The effect of tax-benefit changes on the income distribution in 2008-2014

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Abstract

More than half of the EU countries have become poorer and more unequal since the start of the crisis in 2008. Despite lack of timely household micro data, using microsimulation techniques with up-to-date information on policy rules enables us to estimate the direct effect of tax-benefit policy changes in 2008-2014 on the income distribution, poverty and inequality levels in 10 EU countries, as well as track most recent trends by evaluating policy effects in 2013-2014. We identify and quantify these effects using the EU tax-benefit model EUROMOD to construct relevant counterfactual scenarios. Our results indicate that among these countries, most managed to pursue policies without adverse distributional effects, despite of challenging economic problems in this period. However, this has been accompanied by reductions in household income in several countries. There have also been some cases of clearly regressive changes in particular policy instruments. Overall, our results demonstrate the importance of comprehensive regular indexation to avoid the erosion of benefit amounts and tax thresholds over time, and specific population groups systematically gaining or losing relative to others.

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1. Introduction

Household disposable income can be broadly attributed to individual and household characteristics, market incomes and the tax-benefit system. In contrast to earlier work in the economics literature which focussed primarily on wages, with advancements in data collection public economics has been increasingly concerned with changes in the entire distribution of household disposable income. In particular, the negative impacts of increasing income inequality has seen renewed interest in recent years, see e.g. Piketty (2014), Atkinson and Bourguignon (2015), Bargain et al. (2015). In Europe, since the start of the crisis in 2008 until 2012 relative poverty and inequality in more than half of the EU countries have increased.[2] To be able to reverse these trends, first, we ought to understand the drivers behind these changes and second, we need timely analysis to inform the necessary policy decisions. A key prerequisite for timely analysis is the availability of timely data.

Available micro data with rich information on population characteristics and market incomes for the EU countries come with a lag of 2-3 years, which rules out a detailed analysis of the most recent changes in these attributes. However, a tax-benefit microsimulation model with up-to-date policy rules would enable us to analyse the effect of changes to the tax-benefit system on the income distribution in the most recent period. This is precisely the approach followed in this paper and we aim to provide an estimate of the distributional effects of tax-benefit policy changes for a number of EU countries in the period of 2008-2014, i.e. from the beginning of crisis up until the most recent year for which policy rules are known in relevant detail (at the time of writing). Separately, we also quantify the effects of policy changes in the most recent years – 2013-14 – and contrast these with the overall period. Our analysis builds upon and updates our previous estimates (Avram et al., 2013; De Agostini et al., 2014).

The Shorrocks-Shapley decomposition method elaborated by Bargain and Callan (2010) allows the direct effect of tax-benefit policy changes to be isolated from other factors such as changes in market incomes and population characteristics. This is quite distinct from common pre- vs post-transfer comparisons over time where the direct policy effect has not been separated from the automatic response of policies to population and market incomes changes. The decomposition method has been increasingly applied to study the effect of the tax-benefit system on poverty and inequality, see e.g. Bargain et al. (2012, 2013, 2015). The most resonant finding from this research is that policy changes have mostly resulted in lower poverty and inequality than would otherwise have occurred while market and population-driven factors have pushed in the opposite direction. To get a deeper understanding of the policy effect, Paulus et al. (2014) extend the decomposition framework and split the policy effect into the indexation effect – a result to changes in benefit amounts and tax thresholds – and structural changes – a result of changes in the rules of the tax-benefit system. Somewhat surprisingly, they find that in the period in question (2001-11) in the countries studied most of the reduction in poverty and inequality can be attributed to the "indexation effect" which is a combination of statutory indexation rules and ad hoc changes. In contrast, structural changes, if anything, led to increase in indicators of poverty and inequality.

This paper extends the previous literature by providing empirical evidence on the policy effect since the onset of the crisis for 10 EU countries. The countries are Austria, Bulgaria, Estonia, Germany, Greece, Italy, Latvia, Poland, Romania and the UK. The choice of countries is motivated by showing a mix of welfare regimes, government policy choices and economic settings as well as the availability of up-to-date modelling infrastructure. We make use of micro data from the European Union Statistics on Income and Living Conditions (EU-SILC)

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[2] See Eurostat database (indicators ilc_li02 and ilc_di12).

for 2010 and the Family Resources Survey (FRS) for 2009/10 (in the case of UK) to obtain micro-level information on population characteristics and market incomes. We project the distribution of market incomes from 2009 up to 2014 by adjusting for the average growth in incomes by source, making assumptions for the final part of the period. Population characteristics are assumed to have remained the same. To obtain information on benefit entitlements and tax liabilities in the three years of interest (2008, 2013 and 2014), we employ the tax-benefit microsimulation model EUROMOD, which operates on micro data and follows the country-specific tax-benefit rules. EUROMOD simulates benefits and taxes at the individual and household level and calculates household disposable income in turn for the 2008, 2013 and 2014 tax-benefit systems. We construct two counterfactual indices – growth in prices and average market incomes – used as the benchmarks against which we assess the policy changes in 2008-2014 and 2013-2014 and present results on changes in the entire distribution of household disposable income as well as poverty and inequality levels.

Our main findings are as follows: First, policy changes in the period 2008-2014 were mostly progressive (or neutral) and overall contributed to reductions in poverty and inequality levels in the countries studied – the results being robust to both counterfactual indexation assumptions. Policy changes in Greece stood out as being the most redistributive ones although they were accompanied by substantial income drops. In Germany, on the other hand, policy-induced changes gave rise to poverty and inequality indicators. In the UK, although poverty and inequality levels fell due to policies between 2008 and 2014, they increased in the last year of the period (2013-2014). Second, income losses experienced by households were mostly driven by non-pension benefits and tax thresholds not being regularly indexed and lagging behind growth in prices. This resulted in erosion of the real benefit values or increased tax liability due to fiscal drag. However, public pensions subject to statutory indexation rules led to income increases and to the more favourable position of elderly. These findings stress the importance of regular indexation of benefits and tax thresholds, which should be transparent and open to public debate.

In the next section, we discuss in detail the method, model and micro data. Section 3 presents the results. Section 4 concludes.

2. Methodology and data

In this section we first explain the method for assessing the policy effect on incomes. We then discuss the role and implications of the counterfactual indexation, i.e. the benchmark against which we assess the policy effect. Finally, we describe the tax-benefit microsimulation model EUROMOD and the underlying micro data used in the analysis.

The method

Household disposable income is a function of individual and household characteristics, market income and the tax-benefit system. If we want to estimate the effect of tax-benefit policy changes on household incomes between two points in time, we need to isolate them from any changes in population characteristics and market incomes. This provides the basic intuition behind the method we use following from Bargain and Callan (2010).

For example, let us assume that we are in period 1 and the question we want to answer is: what would household disposable income be for the population in period 1 if the system from period

0 had been still in place.[3] There are two main channels through which tax-benefit policy changes between period 0 and 1 can affect household disposable income: first, a direct effect which can be calculated for each household taking their characteristics and market incomes as given; second, an indirect effect through tax-benefit changes altering household behaviour and their work decisions. The accurate estimation of the new vector of population characteristics and market incomes is a challenging task with very substantial data requirements. This is outside the scope of our paper and we focus on the direct policy effects alone.

To answer the question posed here, we could then apply in turn the tax-benefit policies from two points in time on the same population and their market incomes. The resulted change in household disposable income would provide an estimate of the direct effect of policy changes. The question could be also concerned more broadly with the policy effect on any aggregate welfare measure, which is a function of household disposable income such as total household disposable income, poverty headcount, or the Gini coefficient.

Formally, let us denote as y_t a vector of individual and household characteristics and market incomes in period t; as p_t the parameters of the tax-benefit system and as d_t the rules of the tax-benefit system. Household disposable income is then a function $d_t(p_t, y_t)$, where the tax-benefit rules transform market incomes taking the policy parameters and population characteristics as arguments. A generic welfare measure can be denoted as $I[d_t(p_t, y_t)]$. In the first instance, the effect of policy changes on a given welfare indicator – in terms of period 1 population and market incomes – could be calculated as:

$$\Delta I = I[d_1(p_1, y_1)] - I[d_0(p_0, y_1)] \tag{1}$$

Two issues arise from equation (1). First, the policy parameters expressed in monetary terms – for example, benefit amounts and tax thresholds – from period 0, p_0, are not strictly comparable with the ones from period 1, p_1. As prices and market incomes change over time, adjustments are needed to make nominal values from different points in time comparable. This can be simply explained with an example of a family in receipt of child benefits. Instead of being interested in the nominal change of the benefits, the family would probably want to know if benefits have kept up with prices, which over time would allow them to buy the same basket of goods. Another example could be of an employee who would probably be interested to know if over time, tax thresholds have kept up with her earnings as if not, she would automatically move to a higher tax bracket. Hence, we need to introduce a benchmark or a counterfactual indexation factor α, as we will refer to it from now on, against which we can assess the change in p_t. We will discuss the choice of alpha in the next subsection. Note that since the policy effect is assessed in terms of period 1 market incomes, it is the policy parameters from period 0, p_0, that need to be scaled up by the counterfactual indexation to make them comparable with the parameters from period 1, p_1.

Second, there is the issue of timely data. Our aim is to assess the effect of policies between 2008 and 2014 (and 2013 and 2014) in terms of the 2014 population and market incomes. However, at the time of writing there are no micro data available for y_{2014}. The most recent data available (in conjunction with an available tax-benefit model) are from 2009 and we need to make assumptions about how they have changed by 2014. We do this by uprating various components of household market income with growth factors, denoted as U_{2014}, reflecting

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[3] One could be equally interested in assessing period 1 policies with respect to period 0 policies (on population) in period 0.

changes in their average amount in that period. The characteristics of the population are assumed to have remained the same.[4]

To address these two issues, the policy effect between 2008 and 2014 can be estimated based on the following formula:

$$\Delta I = I[d_{2014}(p_{2014}, U_{2014}y_{2009})] - I[d_{2008}(\alpha p_{2008}, U_{2014}y_{2009})] \qquad (2)$$

In addition, we quantify effects of the policy changes between 2013 and 2014:

$$\Delta I = I[d_{2014}(p_{2014}, U_{2014}y_{2009})] - I[d_{2013}(\alpha p_{2013}, U_{2014}y_{2009})] \qquad (3)$$

Counterfactual indexation

The counterfactual indexation α is the yardstick which we use to measure the effect of changes in the levels of benefits and tax thresholds on our indicator of interest. As we assess the policy effect in terms of 2014 market incomes, we need to adjust the nominal values of 2008 (and 2013) policy parameters by α. The choice of α should be economically meaningful, not least because it affects the scale and – more importantly given our focus on distributional effects – progressivity of the policy effect. The intuition behind this is the following: a larger α will result in higher counterfactual benefit amounts and tax thresholds, e.g. αp_{2008} when compared to p_{2014}, which would appear more generous and any income gains (losses) for households due to moving from the 2008 to the 2014 tax-benefit system would be assessed as being relatively smaller (bigger). Furthermore, as pointed out in Paulus et al. (2014), in a progressive tax-benefit system, which is the one prevailing in European countries, the choice of α affects the lower part of the income distribution disproportionally more than the upper part. A higher α would show the 2014 tax-benefit system less progressive relative to the 2008 system.

In this paper, we follow the two approaches most often used in the previous literature:

- $\alpha_1 = MII$ (Market Income Index), 2008 (and 2013) benefit amounts and tax thresholds are indexed by the growth in average market income between 2008-2014 (2013-2014);

- $\alpha_2 = CPI$ (Consumer Price Index), 2008 (and 2013) benefit amounts and tax thresholds are indexed in line with inflation between 2008-2014 (2013-2014).

MII-based indexation implies that the overall balance between cash benefits and household taxes would be broadly unchanged and the system fiscally neutral in this respect. For example, there would be no fiscal drag (on the whole) as tax brackets are adjusted in line with income growth. Such indexation would be also neutral between households regardless whether they rely on market income or public support. On the other hand, at times of economic downturn, MII-indexation implies that benefit amounts and tax thresholds may be *decreased* both in nominal and real terms, which could weaken further the position of the most vulnerable at the times of hardship. CPI-based indexation adjusts tax-benefit parameters in line with prices and hence avoids erosion in their real values throughout the business cycle. However, as real market incomes are likely to grow over time, CPI-based indexation is not sufficient to maintain the level of public support (for benefit recipients) relative to market incomes (of e.g. wage earners).

Table 1 below presents the movements in CPI and MII in the two periods: 2008-2014 and 2013-2014.

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[4] Avram et al. (2013) explore the sensitivity of their results by modelling changes in the labour market and find that their results remain overall robust.

Table 1: Movement in prices (CPI) and market incomes (MII) in 2008-14 and 2013-14

Country	2008-14 MII	2008-14 CPI	2013-14 MII	2013-14 CPI
BG	1.276	1.104	1.040	0.984
DE	1.098	1.086	1.008	1.008
EE	1.081	1.172	1.059	1.008
EL	0.825	1.081	0.985	0.986
IT	0.951	1.105	1.001	1.003
LV	0.859	1.104	1.056	1.015
AT	1.114	1.124	1.018	1.015
PL	1.284	1.160	1.035	1.003
RO	1.264	1.282	1.056	1.014
UK	1.052	1.174	1.022	1.013

Sources: MII is based on own calculations using EUROMOD, CPI is based on Eurostat's series for Harmonised Indices of Consumer Prices (HICP).

