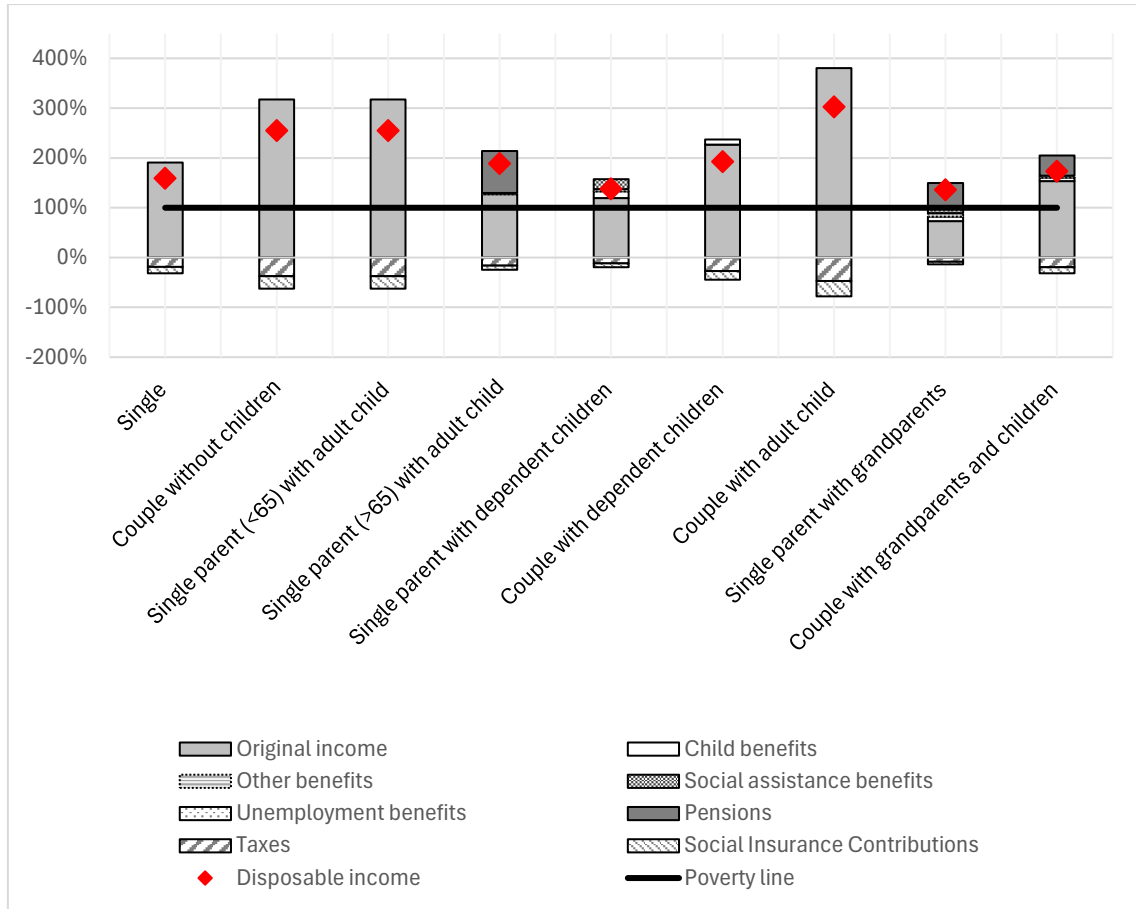


Figure 28 UK – How well are unemployed couples supported by out-of-work benefits?