The European tax-benefit model EUROMOD and data

We are interested in policy effects across the whole income distribution and rely on available survey micro data on population characteristics and market incomes. To obtain information on micro-level household disposable income under different scenarios, we use the tax-benefit microsimulation model EUROMOD, the tax-benefit microsimulation model for the EU. It represents a unique tool for cross-country comparisons and currently covers all EU 27 member states.[5] The model operates on nationally representative micro data (mainly EU-SILC) and follows the country-specific tax-benefit rules (as of 30th of June in the given year). It is a static microsimulation model, i.e. no behavioural responses to policies are taken into account. The model simulations cover broadly cash benefit entitlements – unemployment benefits, family benefits and social assistance – and direct tax liabilities on households – property and income taxes. Due to data limitations, public pensions are mainly not simulated and information on them as well as any other non-simulated benefits is taken directly from the micro data. For detailed information on EUROMOD, see Sutherland and Figari (2013), and for detailed information on the country-specific modules in EUROMOD, see EUROMOD Country Reports.[6]

The micro data we use in this analysis are the most recent currently available in EUROMOD: EU-SILC 2010 and the Family Resources Survey 2009/2010 for the UK (see Appendix 1). These contain information on market incomes in 2009, which are therefore uprated to reflect the growth in various market income components between 2009 and 2014. (Population characteristics are assumed to have remained the same.) Furthermore, non-simulated benefits, the main ones of which are public pensions, are uprated up to 2014 to reflect the statutory indexation rules in the countries (see Appendix 2).[7] Assuming that in such a relatively short period of time, there have not been any (large) compositional changes in the (elderly) population, with the uprating we expect to arrive at the actual distribution of the non-simulated benefits in 2014. For more information on the indexation rules of public pensions in each

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[5] By 2016, EUROMOD will be extended to the EU-28 (i.e. adding Croatia).

[6] EUROMOD Country Reports are available online here: https://www.iser.essex.ac.uk/euromod/resources-for-euromod-users/country-reports.

[7] In countries, where information on statutory indexation is not available or the rules are too complex to be calculated, we have taken the average growth in pensions as an uprating factor.

country, see Appendix 2. We utilise the model by simulating in turn the 2008, 2013 and 2014 tax and benefit systems on the uprated micro data. For each household in the data we have in this way an estimate of their disposable income under the 2008 and 2013 counterfactual, and 2014 tax-benefit systems. This information is used to calculate the change in household disposable income as well as poverty and inequality indicators due to the change in policies. All income concepts used throughout the analysis have been adjusted for household size, using the modified OECD equivalence scale. We also provide standard errors for all our EUROMOD-based estimates to account for *sample variation*, employing the delta method (Taylor approximations). This however does not reflect the accuracy of policy simulations.

We also provide an estimate of the effect of key changes in indirect taxes. As there is no comprehensive information collected on household consumption in SILC, which would be needed for fully simulating indirect taxes, we draw on existing studies providing an estimate for the incidence of VAT across the income distribution. On this basis, we approximate the effects of changes in the standard VAT rate in terms of household disposable income and consider these alongside our main simulation results.

3. Results

In this section, we first present results for the direct effect of tax and benefit policy changes on poverty and inequality levels. To understand further how fiscal policy changes affected household income, the direct policy effect on mean household disposable income and across various income groups is examined. We then discuss the population groups that have been most affected and the types of tax-benefit policy that contributed most to the policy effect. Finally, we extend the analysis with the effect of changes in VAT.

Before proceeding with the results, one should be reminded about the role of the counterfactual indexation α and the particular values we use as shown in Table 1. Between 2008 and 2014 among the 10 countries, 3 saw their market incomes rising faster than prices: Bulgaria, Germany and Poland. The remaining 7 countries – Austria, Estonia, Greece, Italy, Latvia, Romania and the UK – saw their market incomes falling in real terms (in fact, there was a drop even in nominal market incomes in Greece, Italy and Latvia). For the 3 former countries it implies that the scale and progressivity of the policy effect will be larger relative to CPI indexation than to MII, while the opposite is true for the remaining 7 countries. For 2013-2014 alone, the gap between CPI and MII was much smaller.

The policy effect on poverty and inequality levels

To show the effect of tax-benefit policy changes on overall poverty and inequality, we use the following three measures: the poverty headcount (i.e. FGT0), poverty gap (i.e. FGT1) and the Gini coefficient.[8] Table 2 reports the policy effect on the poverty headcount. The column with the heading '2014 baseline' shows the estimated poverty headcount (in percent) in each country under the 2014 tax-benefit system. The change (in percentage points - pp) in the poverty headcount due to the policy effect is shown in other columns, separately for the whole period (2008-14) and for the sub-period (2013-14) alone, and both counterfactual indexation assumptions (CPI and MII). A positive change means that the poverty level has increased, while a negative value means it has fallen due to policies. The poverty line is 60% of the median equivalised household disposable income (in the corresponding scenario).

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[8] See Foster et al. (1984) for the FGT index.

The main message to take away from Table 2 is that, consistent with previous literature, tax-benefit policy changes since the start of the crisis were mostly poverty reducing – noting that not all effects are statistically significant at the 95% level – and the finding is fairly robust between CPI and MII counterfactual indexation. The policy effect in 2008-2014 relative to CPI indexation was statistically significant and increased the headcount poverty rate only in Germany (+1.2pp) and in the UK (+0.6pp). In other words, under the 2014 tax-benefit system the poverty rates in these countries are higher than they would have been if instead price-indexed 2008 tax-benefit systems had continued to be in place. The countries with the largest policy-induced poverty reduction are Greece (-2.4pp) followed by Bulgaria (-1.5pp), Estonia (-1.2pp) and Romania (-1pp). Hence, the 2014 tax-benefit system in these countries is more effective in lowering poverty than a price-indexed 2008 tax-benefit system would have been. In the rest of the countries, the policy effect did not make (much of) a difference.

Due to the change in MII being larger than the change in CPI, compared to the 2008 tax-benefit policies indexed by market incomes, the 2014 policies gave rise to an even larger poverty increase in Germany (1.5pp) and in Poland (0.6pp). In contrast to the CPI-indexed 2008 policies, as real market incomes fell in the UK, 2014 policies reduced poverty compared to MII-indexed 2008 policies (-1.2pp). The policy effects were also poverty-reducing in Latvia (-3pp), Estonia (-2.6pp) and Greece (-2.6pp), followed by Italy (-1pp), Romania (-1pp) and Bulgaria (-0.5pp).

Table 2: The effect of policy changes in 2008-2014 and 2013-2014 on the poverty headcount (FGT0)

Country	2014 baseline (%)	Change in 2008-2014 (percentage points)				Change in 2013-2014 (percentage points)			
		CPI		MII		CPI		MII	
BG	19.5 (0.70)	-1.5***	(0.24)	-0.5**	(0.20)	-0.3***	(0.10)	0.0	(0.17)
DE	12.8 (0.35)	1.2***	(0.18)	1.5***	(0.18)	-0.1***	(0.05)	-0.1***	(0.05)
EE	17.3 (0.62)	-1.2***	(0.25)	-2.6***	(0.28)	-1.1***	(0.16)	0.0	(0.06)
EL	16.5 (0.80)	-2.4***	(0.45)	-2.6***	(0.37)	-1.4***	(0.36)	-1.4***	(0.36)
IT	18.3 (0.40)	-0.3***	(0.09)	-1.0***	(0.12)	-0.1	(0.08)	-0.1	(0.08)
LV	21.6 (0.72)	0.3	(0.30)	-3.0***	(0.31)	-0.1	(0.21)	0.6**	(0.24)
AT	10.5 (0.54)	0.1	(0.20)	0.0	(0.20)	-0.1**	(0.05)	-0.1**	(0.05)
PL	18.1 (0.47)	0.2	(0.21)	0.6***	(0.16)	0.0	(0.10)	0.0	(0.06)
RO	21.7 (0.81)	-1.0***	(0.28)	-1.0***	(0.29)	-0.2	(0.16)	0.2	(0.18)
UK	15.5 (0.29)	0.6***	(0.12)	-1.2***	(0.13)	0.4***	(0.05)	0.5***	(0.07)

*Notes: Significance levels indicated as * p<0.1, ** p<0.05, *** p<0.01 and standard errors shown in parentheses. The poverty headcount is measured as the percentage of the population with equivalised household disposable income below 60% of the median.*
Source: Own simulations with EUROMOD.

Similarly to the previous table, in Table 3 we show findings on the poverty gap which is less sensitive than the poverty headcount to changes in the poverty line (i.e. to changing median incomes) – and reflected in relatively smaller standard errors of the estimates. The results for both counterfactual indexations are overall consistent with the ones on poverty headcount. Interestingly, although Italy, Romania and the UK show about the same reduction in poverty headcount ratio when the policy effect is measured against MII indexation, the reduction in poverty gap is relatively high in Romania (-1.1pp), while about zero in Italy and the UK.

Table 3: The effect of policy changes in 2008-2014 and 2013-2014 on the poverty gap (FGT1)

Country	2014 baseline (%)	Change in 2008-2014 (percentage points)				Change in 2013-2014 (percentage points)			
		CPI		MII		CPI		MII	
BG	5.63 (0.27)	-0.66***	(0.04)	-0.04	(0.03)	-0.14***	(0.01)	0.12***	(0.01)
DE	2.42 (0.08)	0.47***	(0.04)	0.51***	(0.04)	-0.04***	(0.00)	-0.04***	(0.00)
EE	4.14 (0.19)	-0.60***	(0.04)	-1.08***	(0.06)	-0.46***	(0.03)	-0.26***	(0.02)
EL	4.83 (0.32)	-1.00***	(0.12)	-0.65***	(0.11)	-0.66***	(0.05)	-0.66***	(0.05)
IT	6.85 (0.20)	-0.01	(0.01)	-0.11***	(0.02)	0.07***	(0.01)	0.07***	(0.01)
LV	6.06 (0.25)	-0.73***	(0.07)	-1.72***	(0.09)	0.03	(0.03)	0.17***	(0.03)
AT	1.65 (0.12)	-0.18***	(0.03)	-0.21***	(0.03)	-0.06***	(0.00)	-0.05***	(0.00)
PL	4.93 (0.16)	-0.01	(0.03)	0.10***	(0.03)	0.04***	(0.01)	0.06***	(0.01)
RO	7.08 (0.34)	-1.10***	(0.09)	-1.13***	(0.09)	-0.30***	(0.03)	-0.12***	(0.03)
UK	4.46 (0.11)	0.28***	(0.03)	-0.11***	(0.03)	0.09***	(0.01)	0.12***	(0.01)

Notes: Significance levels indicated as * p<0.1, ** p<0.05, *** p<0.01 and standard errors shown in parentheses. The poverty gap measures the average shortfall from the poverty line expressed as a percentage of the poverty line (across the whole population). The poverty line is 60% of the median of equivalised household disposable income.
Source: Own simulations with EUROMOD.

Finally, in Table 4 we provide the estimate of the effect of policies on the Gini coefficient. When we compare the 2014 policies with the CPI-indexed 2008 policies, the policy effect on Gini was inequality-increasing only in Germany (0.5pp) (there is also a tiny, but statistically significant increase in Austria of 0.1pp). If instead of 2014, the MII-indexed 2008 tax-benefit policies were in place, inequality would have been lower in Germany (by 0.6pp) and Poland (by 0.4pp) or, in other words, the effect of policy changes between 2008 and 2014 was inequality-increasing when adjusting for differences in the level of market incomes. On the other hand, in Bulgaria, Estonia, Greece, Italy, Latvia, Romania and the UK, the 2014 policies are estimated to be more effective in reducing inequality than either the CPI or MII-indexed 2008 policies would have been.

In addition, Table 2, Table 3 and Table 4 show the effect of 2014 policies in comparison with 2013 on the poverty headcount, poverty gap and Gini coefficient. Two aspects need to be noted. First, the policy effect in 2013-2014 is part of the total effect in 2008-2014. Second, the discrepancy between CPI and MII is much smaller in 2013-2014 than in 2008-2014 and so, the policy effects in 2013-2014 are less sensitive to the choice of indexation. The most notable finding is that Greek policy changes continuously contributed to reductions in poverty and inequality with the 2014 policies accounting for more than half of the reduction over the total period. In contrast, UK policy changes in the last year gave rise to increases in the poverty and inequality indicators, robust to both CPI and MII counterfactual indexations.

Table 4: The effect of policy changes in 2008-2014 and 2013-2014 on the Gini coefficient of equivalised household disposable income

Country	2014 baseline (%)	Change in 2008-2014 (percentage points)				Change in 2013-2014 (percentage points)			
		CPI		MII		CPI		MII	
BG	33.0 (0.71)	-1.33***	(0.06)	-0.13***	(0.05)	-0.26***	(0.01)	0.19***	(0.01)
DE	26.9 (0.34)	0.46***	(0.04)	0.56***	(0.05)	-0.07***	(0.00)	-0.07***	(0.00)
EE	31.0 (0.47)	-0.20***	(0.03)	-0.95***	(0.04)	-0.58***	(0.02)	-0.13***	(0.01)
EL	30.7 (0.79)	-1.02***	(0.17)	-1.29***	(0.11)	-0.52***	(0.04)	-0.52***	(0.04)
IT	31.5 (0.33)	-0.36***	(0.02)	-1.05***	(0.03)	-0.20***	(0.01)	-0.20***	(0.01)
LV	35.2 (0.47)	-0.46***	(0.10)	-2.52***	(0.10)	-0.21***	(0.04)	0.08	(0.05)
AT	25.5 (0.64)	0.10***	(0.04)	0.04	(0.04)	-0.05***	(0.01)	-0.02***	(0.01)
PL	31.2 (0.32)	-0.13***	(0.04)	0.41***	(0.03)	-0.13***	(0.01)	0.04***	(0.01)
RO	32.9 (0.45)	-1.04***	(0.07)	-1.12***	(0.07)	-0.22***	(0.02)	0.04	(0.03)
UK	31.7 (0.31)	-0.18***	(0.04)	-1.33***	(0.04)	0.09***	(0.00)	0.18***	(0.00)

*Notes: Significance levels indicated as * p<0.1, ** p<0.05, *** p<0.01 and standard errors shown in parentheses.*
Source: Own simulations with EUROMOD.

The policy effect on mean income

We consider next how household finances were affected. The policy effect on mean household disposable income is reported in Table 5, showing the percentage change in mean income separately for each period and counterfactual indexation. A positive change in the mean implies that the change in policies resulted in an increase in the average income as well as cost to the public finances.

Table 5: The effect of policy changes in 2008-2014 and 2013-2014 on mean equivalised household disposable income

Country	Change in 2008-2014 (%)				Change in 2013-2014 (%)			
	CPI		MII		CPI		MII	
BG	5.2***	(0.13)	2.1***	(0.10)	0.6***	(0.02)	-0.7***	(0.02)
DE	1.0***	(0.07)	0.5***	(0.07)	0.0***	(0.00)	0.0***	(0.00)
EE	-2.3***	(0.05)	0.0	(0.07)	1.2***	(0.03)	-0.1***	(0.01)
EL	-13.3***	(0.27)	-4.3***	(0.17)	1.2***	(0.05)	1.2***	(0.05)
IT	-2.7***	(0.04)	3.7***	(0.05)	0.4***	(0.02)	0.5***	(0.02)
LV	-2.1***	(0.19)	3.6***	(0.20)	2.0***	(0.06)	0.9***	(0.10)
AT	-1.7***	(0.05)	-1.3***	(0.06)	-0.2***	(0.01)	-0.3***	(0.01)
PL	5.0***	(0.07)	1.8***	(0.05)	0.8***	(0.02)	-0.1***	(0.01)
RO	1.4***	(0.14)	1.9***	(0.14)	0.2***	(0.03)	-1.2***	(0.04)
UK	0.3***	(0.07)	3.6***	(0.08)	0.2***	(0.01)	-0.1***	(0.01)

*Notes: Significance levels indicated as * p<0.1, ** p<0.05, *** p<0.01 and standard errors shown in parentheses.*
Source: Own simulations with EUROMOD.

Although policy changes between 2008 and 2014 in Greece reduced poverty and inequality, this coincided with substantial drops in household incomes – especially large when 2014 is

compared with the 2008 CPI-indexed system (-13.3%). It was also the only country in this period where policies reduced mean household incomes even in nominal terms (about 10%). Policy changes contributed to income-increases in Bulgaria and Poland followed by Romania and Germany, the results being robust to the two indexations. Contrasting these results with the findings on poverty and inequality, they suggest that the increase in income in Bulgaria and Romania (5.2% and 1.4% relative to CPI, respectively, and 2.1% and 1.9% relative to the MII counterfactual, respectively) was supported by progressive policy changes which mostly benefitted the poor. In contrast to Romania and Bulgaria, the policy effect, although regressive in nature, led to an increase in household income in Germany (1% relative to CPI and 0.5% relative to the MII counterfactual). In Poland, the same is true only for the MII indexation (the policy changes measured against CPI did not have a statistically significant effect on poverty and inequality).

In 2013-2014, when market incomes grew ahead of prices in most of the countries, the average policy effect on household income measured against the CPI-indexed 2013 system was positive in most of the countries. In Austria, policy changes led to small income losses; the same for Romania and Bulgaria but only when these were measured against the MII indexation.

The distribution of policy effects

Figure 1 shows the effect of policy changes between 2008 and 2014 across the income distribution – adjusted for differences in CPI (dash line) and MII (solid line). The percentage change in mean disposable income (vertical axis) is now calculated for each of the 10 income decile groups (horizontal axis). There are several notable features. First, the policy effect, irrespective of indexation, was progressive (or neutral) in most countries, the only exceptions being Germany, Poland (when measured relative to MII) and the UK (when measured relative to CPI) where the poor benefitted least/lost most. Second, in most countries at least part of the income distribution experienced income losses as 2014 benefit amounts and tax thresholds fell below price-adjusted 2008 parameters, Bulgaria and Poland being the only exceptions. Greece experienced by far the most drastic cuts though in relative terms these were clearly larger for high income groups. Third, the policy effects are more favourable when measured against the MII-indexed 2008, both in terms of size and progressivity in most of the countries, as growth in market incomes lagged behind price changes (and in fact, market incomes fell in Greece, Italy and Latvia).
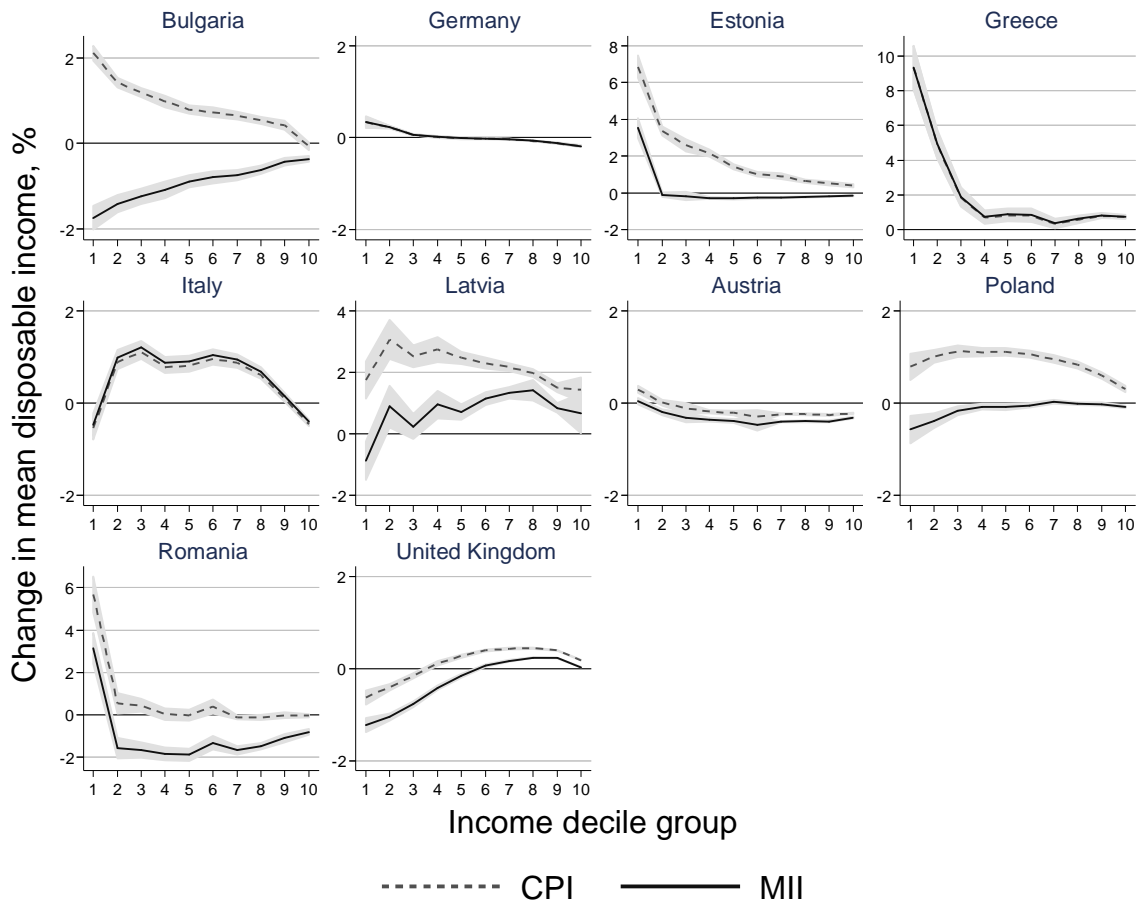
Figure 1: Percentage change in household disposable income due to policy changes 2008-2014 by household income decile group
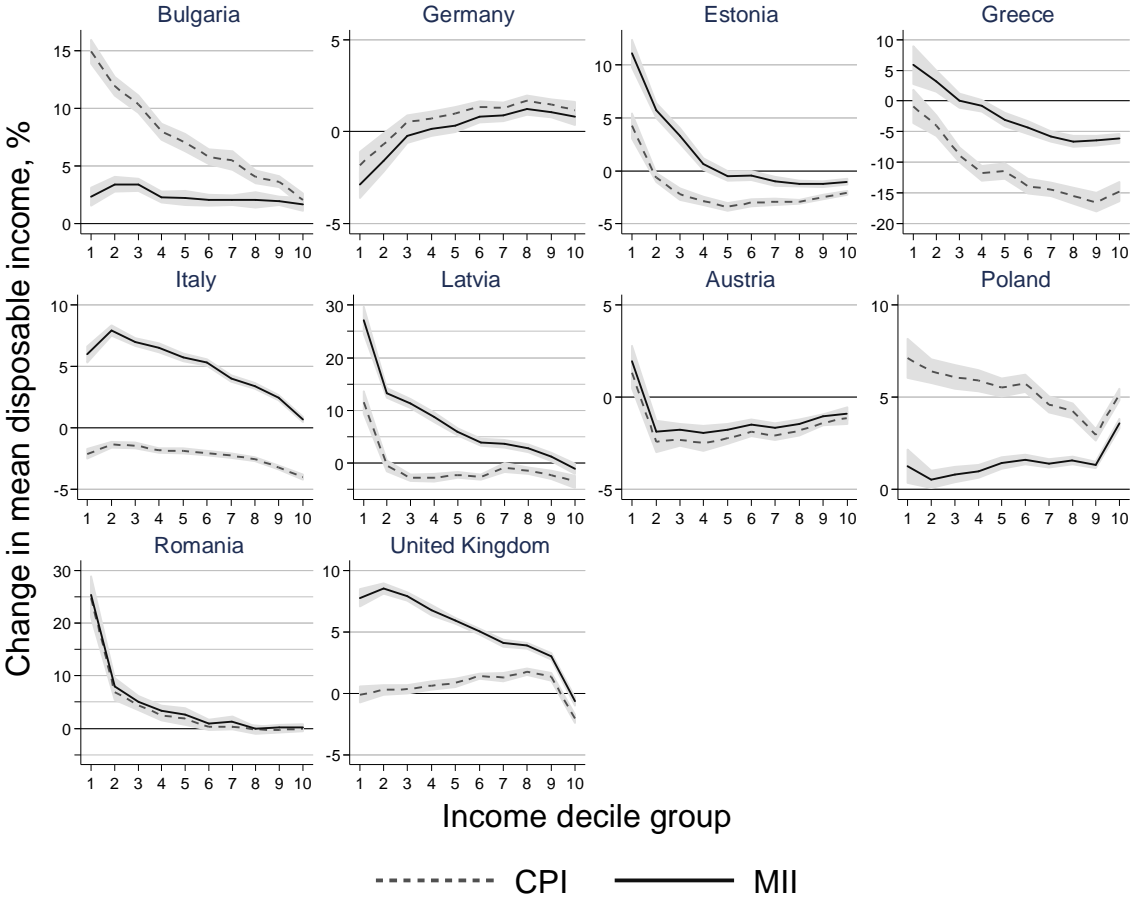
Notes: Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2008 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.
Source: Own simulations with EUROMOD.

In contrast with the overall period, between 2013 and 2014 (Figure 2) the policy effect measured against MII was progressive in Germany but regressive in Bulgaria, the UK, Italy and Latvia. In contrast with the whole period, the policy effect in Greece was positive across the entire distribution of income. Furthermore, despite of falling prices and market incomes, the policy effect in Greece was positive also when measured in nominal terms. Consistent with the policy effect for the total period, policy changes in Estonia and Romania had a large and positive effect, especially for the bottom income decile group.

Figure 2: Percentage change in household disposable income due to policy changes 2013-2014 by household income decile group

Notes: Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2013 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.
Source: Own simulations with EUROMOD.