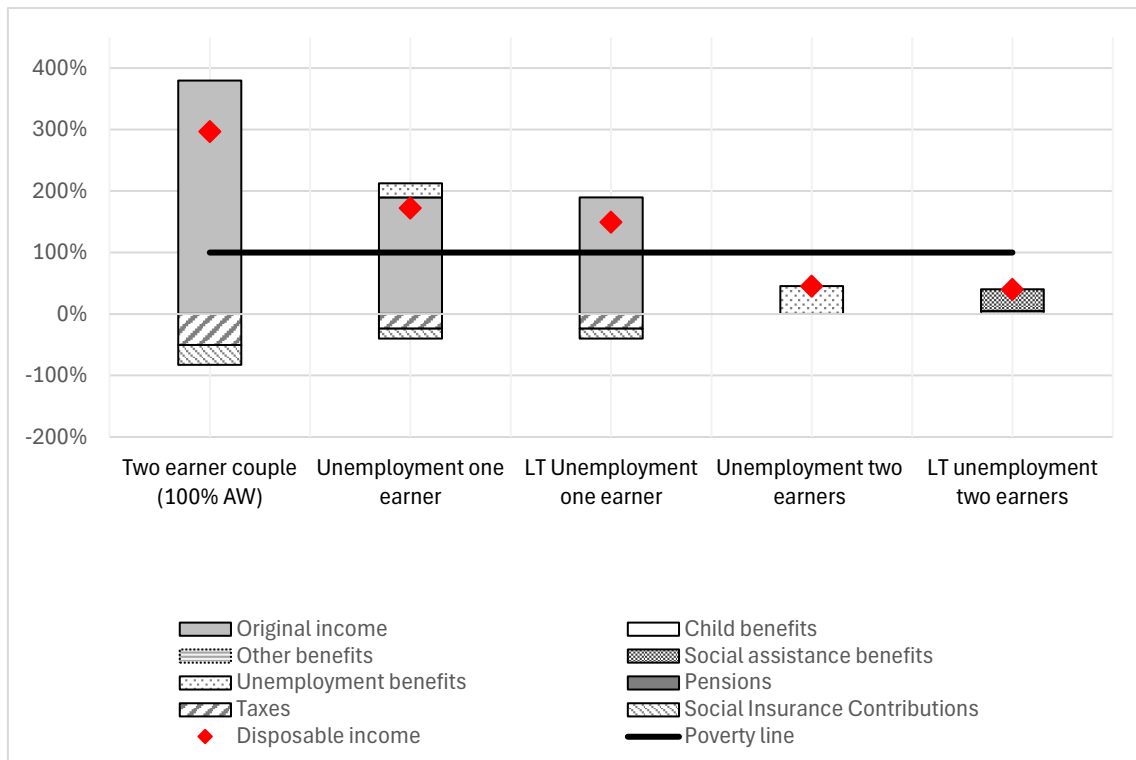
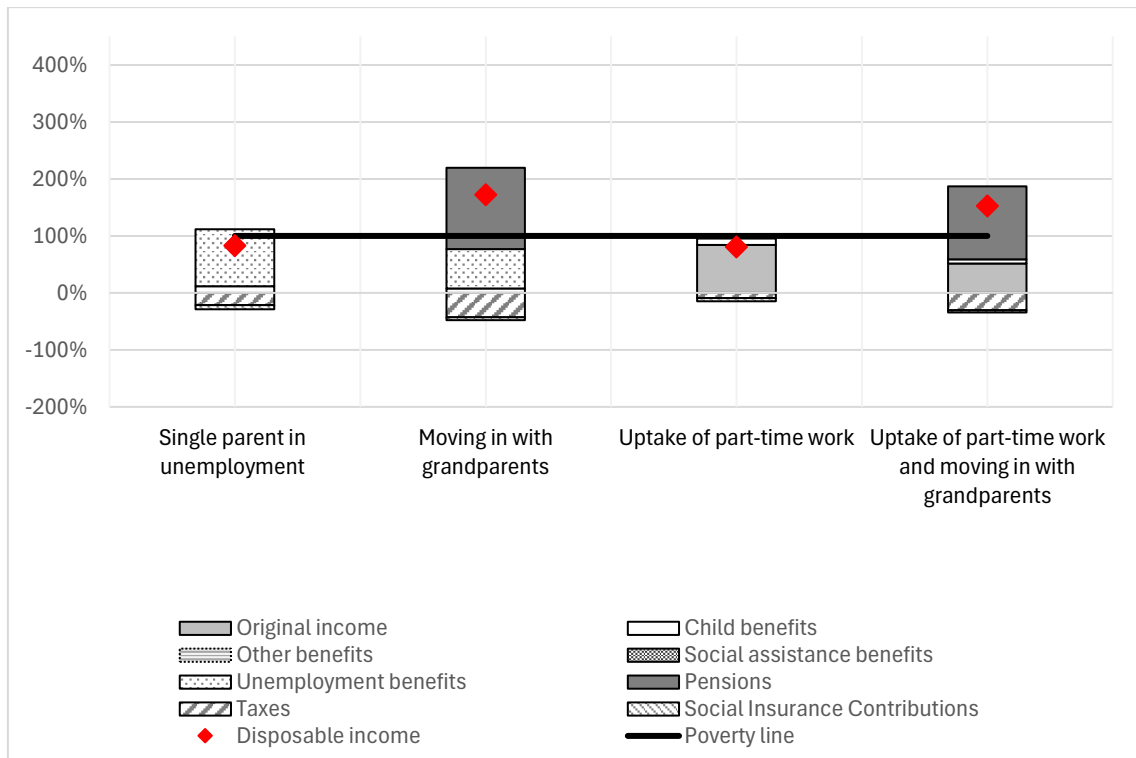


Figure 29 UK – How well-off are unemployed single parents in various scenarios?



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