### Which types of policy made a difference and who was most affected?

To gain understanding of which population groups were most affected and what type of policy contributed to most of the policy effect, we explore changes by age groups and policy instruments.

Figure 3 displays the percentage change in mean disposable income (vertical axis) due to the policy changes across the different age groups of the population (horizontal axis). Individuals are allocated to age groups of 5-year bands. Note that in this analysis household disposable income is pooled across household members (and equivalised); thus, within the same household all individuals are affected equally by the policy effect.

The main finding from Figure 3 is that the elderly have mostly experienced larger gains (or smaller losses) relative to other age groups. Their incomes were eroded only in Germany due to increased tax liability for pensioners (both for CPI and MII counterfactual indexations), as well as in Greece, Italy and Latvia but only against the CPI indexation. In fact, in Greece the policy effect was negative also in nominal terms due to public pension cuts. In Germany, growth in public pensions lagged behind growth in market incomes. The relatively favourable position of elderly reflects the fact that only public pensions are subject to statutory indexation

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on annual basis in many countries (see Appendix 2) and non-pension benefits are typically adjusted on an ad hoc basis, not necessarily each year. The pattern in shorter term is less conclusive as can be seen in Figure 4, which depicts the policy effect between 2013 and 2014.

Figure 3: Percentage change in household disposable income due to policy changes 2008-2014 by age group
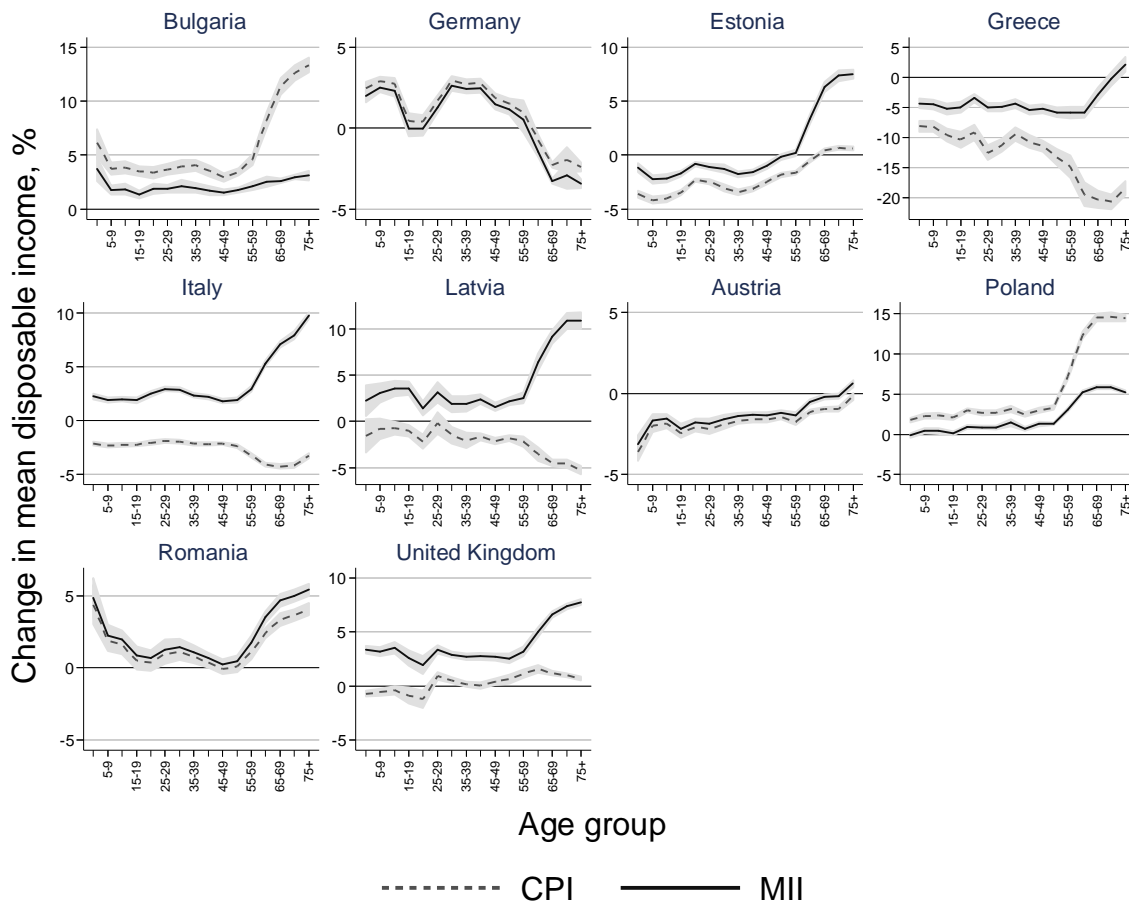
Notes: *Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2008 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.*
*Source: Own simulations with EUROMOD.*

These findings take us to the next question: what type of interventions made most of the difference? To address this, we show the policy effect which is due to changes in public pensions, non-pension benefits and taxes and social insurance contributions. The analysis shows that across countries, governments used different types of interventions to affect household finances or they used the same type of interventions but in a rather different way.

Figure 5 presents the effect of policy changes on the income distribution, broken down by the three policy instruments. The comparison is between the 2008 price-indexed and 2014 policies.

As we previously saw in Figure 1, policy changes measured relative to CPI were regressive only in Germany and the UK. Figure 5 tells us that the regressive nature of policy changes in Germany was driven by non-pension benefits (in fact these are means-tested benefits) as well as income taxes. Although means-tested benefits in Germany increased in nominal terms, they

lagged behind growth in prices and their real value was eroded leading to income losses especially at the bottom of the distribution. The real increase in the tax exemption combined with a real drop in some tax allowances contributed to lower tax liability which, however, favoured more the better-off on the income distribution. In the UK, policy changes (adjusted for prices) were regressive mainly due to the fact that benefit levels did not keep up with inflation. This is only partly counterbalanced by tax cuts mainly driven by the increases in the personal tax allowance, and the regressive nature is reversed at the top of the distribution by increases in top taxes.

Figure 4: Percentage change in household disposable income due to policy changes 2013-2014 by age group
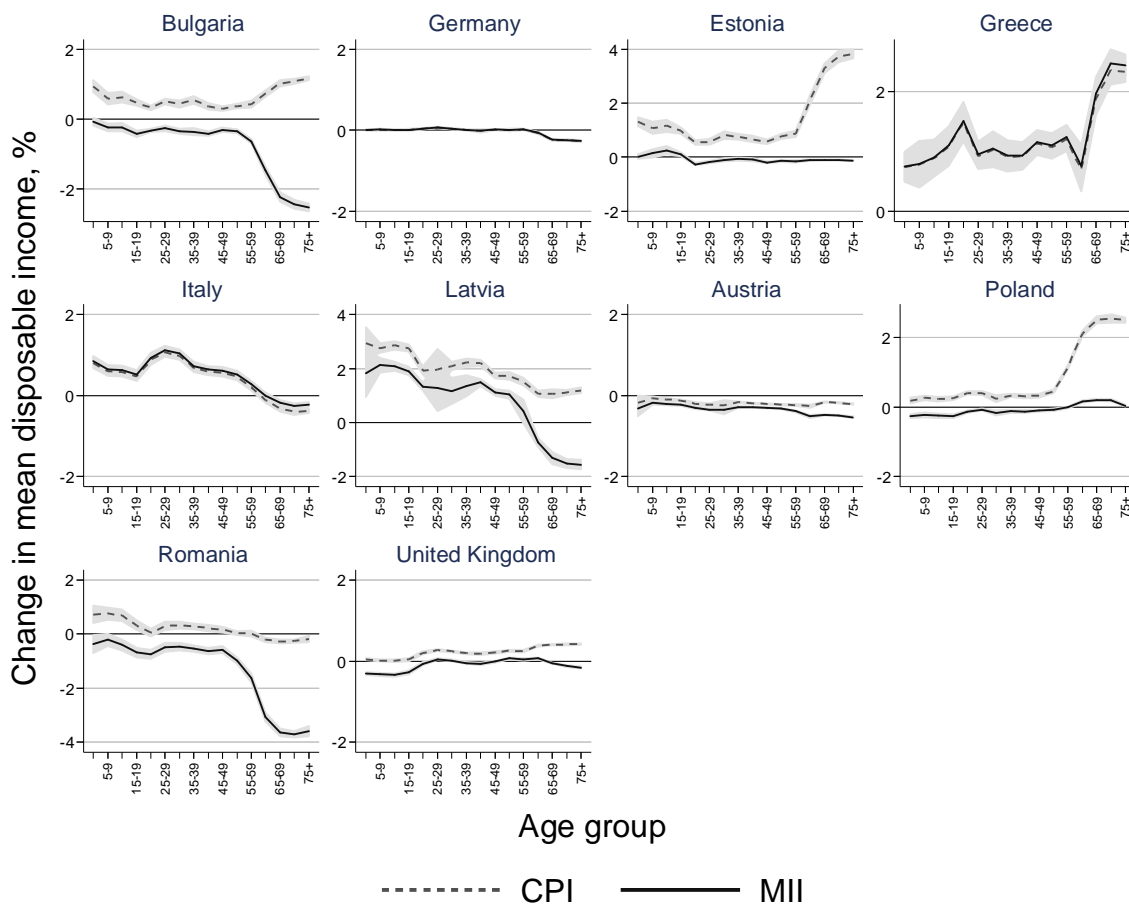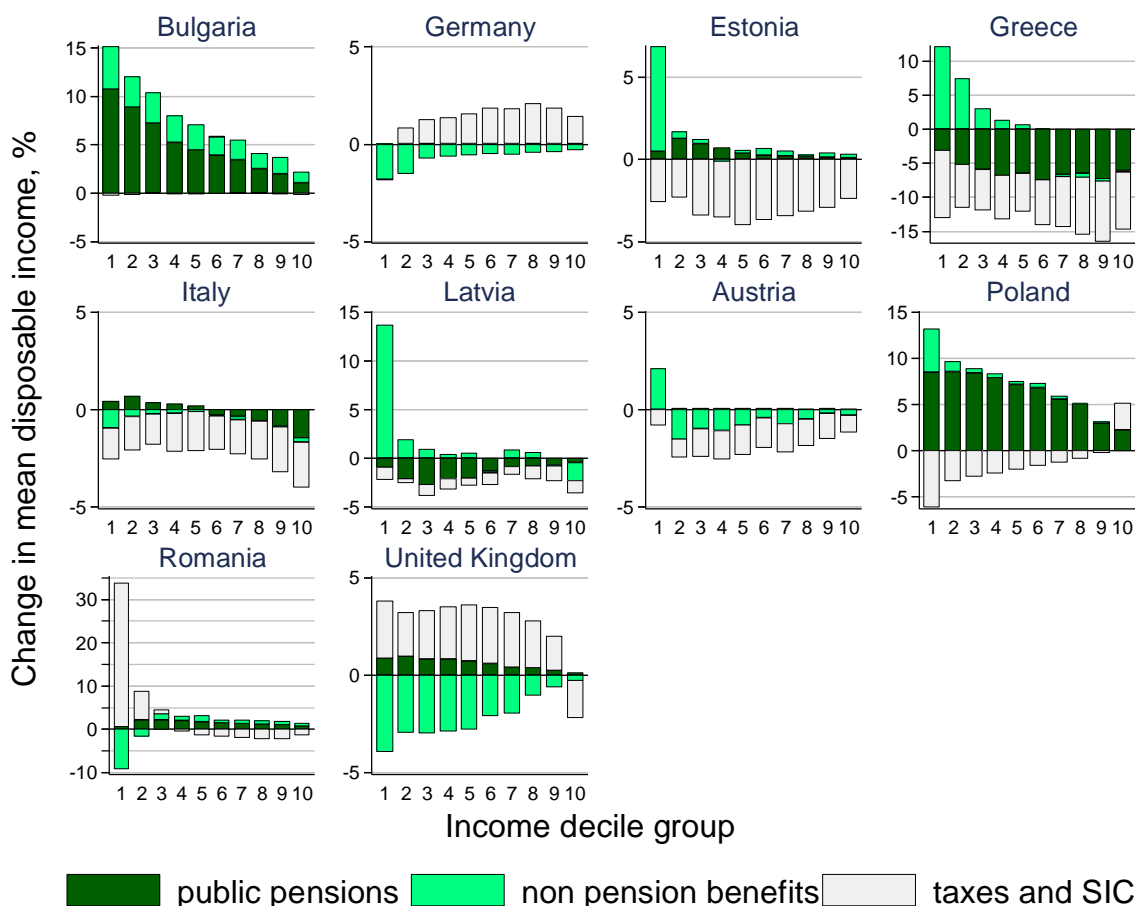

Notes: Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2013 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.
Source: Own simulations with EUROMOD.

The policy changes in the rest of the countries had a progressive character driven by different instruments. Households at the bottom of the distribution saw their incomes rising due to large real increases in non-pension benefits, in particular means-tested benefits, in Greece and Latvia, followed by Estonia and Austria. However, in Austria, where non-means tested benefits remained nominally the same, the erosion of the transfers in real terms led to small but significant income losses. In Estonia, Greece, Italy and Austria, household income fell due to increases in both income tax and SIC. Focusing on income taxes only, in Estonia and Italy, part of the effect was driven by fiscal drag – tax thresholds/allowances lagged growth in prices

which resulted in bracket creep. In Austria, fiscal drag explained the total change in income taxes. In Romania, on the other hand, cuts in social insurance contributions (SIC) mostly benefitted the poor. Nominal cuts in public pensions in Greece also explained a large proportion of the income losses across the decile groups. In contrast, in Bulgaria and Poland, growth in public pensions ahead of prices contributed to most of the income increases across the distribution in 2008-14. In Poland, this counterbalanced the increase in income tax payments.

Figure 6 shows the effect of policy changes on household incomes decomposed by instruments when we compare market-incomes-indexed 2008 with 2014 policies. One of the most striking differences from the previous figure is in the effect of public pensions. Especially in Bulgaria but also in Poland, where market incomes grew faster than prices in 2008-2014, the income increases due to pensions at the bottom decile were around 3 to 5 times smaller than the increase we saw in Figure 5. In Greece, nominal pension cuts are transformed into small pension increases simply due to nominal market incomes falling. In Estonia, Italy and Latvia, where growth in market incomes lagged behind inflation, policy changes in pensions measured against MII indexation resulted in relatively large income increases.
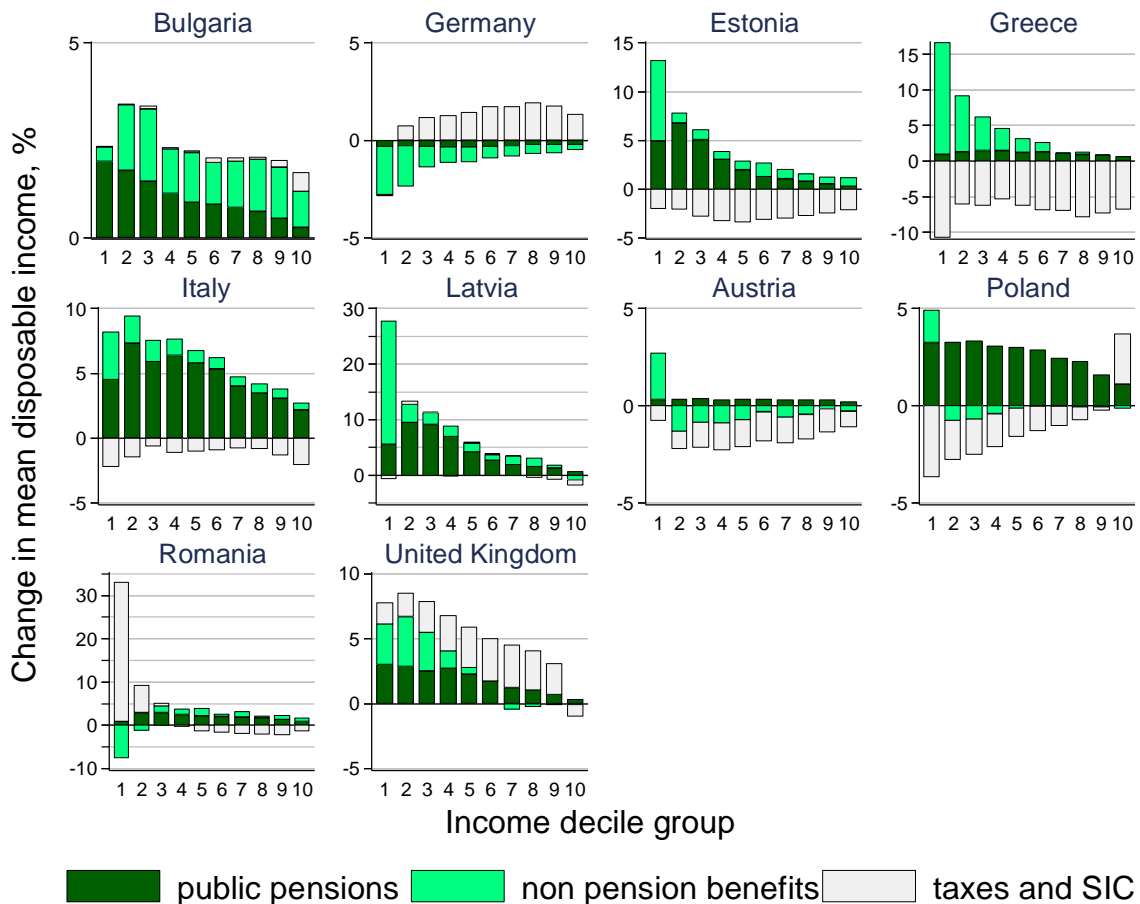
Figure 5: Percentage change in household disposable income due to policy changes 2008-2014 by tax-benefit components using the CPI-indexation

Notes: Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2008 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.
Source: Own simulations with EUROMOD.

Figure 6: Percentage change in household disposable income due to policy changes 2008-2014 by tax-benefit components using the MII indexation

Income decile group

■ public pensions   ■ non pension benefits   □ taxes and SIC

Notes: Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2008 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.
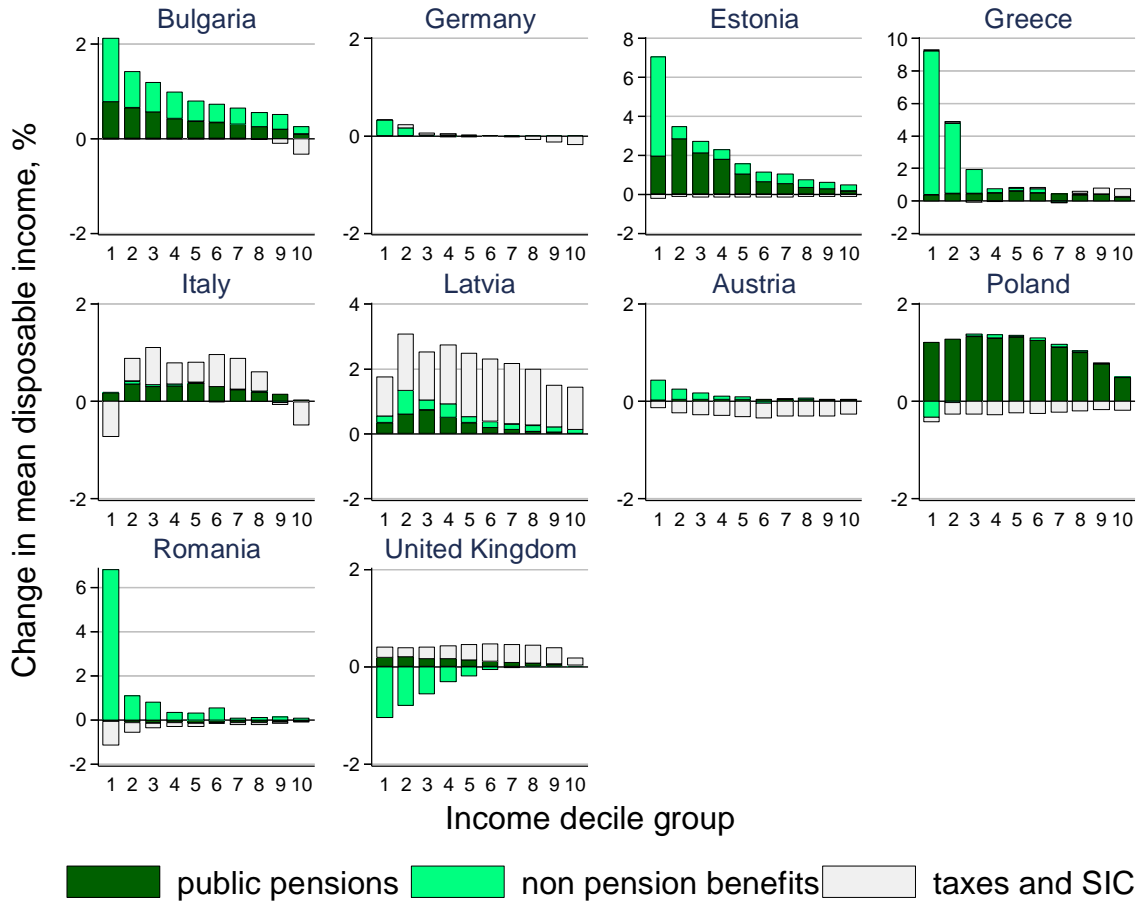*Source: Own simulations with EUROMOD.*

Next, we show the break-down of the policy effect by instruments for the period 2013-2014. Figure 7 presents results for the comparison between CPI-indexed 2013 and 2014 policies. Figure 8 shows results for the comparison between MII-indexed 2013 and 2014 policies.

As noted previously, in contrast to the policy effect in the whole period, the effect of policy changes in 2013-2014 was somewhat different. First, in Germany and Austria policy changes made little difference to household incomes. In Bulgaria but also in Estonia, Greece, Poland and Romania, the positive and progressive policy changes were (almost) entirely a result of public pensions and non-pension benefits rising faster than prices. It should be noted, however, that prices fell in Bulgaria and Greece and the nominal effect of policy changes is somewhat smaller than the real effect. In Italy and Latvia where benefits were driving the policy effect for the whole period, in the last year, 2013-2014 it was mostly taxes explaining the change.

The effect of moving from CPI-indexed or MII-indexed 2013 to 2014 policies is broadly the same because of prices and market incomes growing by similar pace (see Table 1). Thus, Figure 8 yields close results to Figure 7. The differences are in public pensions in Bulgaria, Estonia, Latvia, Poland and Romania, where the effect of pensions on household incomes

became zero or negative. This is explained by market incomes growing slightly faster than prices and public pensions being indexed by prices.

Figure 7: Percentage change in household disposable income due to policy changes 2013-2014 by tax-benefit components using the CPI indexation

Notes: Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2013 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.
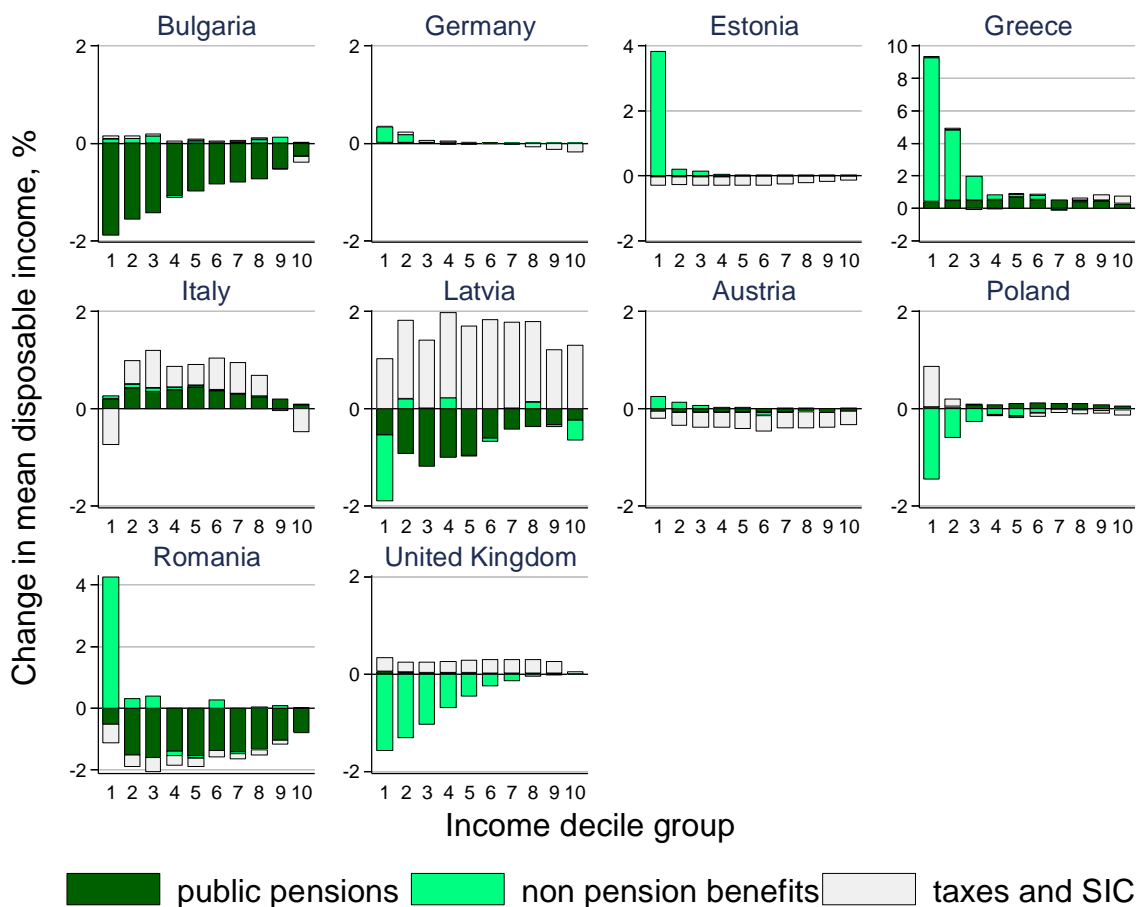*Source: Own simulations with EUROMOD.*

Figure 8: Percentage change in household disposable income due to policy changes 2013-2014 by tax-benefit components using the MII indexation

public pensions   non pension benefits   taxes and SIC

Notes: Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2013 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.
*Source: Own simulations with EUROMOD.*

Including changes in VAT

Next, we examine how government choices, in terms of indirect taxation, have affected household finances. We focus on the main instrument for indirect taxation, i.e. Value Added Tax (VAT). Using estimates derived from Household Budget Surveys, we calculate the change in the average VAT payment as percent of household disposable income across the income decile groups. Figure 9 is identical to Figure 1 in showing the policy effect on the income distribution. In addition, it also plots the percentage change in mean disposable income due to changes in the VAT payments. Note that VAT results do not depend on a counterfactual indexation as they are based on changes in the VAT percentage rate. In Bulgaria, Germany and Austria VAT rates have remained the same. In all other countries VAT rates have increased between 2008 and 2014. In all countries considered, VAT rates remained constant between 2013 and 2014.

Figure 9 reveals two important findings. First, without any exception, the effect of VAT changes on household finances has not only been negative – households have seen their tax liability increasing – but also regressive – increase in VAT payments has hit the bottom decile group hardest. Second, the regressive nature of VAT changes is in strong contrast to the

overall progressive nature of direct tax and benefit policy changes. If we return to Figure 5 and Figure 6, we can also compare changes to VAT strictly with changes to direct taxation and social contributions. In about half of the countries, changes in the latter have been progressive.

Figure 9: Percentage change in household disposable income due to policy changes 2008-2014 by income decile groups: income-related policy changes vs VAT changes
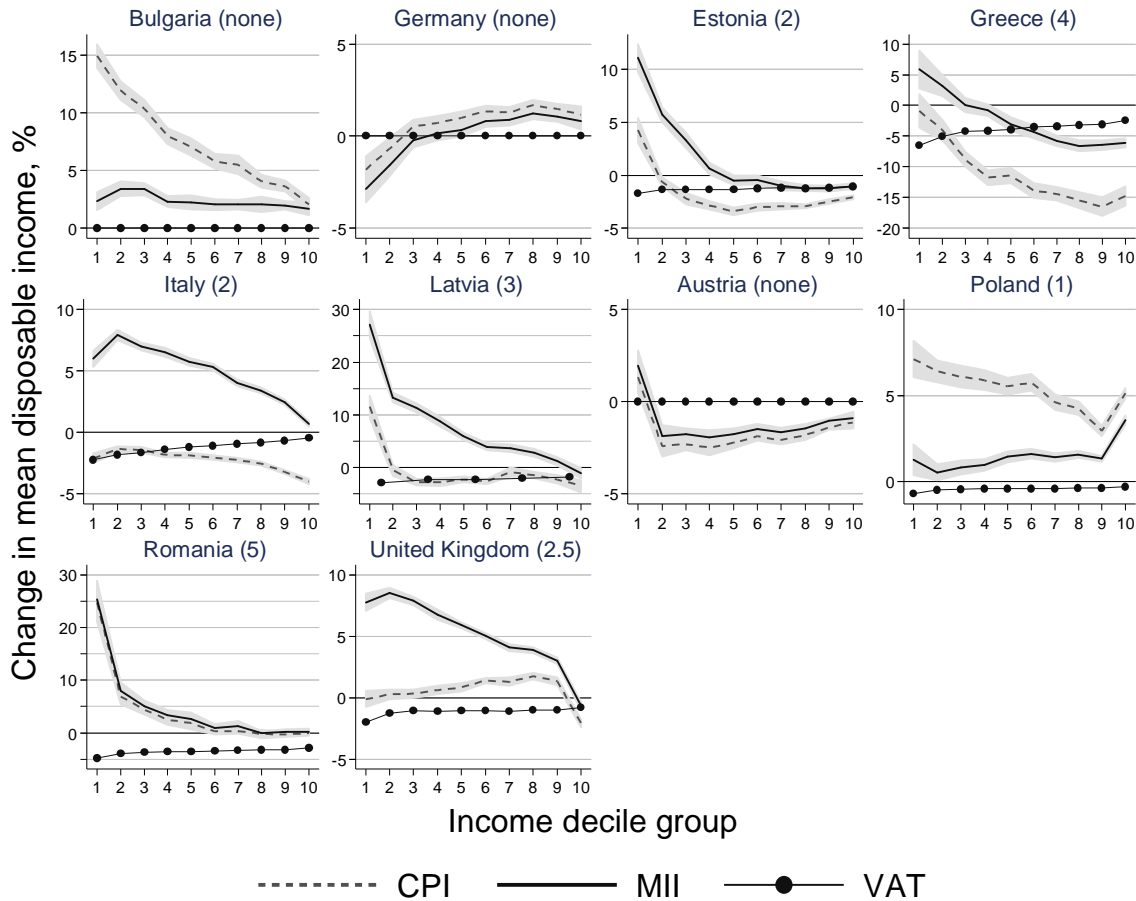
Notes: Deciles are based on equivalised counterfactual household disposable income in 2014, i.e. with 2008 policies in place, indexed by one of the two counterfactual indexes. Change is measured as a percentage of mean counterfactual income in 2014. Shaded area shows 95% confidence intervals. The charts are drawn to different scales, but the interval between gridlines on each of them is the same.
Source: Own simulations with EUROMOD and own calculations based on Barnard (2010), Matsaganis and Leventi (2013), Taddei (2012) and Võrk et al. (2008).

4. Concluding remarks

The recent economic crisis has highlighted the importance of the distributional design of fiscal policies in promoting economic growth. This paper estimates the direct effect of tax-benefit policy changes in 2008-2014 on the income distribution, poverty and inequality levels in 10 EU countries, tracking fiscal policy developments through the Great Recession and their immediate impact on household incomes. In addition, we pay close attention to the most recent trends by separately evaluating policy effects in the latest year, 2013-2014. We identify and quantify these first-order effects using microsimulation techniques to construct relevant counterfactual scenarios.

Despite of challenging economic problems in this period, most of the countries under consideration have managed to pursue tax-benefit policies without adverse distributional

effects. Positive effect were even achieved in several countries (Bulgaria, Estonia, Greece, Latvia) where the total effect of 6 years of policy changes has resulted in up to a 2-3 percentage point decline in the headcount poverty ratio. It is primarily in Germany and, partly, the UK and Poland, where the policy-induced poverty and inequality measures show increases for the period as a whole. In terms of trend, the UK is a more serious case as indicators showed an increase also in the latest period (2013-2014).

Overall positive distributional developments have been accompanied by reductions in household income. Tax-benefit policy changes in Greece, leading to the largest reduction in poverty and inequality levels in the whole period, also lowered the average household income by 13% in real terms and 4% relative to market incomes (despite the latter itself falling nearly 20% on average). Average disposable income also decreased due to policies in Estonia, Italy, Latvia and Austria although the magnitudes were much lower compared to Greece. 2013-2014 policy changes, however, are starting to reverse that trend.

Improvements in distributional indicators are mostly related to the progressive effects of (increased) public pensions and increased support for low income families (in particular in Estonia, Greece, Latvia as well as in Romania in the last period). The UK also features tax increases targeted very narrowly at the top of the income distribution, while all other income decile groups have benefitted from tax/SIC changes. On the other hand, there are few cases of clearly regressive policy changes: erosion of non-pension benefits in Germany and the UK; tax cuts in Germany and tax increases in Poland.

A key general lesson is that regular indexation is important. While public pensions are subject to statutory indexation in nearly all European countries (European Commission, 2012), comprehensive legislated indexation rules for non-pension (and non-contributory) benefits as well as for tax/SIC bracket thresholds are much less common. As we have shown, this bias is well illustrated when the effects of policy changes are estimated by age groups – the position of elderly people relative to other population groups has improved considerably in the whole period for around half of the countries under consideration here. As we have also demonstrated, whether governments index nominal tax-benefit parameters and how they do it may not be of much importance for analysing effects of policy changes in a particular year – especially at the times of low earnings growth and price changes as Europe is experiencing now. However, even if such effects are small in annual terms, they can quickly accumulate over time and lead to a large snowball effect at which point it becomes much more challenging to tackle them if necessary. To avoid (large) fiscal drag and benefit erosion, it is important to adjust monetary tax and benefit parameters on a regular basis.

Our analysis has focussed on income-related (cash) measures, but it could well be the case that in parallel, countries may have scaled back spending on public employment and/or wages as well as public services such as education, health and social care, childcare and subsidised housing and transport – all of which are likely to have substantial distributional consequences too. And there may have been changes in consumption taxes, which can have large offsetting impact with respect to personal taxes and cash benefits – we have demonstrated this specifically for VAT changes.

Fiscal measures can be also expected to shape employment and the distribution of market income, which are outside the scope of this paper too. But before one can proceed with evaluating behavioural changes, it is important to have a clear view on how to measure first-order static effects, i.e. what constitutes an appropriate indexation benchmark. Furthermore, changes in market income and population structure themselves influence the household income distribution and it is necessary to contrast these with the (pure) policy effects to fully

understand if the latter have been adequate. This can be studied once more recent micro-data become available.

On a final note, our paper represents a comparative analysis, taking a broader view across countries and aims at identifying common trends and major divergences. This inevitably limits the scope for discussing specific findings at the country level, with greater attention to its economic and political context. However, we hope that our study will have succeeded in drawing attention to particular policy changes and features warranting a deeper analysis and, in turn, leads to country-specific studies to follow.

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Appendix 1: Description of micro-data sources

Table 6: Summary of input datasets

Country		Input dataset	Income reference period	Sample size (households)	Sample size (individuals)
Austria	AT	National SILC 2010	2009 (annual)	6,188	14,085
Bulgaria	BG	EU-SILC 2010	2009 (annual)	6,162	16,291
Germany	DE	EU-SILC 2010	2009 (annual)	13,079	27,906
Estonia	EE	EU-SILC 2010[a]	2009 (annual)	4,972	13,474
Greece	EL	EU-SILC 2010[a]	2009 (annual)	7,005	17,611
Italy	IT	National SILC 2010	2009 (annual)	19,147	47,420
Latvia	LV	EU-SILC 2010	2009 (annual)	6,255	15,313
Poland	PL	EU-SILC 2010[a, b]	2009 (annual)	12,930	37,225
Romania	RO	EU-SILC 2010	2009 (annual)	7,718	18,347
UK	UK	FRS 2009/10	2009/10 (monthly)	25,200	57,380

[a] Includes selected national variables, added with the permission from the respective national statistical office.
[b] Microsimulation SILC indicator dataset complementing the Polish UDB SILC database was provided for the purpose of income source identification in EUROMOD by the Polish Central Statistical Office.

Appendix 2: Indexation of public pensions 2008-14

- **Austria**: Statutory indexation by inflation (CPI).

- **Bulgaria:** Indexation up until 2013 has been defined by expert estimates on a year-by-year basis. Overall, pensions in the period between 2008 and 2013 grew faster than inflation. Since 2013, a new indexation rule has been introduced based on a weighted average of CPI and growth in the employment contributory base. (As the indexation factor is difficult to determine, growth in the average pension has been assumed in the model.)

- **Germany:** Old age pensions are adjusted annually based on a combination of the gross wage growth and a stabilisation factor taking dependency ratio into account. (As the indexation factor is difficult to determine and does not always go in line with earnings growth, it is assumed for simplicity in the model that pensions grow with CPI.)

- **Estonia**: Indexation takes place in April and is based on a weighted average of CPI (20%) and wage growth (80%) in the previous year with a further condition ruling out nominal pension decreases. Since 2009, the indexation factor can be lower than the weighted average in the case of negative (or low) economic growth, and smoothing over 5 subsequent years is required if the actual factor has been higher or lower than the raw index.

- **Greece**: No statutory rules; in practice, pensions were frozen in 2008-14 and subject to structural cuts (see Appendix 3).

- **Italy:** 2008-11 indexation mainly by prices ("FOI index"). Full indexation up to some level of pension; then up to 90% and 75% of price increase; 2012-2013: frozen above three times the minimum level of public pension (around 1,400 euro per month in 2012). Partial indexation of pensions above three times the minimum amount since 2014. In particular, partial indexation at 90%, 75% or no indexation depending on the pension level.

- **Latvia:** 2008 indexation by a weighted average of CPI and (real) wage growth; 2009-2013 frozen (temporarily). In 2013 indexation took place in September, while in 2014 it took place in October. In both years indexation takes into account in different proportion CPI and real wage growth in the previous calendar year.

- **Poland:** Indexation factor is determined as CPI + 20% of real income growth.

- **Romania**: No statutory rules before 2013; in practice, large increases in some pensions in 2008-9 and no indexation in 2010-12; 2013 and 2014 indexation by a weighted average of CPI and average wage growth.

- **UK**: Basic state pension: 2008-10 indexation by prices ("RPI" which tended to be higher than CPI); 2011 above inflation increase; 2012-14 "triple lock" (best of 2.5%, prices or earnings). Earnings related pensions (public and private): indexed by RPI (up to 2011) then CPI.

Appendix 3: Policy developments in 2008-2014

<u>**Austria**</u>

Direct taxes and contributions

- Social Insurance Contributions employees: rate for health for freelancers and agricultural workers introduced in 2013; in 2013, increase in the rate for health for blue and white collar workers; increase in the different thresholds used to calculate the contribution for unemployment; increase in the minimum and maximum thresholds for the contributory base.

- Social Insurance Contributions for self-employed: between 2008-2013, an increase in the rate for old-age for self-employed and between 2008-2014, an increase in the rate for old-age for farmers; increase in the amount paid for accident by non-farmers; increase in the minimum and maximum thresholds for the contributory base.

- Social Insurance Contributions for pensioners: in 2013 and in 2014 an increase in the rate for old-age; increase in the minimum and maximum thresholds for the contributory base.

- Income tax: in 2009, a reduction in the third and fourth marginal income tax rates and an increase in the last tax threshold; an increase in the pensioner's tax credit in 2011 and an additional tax credit for pensioners introduced in 2013; a progressive schedule for the tax on special payments introduced in 2013.

Benefits and tax credits

- Child benefit (Familienbeihilfe): used to be paid out 13 times a year (2008-2010). Since 2011 the benefit is paid only 12 times a year and the 13th payment has been replaced by a bonus for school start. In 2011, reduction in the maximum age for the child (from 26 to 24); basic amounts kept nominally the same between 2008 and 2013; an increase in 2014. The child tax credit is paid out together with the child benefit. The credit was always only paid out 12 times a year, 2008-2010: 50.90, since 2011: 58.40.

- Unemployment benefit (Arbeitslosengeld): an increase in the minimum and maximum amounts of the benefit.

- Unemployment assistance (Notstandshilfe): an increase in the benefit amount.

- Child care benefit (Kinderbetreuungsgeld): in 2010, a supplement for 2+ children introduced. Changes in the design of the benefit – since 2008: 3 types (30+6, 20+4, 15+3), 2010: 5 types (plus: 12+2 and income dependent type). 2009: changes in the childcare benefit top-up, since 2010: new version for lone parents and parents with low income. Benefit amounts kept overall the same.

- Social assistance (Sozialhilfe): replaced by the minimum income benefit in 2010/2011[9] – an increase in the housing allowance rates, standard rates for children and working-age individuals.

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[9] The minimum income benefit was introduced in all Federal States between September 2010 and April 2011 and replaced the social assistance scheme. A harmonisation in the benefit rules across Federal States was increased. However, in EUROMOD the benefit according to the rules in Vienna is simulated and changes between-states are not captured.

Bulgaria

Direct taxes and contributions

- Social Insurance Contributions for employees: gradual decrease of the rate for old-age pension between 2008 and 2011, no change since 2011; increase in the rate for health in 2009, but no change since then; increase in the maximum contributory income in 2013 as well as in 2014.
- Social Insurance Contributions for self-employed: a decrease in the rate for old-age between 2008 and 2010, an increase in 2011 but kept the same since then; an increase in the rate for health in 2009 which has remained the same since then; increase in the minimum contributory income in 2009 and 2010, but kept nominally the same since then; increase in the maximum contributory income in 2013 as well as in 2014

Benefits and tax credits

- Unemployment benefit (обезщетение за безработица): an increase in the minimum benefit amount between 2008 and 2011, kept nominally the same since then; an abolition of the upper limit in 2011; an increase in the period over which past SIC contributions are considered (between 2011 and 2013).
- Contributory maternity benefit for bringing up a child up to age of 2 (обезщетение за отглеждане на дете до 2г.): an increase in the period over which past SIC contributions are considered (between 2011 and 2013).
- Contributory maternity benefit for pregnancy and childbirth (обезщетение за бременност и майчинство): an increase in the qualifying period (in 2009) and the period over which past SIC contributions are considered (between 2011 and 2013); increase in 2009 in the maximum benefit receipt.
- Guaranteed minimum income (помощ за социално подпомагане - гарантиран минимален доход): increase in 2010 in the Guaranteed Minimum Income level used for determining the benefit amount (i.e. making the benefit more generous), but no change since then.
- Heating benefit (целева помощ за отопление): increase in 2013 in the Heating Differential Minimum Income thresholds used in determining eligibility for the benefit (i.e. making the income-test higher); gradual increase in the benefit amount.
- Means-tested child benefit (месечна помощ за отглеждане на дете): increase in the income-threshold in 2009 and no change since then (the change also affects the other income-tested family benefits); increase in the benefit amount in 2009, no change between 2009 and 2013 and another increase in 2014.
- Child benefit for education (целева помощ за ученици): increase in the benefit amount in 2013.
- Non-means tested child benefit for mothers in tertiary education and non means-tested child benefit for twins: introduced in 2009; no change in the benefit amounts in the period.
- Social old-age pension: gradual increase in the benefit amount.

Germany

Direct taxes and contributions

- Income Tax: decrease in the nominal levels of tax allowances for elderly persons and pensions for civil servants. In 2010, the tax allowance for special expenses has been reformed leading to an increase in the value of the allowance; kept nominally the same since 2011 Other tax allowances (for agriculture and forestry, single parents, children) kept

nominally the same. Increase in the level of the basic tax free allowance. Increase in the taxable fraction of income from private pensions (Ertragsanteil).

- Tax on capital income (Abgeltungssteuer): Up until the end of 2008, income from capital and income from employment were taxed at the same rate. Since 2009, a final withholding tax on capital income has been implemented, with a flat tax rate of 25% on capital income exceeding an allowance that is collected at source. This reform has mainly affected the bottom of the income distribution and the elderly.

- Social Insurance Contributions (SIC) between 2008 and 2013:

  - SIC paid by self-employed: decrease in the contribution rate paid for statutory pension and health insurance

  - SIC paid by employees: slight fall in the contribution rates – lower rate for pension insurance and higher rate for long-term care and unemployment insurance.

  - SIC paid by pensioners: Increase in the contribution rate for statutory long-term care insurance for pensioners; however, the average contribution to private health insurance has remained nominally constant.

  - SIC for self-employed: decrease in the contribution rate paid for statutory pension and health insurance.

  - No differences in SIC between 2013 and 2014.

Benefits and tax credits[10]

- Child benefit (Kindergeld): Children have to be younger than 25 (27 in 2008) to be eligible for the benefit; from 2009 on an additional rate has been introduced for the fourth child onwards. No differences in the rates between 2013 and 2014.

- Education benefits (BaFöG): In 2009 benefit add-on has been introduced for parents. No differences in the rates between 2013 and 2014.

- Unemployment benefit II (Arbeitslosengeld II): increase in the basic rate and means-test.

- Long-term care benefits from statutory insurance (Pflegegeld): increase in the benefit level.

- Parental leave: since 2011 change in the assessment of the above-minimum benefit level

- Housing benefits: In 2009, the parameters determining the benefit amount were raised by 8%. From January 2009 to December 2010 heating costs were included in the calculation of the benefit amount (thereby raising the benefit amount for recipient households), and were removed from the calculation from January 2011 (thereby lowering the benefit amount for recipient households).

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[10] A childcare benefit (Betreuungsgeld) has been introduced in August 2013. However, the benefit is neither captured in the EUROMOD simulations nor in the SILC 2010 data.

Estonia[11]

Direct taxes and contributions

- Employer and employee unemployment insurance contributions: increase in the rates (0.3%+0.6% in 2008 vs 1%+2% in 2013-14).

- Pension and health insurance contributions: increase in the minimum levels (€172 in 2008, €290 in 2013 and €320 in 2014).

- Income tax concessions: the narrowing of eligibility conditions for income tax child allowance in 2009; reductions for deductible expenses; general tax allowance kept constant in nominal terms in 2008-14 (€1,728); pension allowance increased in 2014.

Benefits and tax credits

- Universal (non-contributory) family benefits kept nominally the same in 2008-14, except the child allowance which saw the rate for families with 3+ children increased in 2014.

- Child school allowance: abolished in 2009.

- Childcare allowance: the narrowing of eligibility conditions in 2009.

- Introduction of a means-tested family benefit on 1st July 2013 (hence included among the 2014 policies in the model but not for 2013).

- Unemployment insurance benefit: increase in the minimum level.

- Social assistance benefit: increased (€64 in 2008, €77 in 2013 and €90 in 2014).

Greece

Direct taxes and contributions

- Social Insurance Contributions (SIC):

  – Employee unemployment insurance contributions increased in 2012 (+0.5%); all contributions increased for liberal professionals working as self-employed (i.e. doctors, lawyers, engineers); an additional 2% solidarity contribution for civil servants; flat rate unemployment contributions for the self-employed introduced; upper earnings threshold for the calculation of SIC employees first insured before 1993 increased. In 2013 contributions for sickness insurance were increased for farmers.

  – Introduction of 'Pensioners' Solidarity Contribution'(2010), i.e. a special tax on main pensions, with tax rates between 3% for pensions above €1,400 per month to 14% above €3,500 per month.

  – Introduction of 'Additional Pensioners' Solidarity Contributions' for pensioners below 60 with main pensions exceeding €1,700 per month, with rates between 6% and 10%.

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[11] In addition, there are the following changes which are not (fully) simulated: female pension age increased from 61 to 63; cuts in minor benefits (additional childcare leave for fathers and compensation of study loans abolished, sickness benefit and severance pay reduced, and the eligibility for dental care benefit narrowed); the abolition of tax deduction for donations and trade union membership fees. The indexation of public pensions was also changed (allowing in the case of nominal wage decreases or low economic growth to apply lower indices in subsequent years) though the effect of this is not explicitly captured with the way we define our counterfactuals.

- Introduction of 'Pensioners' Solidarity Contribution on Supplementary Pensions', all supplementary pensions are subject to an additional tax, between 10% for pensions up to €250 per month and 20% for pensions exceeding €300 per month.

- Employers' contributions for sickness insurance and other benefits were reduced in June 2014 (-0.55% and -1.25% respectively). Employers' and employees' contributions for family benefits (1% respectively) were abolished.

- Contributions for supplementary pension for banking employees, civil servants and public enterprise workers were unified for people first insured before and after 1993. The new rate is equal to 3%.

- Taxes on Pensions: Since 2012 all main old-age pensions exceeding €1,300 are subject to 12% taxation. The tax rate applies to the pension amount exceeding €1,300 after the deduction of all solidarity contributions concerning main pensions. Pensions are not allowed to fall below €1,300. Since 2013 if the sum of main and supplementary pensions exceeds €1,000 they are subject to additional taxation varying from 5% to 20%.

- Income Tax: The 2013 reform introduced major amendments to personal income tax. A new tax schedule with three tax brackets was introduced for income deriving from employment and pensions. Self-employment income is taxed by a separate tax schedule with two tax brackets. Different tax schedules for farming income (13% flat tax[12]) and rental income (two tax bands[13]) were introduced. The zero tax bracket was abolished. However, an employment tax credit was introduced (see below).

- Interest income tax: The rate was increased by 5ppt in 2013.

- 'Solidarity Contribution': Introduction (in 2010) of a tax paid by individuals with net taxable incomes exceeding €12,000 per year, with rates varying from 1% to 4%.

- Emergency Property Tax: all persons who own commercial or residential property in Greece are subject to this tax. It 2014 emergency property tax was replaced by the 'Unified Property Tax'. In addition to commercial and residential properties, land is also subject to the latter.

- Additional tax on rental income: abolished in 2014.

- Self-employed and liberal professions contribution: a special levy on self-employed and liberal professions aged less than 63 set at €650 per year.

Benefits and tax credits

- Retirement Benefits: Until 2009 retirement benefits were paid 14 times per year. In 2013 they are paid 12 times per year, with the exception of invalidity pensions.

- Unemployment Insurance Benefit: reduced by 22% in 2012 (i.e. to €360 per month).

- Unemployment assistance for older workers: In 2013 the income threshold was raised from €5,000 to €12,000 per year. In 2014 it fell to €10,000 and the age limits were increased from 45-65 to 20-66.

- Third child benefit, lump sum €2,000 birth grant and lifetime pension for mothers of many children: each benefit abolished in 2013.

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[12] The flat tax started to apply in 2014. In 2013 farmers were taxed according to the tax schedule used for income deriving from employment and pensions.

[13] In 2014 the tax rate of the first band was increased from 10% to 11%.

- Large family benefit: Became means-tested in 2013.

- Child benefit: Introduced in 2013.

- Social pension: 13th and 14th month payments were abolished in 2013 and the age condition was raised to 67 (from 65).

- Rent subsidy: Suspended.

- Tax Credits: An employment income tax credit was established. The tax credit is equal to €2,100 if employment income is up to €21,000 per year. It is capped to the amount of people's actual tax liability (i.e. no negative tax applies). The tax credit is decreased by €100 for each additional €1,000 of employment income over €21,000 (it becomes zero for people with employment income over €42,000 per year). Tax credits for rent, education expenses, mortgage interest, private insurance contributions, and installation of eco-friendly energy systems were abolished. Disability tax allowance was turned into a tax credit. In 2014 the taxable income threshold above which certain benefits are also taxed fell from €30,000 to €10,000 per year.

- Social dividend: provided in 2014 as a lump-sum to low-income families and vulnerable population categories.

- Pensioner's social solidarity benefit: in 2014 the age limit was raised to 65 (from 60).

Italy

Direct taxes and contributions

- Social Insurance Contributions (SIC):
  - SIC paid by employees (and employers): increase in the rates paid by temporary workers.
  - SIC paid by self-employed: increase in the rates; increase in the minimum contribution threshold applied on earnings – the increase is larger than CPI and MII.

- Tax on rental income: Since 2011, a fixed rate of 21% applied on rental income introduced (before rental income was part of the tax base of the progressive income tax: generally it represents a tax advantage for most of tax payer).

- Property tax: 2008-2011 (ICI: property tax on other residences (i.e. not main residence); 2012: IMU, new property tax on main residence and other residences. 2013: IMU only on other residences. 2014: new Tax on housing services on both main residence and other residences.

- Additional solidarity contributions: Introduced in 2012. **3%** of taxable income above 300.000 euro per year. Deductible from PIT.

- Income tax: Tax allowances, deductions and credits are kept nominally constant over the period.
  - Increase of tax credits for dependent workers in 2014.
  - Reduction of fiscal burden on labour income («bonus of 80€ per month») for dependent workers with taxable income below 26.000 € per year

- Regional personal income tax: increase in the rates in most of the regions.

- Tax on capital incomes: Decrease in the tax rate for deposits (from 27% to 20%), but increase in the tax rate for other bonds and dividends (from 12.5% to 20%) in 2012. Increase of tax rate on Dividends, Bonds (if not State Bonds) and deposits from 20% to 26% in 2014.

Benefits and tax credits

- Regular Unemployment Benefit: Replaced by a relatively more generous scheme (in terms of coverage and adequacy) in 2013.

- Social Allowance for Elderly: Increase in the level of the allowance, which exceeds the growth in market incomes and prices.

- Family Allowances (Assegni familiari): The benefit amounts have been kept nominally constant while the bands applied on the income of the benefit unit used to define benefit amount have grown with a higher rate than CPI and MII.

- Public Pensions:
  - In 2012, pensions above 90,000 euro per year are subject to a proportional cut (5% between 90,000 and 150,000 euro per year, 10% between 150,000 and 200,000 euro per year, 15% above 200,000 euro per year). Abolished in 2013.

  - In 2014, new Solidarity contribution (6% between 14 and 20 times the minimum; 12% between 20 and 30 times the minimum; 18% above 30 times the minimum;)

  - No indexation of pensions above three times the minimum amount (approximately 1400 euro per month in 2012) since 2012. Partial indexation of pensions above three times the minimum amount since 2014.

Public salaries

- Cut of public salaries (5% between 90,000 and 150,000 euro per year, 10% above150,000 per year). Abolished in 2013.

- No indexation of public salaries

Latvia[14]

Direct taxes and contributions

- Compulsory social insurance contributions: an income ceiling removed. In 2014 it is introduced again (at the higher level than before).

- Employee and self-employed social insurance contributions: rates and base increased. In 2014 SIC rates are slightly decreased for all groups.

- Personal income tax:
  - Standard rate for employment income reduced by 1pp; tax exemptions reduced.

  - Personal tax allowance reduced, while tax allowance for dependents increased. In 2014 both personal tax allowance and allowance for dependents are increased.

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[14] In addition, there are the following changes which are not (fully) simulated: an increase in female pension age; extension of the property tax to residential houses; reduction of property tax for large families; introduction of a ceiling on sickness benefit. In 2014 pension age for both men and women are increased by 3 months. Minimum wage is increased.

– Rate for self-employment income: increased from 15% to 24%.

- Income tax on dividends: introduced.

Benefits and tax credits

- Public pensions: frozen (from 2009 to 2012). Indexation is resumed in September 2013.

- State family benefit: reduced and eligibility conditions narrowed.

- Child birth benefit: reduced.

- Contributory benefits: introduction of a ceiling on unemployment benefit; maternity, paternity, and parental benefits.

- Unemployment benefit: duration extended and qualifying working period reduced.

- Maternity benefit: reduced.

- Parental benefit: eligibility limited to non-working parents only; minimum amount increased. Since 2014 also working parents can receive the minimum amount.

- Childcare benefit for non-employed parents increased.

- In 2014 the minimum amount of parental and childcare benefits is increased again.

- Social assistance benefits: basic amount increased and duration extended.

- Social security benefit for disabled from childhood increased.

Poland

Direct taxes and contributions

- Social Insurance Contributions

   – SIC of employed workers: decrease of both employee and employers' disability contribution rate in 2008; increase of disability contribution rate paid by employers from 2012; decrease of accident contribution rate from 2010 and increase in 2013.

   – Self-employed SIC: decrease of disability contribution rate in 2008 and later increase in 2012, annual indexation of contribution base.

   – Farmers SIC: annual indexation of amount paid per square unit of land for disability, retirement, illness and accident contribution. Since 2010 there had been implemented five multipliers depending on size of a farm. Since 2012 health insurance contributions are levied on farmers.

- Income tax:

   – Individual taxation: reduce tax rates. From 2009 the low and medium tax band have been merged into one single band and taxed at 18% rate, while the high income tax rate was lowered to 32% (compared to 19%, 30% and 40% in 2008)[15];

   – Joint taxation: income tax rates also reduced in a similar way as for the individual taxation to 18% and 32% from 2009;

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[15] Income thresholds in 2008 were PLN 43,405 and PLN 85,528. From 2009 there is only one income threshold: PLN 85528.

- From 2013 internet expenses allowance is confined to the group of those taxpayers who have not used this allowance for more than two years[16];

- Reforms of Child Tax Credit from 2013:

  - Income criterion for parents of only one child,;

  - Taxpayers entitled to child tax credit can deduct additional amount proportional to the Universal Tax Credit amount for the third, fourth and any subsequent dependent child;

  - Implementation of Refundable Child Tax Credit: those parents who pay SIC and health insurance are eligible to a top-up of CTC limited to the amount of their contributions.

  - Increase of CTC values paid per third, fourth and any subsequent child.

Benefits and tax credits

- Family Allowance increased amount per child in 2009 and in 2012, threshold raised in 2012 and 2014;

- Child Birth Allowance became a means-tested benefit in 2013.

- Nursing Allowance for parents voluntarily on leave to take care of a disabled child and not receiving unemployment benefit or pre-retirement pension becomes non-means-tested benefit from 2010. The benefit amount increases in 2010 and it almost doubled in 2014; between 2011 and 2014 a temporary increase was also introduced.

- A special Nursing Allowance introduced in 2013 addressed to individuals who resign from employment or other paid job in order to take care of a dependant relative.

- Social Assistance: income thresholds for both temporary and permanent social assistance were increased in 2014. Amount of permanent social assistance raised in 2012.

Romania

Direct taxes and contributions

- Social Insurance Contributions (SIC):
  - SIC paid by employees: Increase in SIC, but an upper limit has been introduced in 2011.
  - SIC paid by self-employed: increase in the rate paid for pension and sickness insurance.
  - SIC paid by active population and pensioners: reduction in the health SIC.

- Income Tax: Tax allowances for pensioners and employees have been kept constant; increase in the deduction for private pension contributions (larger than the growth in market incomes and prices).

Benefits and tax credits

- Child raising allowance (Indemnizatia pentru cresterea copilului): Its amount has been reduced from 85% to 75% of previous income. However, in 2014, it was again set at 85% of previous employment income. The lower threshold has remained the same, but the upper

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[16] Since in the data there are not information on the use of this allowance, the model assumes that after the latest reforms nobody is using this allowance from year 2013.

ceiling has been subject to changes in policy rules. Thus, the parent has the option of choosing to take up the benefit for 1 or 2 years and the upper threshold is set accordingly, higher for 1 year and much lower for 2 years. The upper ceiling decreased from 4,000 RON per month to 3,400 RON per month if opting to receive the benefit for 1 year and 1,200 RON per month if opting to receive it for 2 years.

- Child raising incentive (Stimulentul lunar): Large increase in the benefit amount.

- Allowance for new born children and the outfit for the new born children (Alocatia pentru copiii nou-nascuti si trusoul pentru nou-nascuti): Abolished in 2011.

- Minimum social pension/ social allowance for pensioners (Pensia minima garantata): Introduced in 2009.

- Means-tested family benefits (Alocatia familiala complementara si Alocatia de sustinere pentru familia monoparentala): Increase in the income test, which however is lower than MII and CPI. Increase in the benefit amount which exceeds MII and CPI. Complementary family allowance (higher threshold) has been introduced in 2011. Support allowance for lone-parents (lower threshold): increase in the income test, which however is lower than the growth in market incomes and prices. Increase in the benefit amount which exceeds MII and CPI. An income test-allowance for lone parents (higher threshold) has been introduced in 2011. In 2014, benefit amount was slightly increased.

- Means-tested heating benefit (Ajutorul pentru incalzirea locuintei): Benefit amounts were either decreased or did not keep up with growth in market incomes and prices. In 2014, benefit amount was slightly increased.

- Unemployment benefit: The benefit has been reduced by 15% as of 2011 (austerity measure). In 2014, the benefit was increased by approx. 18% (of the lower level).

- Universal child benefit: The benefit for children under the age of 2 is kept nominally constant, while the benefit for children over the age of 2 has been increased with a rate higher than MII and CPI.

United Kingdom:[17]

Direct taxes and contributions

- Income Tax:
    - The introduction of a top tax band on incomes over £150,000 per year in 2010 (frozen from then on); 45% in 2013.
    - Above inflation increases to the income tax personal allowance, offset by reductions in the threshold to the higher rate of income tax and upper thresholds on contributions (see below).

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[17] For the UK, policy changes are described here in relation to what would normally happen through annual indexation. The regime of indexation also changed over the period. Most benefits, tax credits and tax thresholds are now indexed by CPI instead of using the RPI/Rossi indexes. In general this will tend to mean lower indexation. Some policy changes that took effect in the UK 2008-14 are not captured in our analysis. These include the increase of the female state pension age from 60 to 61 and the replacement of Invalidity Benefit by Employment and Support Allowance which involves a stricter work test and transfer to a means-tested scheme after a period of a year.

- Introduction of an abatement of the personal allowance by £1 in every £2 of taxable income over £100,000 (frozen) per year.

- Age related allowance additions restricted to existing recipients and frozen at 2012 rates (from 2013).

- In 2014 higher-rate tax threshold increased by only 1%[18]

- National Insurance contributions:

  - An increase in all contribution rates of one percentage point.

  - Increases in the lower limits for contributions and decreases in the upper limits.

  - Decrease in the contracted-out National Insurance rate reduction.

- Council Tax (local taxation): frozen in 2011 and 2012 (also in 2013 and 2014 in Scotland).

Benefits and tax credits

- Child Benefit:

  - Rates frozen at their 2010 level until 2014 when they were increased by 1% only.

  - Withdrawn from families with anyone earning £50,000 per year or more, tapered to £60,000.

- Working Tax Credit (WTC) and Child Tax Credit (CTC):

  - Real increases in the per child element of CTC and freezing of the basic amount of WTC/CTC at 2010 levels; couple and lone parent element also frozen in 2012.

  - Baby element of the CTC abolished.

  - Freezing of the 30-hours addition in WTC at its 2010 level; 30-hours disregard in Housing Benefit (HB) and Council Tax benefit (CTB) also frozen.

  - Childcare addition to WTC reduced from 80% of costs to 70%.

  - Increase in the withdrawal rate of WTC/CTC from 39% to 41%; family element also tapered at 41% from the lower threshold (instead of 6.67% from a high threshold).

  - WTC payable to people aged 60+ and those on Carer's Allowance if they work more than 16 hours per week (previously 24); work requirement increased from 16 to 24 hours per week for couples with children.

  - Child Benefit payments disregarded in the assessment of CTC/WTC.

- Pension Credit (means-tested pension):

  - Increase in the lower capital threshold in Pension Credit (and HB and CTB for pension age people) from £6,000 to £10,000.

  - Guarantee Credit indexed with BSP (at or more than inflation).

  - Savings Credit threshold increased and maximum payments reduced.

- Income Support and associated benefits: deductions from benefit (Income Support, HB and CTB) for non-dependents uprated by the CPI (previously frozen in nominal terms).

- Winter Fuel Allowance: cuts in levels of payment.

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[18] i.e. basic rate limit reduced since personal allowance increased.

- Housing Benefit (HB): Local Housing Allowance (LHA – HB for private tenants) maximum rents set at the 30th percentile of local rents rather than the 50th percentile. National caps on the amount of rent that can be claimed introduced, and the 5+bedroom rate abolished. The disregard of rent up to 15% more than LHA levels is removed. LHA is limited to single-room levels for single people aged 25-35. Housing benefit for those in social housing is reduced for those of working age living in housing that is deemed under-occupied ("bedroom tax"). In 2014 LHA rates increased by 1% instead of CPI.

- In 2013 and 2014 the levels of most benefit and tax credit payments for working age people, except those elements related to disability, were indexed by only 1% instead of CPI.

- Total household benefits capped at £500 per week for couples and lone parents and £350 per week for singles.