The end of decent social protection for the poor? The dynamics of low wages, minimum income packages and median household incomes

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ABSTRACT

Why is it that, in almost three decades and despite growth of income, employment and high levels of social spending, even the most developed welfare states in the world failed to improve minimum income protection for families with children? To what extent the erosion of minimum income protection for the working age population compared to median household incomes has been occasioned by exogenous changes either in median household incomes or in gross low wages? Or, has the erosion been associated with deliberate cutbacks of benefit levels? We focus on a limited set of vulnerable households with children, viz. working-aged couples and single parents who either are jobless or live on one low wage and use survey data (ECHP 1994-2001 and SILC 2005-2008 and 2012) and standard simulations of disposable incomes of typical households in order to address these questions. We find that in all EU's most developed welfare states minimum income protection for work-poor households with children fall short compared to the poverty threshold (defined as 60% of equivalised median household income). Typically, in the decades before the crisis this shortfall has become increasingly bigger. In most countries with available data this was *not* associated with deliberate cuts in benefit levels for the poor: in general, net disposable incomes of families on social assistance evolved at a similar pace as the net income packages of corresponding families on low wages. Rather, the erosion of the minimum social floor appears to have been related to sinking gross low wages compared to median household incomes. This points at severe and increasing structural difficulties to reduce poverty.

Keywords: poverty, low wages, social benefits

JEL codes: I38, J32, J38

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1. Introduction

Poverty trends in Europe's most developed welfare states are disquieting. In almost four decades since 'Les Trentes Glorieuses' (see, e.g., Fourastié, 1979), even before the crisis and despite growth of income, employment and high levels of social spending, these welfare states failed to make any further headway in the fight against income poverty. Quite on the contrary, since the mid-90's many of the traditionally best performing countries recorded significant and persistent increases in overall poverty rates among the working age population in general and child poverty in particular (Cantillon, Van Mechelen, Pintelon, & Van den Heede, 2014; European Commission, 2008; Gábos, Branyiczki, Lange, & Tóth, Forthcoming). For poverty researchers and policy makers alike this should be a point of great concern: almost certainly, it is for the first time in the history of these welfare states that we no longer do observe any sustained and substantial progress towards the great and momentous post-war objective of eradicating poverty.

The observed persistence of these trends in time and space suggest that there is more going on than some accidental policy failures in individual countries. Thoughts go then spontaneously to external inegalitarian forces such as globalization, technological progress and individualization (see, e.g., the comprehensive analyses of OECD, 2008, 2011). But, although we have some insights into the relationships between work, low wages, education, migration and poverty, the question as to the precise interaction between the institutions of the welfare state on the one hand and the changing social, demographic and economic context on the other remains poorly understood.

In the literature and in the public discourse, the focus today is overwhelmingly on changes at the top of the income distribution (Anthony Barnes Atkinson, Piketty, & Saez, 2011; Piketty, 2014). However, growing top incomes, accumulation and concentration of capital have directly little to do with poverty[1]. Much more important are the events at the bottom: the development of low wages, social benefits and minimum income packages[2]. It is there that we first and foremost must seek the answers for failing poverty policies. That is why, in this paper we look at the levels and dynamics of low wages and minimum social benefits

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[1] There may be an indirect influence, though, as it may e.g. result in support for redistribution coming under pressure.

[2] This idea was recently articulated by Atkinson as follows: "Reducing inequality means preventing extreme inequality at the top of the income scale. This is the primary focus of Piketty's book and has received most attention in the ensuing media coverage. But as important is what has happened to the bottom 99 per cent" (A. B. Atkinson, 2014, p. 621)

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compared to median household incomes. It is not our aim to study changes at the bottom of the wage distribution *as such*. More modestly, our purpose is to get an understanding of the relationships between median household incomes on the one hand and the hierarchy of social benefits and wages in the fabric of welfare states on the other. We start from the observed decline of the adequacy of minimum income packages for households with children in rich countries. Combining survey data and simulated incomes of typical families we move from a mere description of these trends to an analysis of related factors: to what extent the erosion of minimum income protection for the working age population compared to median household incomes has been occasioned by changes in median household incomes (the denominator), to changes in low wages and/or to deliberate cuts in benefit levels? Within the context of these interrelationships, what was the impact of tax and benefit policies on the incomes available to low wage earners and to jobless households? In doing so, we attempt to distinguish exogenous forces influencing wage levels at the bottom of the distribution on the one hand and deliberate protective and pro-employment policies on the other.

In this paper we focus on a limited set of vulnerable households with children, viz. couples and single parents who are either jobless or have only one low wage earner in the household. The countries we study are the old developed European welfare states: Austria, Belgium, The Netherlands, France, Germany, the UK, Finland, Denmark and Sweden. We use both survey data (ECHP 1994-2001 and SILC 2005-2008 and 2012) and standard simulations of disposable household incomes of typical families (Van Mechelen, Marchal, Goedemé, Marx, & Cantillon, 2011). The starting point is the conventional EU at-risk-of-poverty income threshold defined as 60 per cent of equivalised median income in each country (Anthony Barnes Atkinson, Cantillon, Marlier, & Nolan, 2002)[3]. In general, we analyse *trends* until the year before the onset of the economic crisis in 2008 as thereafter median incomes pulled down considerably the poverty thresholds. On the contrary, due to data limitations we analyse *levels* in 2012. When comparing two evolutions, we consider that one is substantively different from the other when there is a difference of at least one percentage point per year.

In section 1 we start with a brief discussion of the tension between work, social protection and poverty in developed welfare states. Section 2 takes stock of previous approaches in the study of the impact of social policies on poverty trends and explains ours. Section 3 describes how low wages represent a "glass ceiling" to redistribute to the poor and the deficiency of this ceiling compared to the poverty threshold. In section 4 we switch to

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[3] For a review on the caveats of this indicator, see Decancq, Goedemé, Van den Bosch, and Vanhille (2014).

trends and document the increasing inadequacy of the minimum floor. Subsequently, we investigate to what extend this was occasioned by: 1) median incomes of all *households* (including the elderly) increasing faster than median *individual* incomes of the working age population (section 4); 2) low wages lagging behind median household incomes and 3) the minimum social floor falling behind low wages (section 5). By comparing changes in gross and net low wages, we pay particular attention to the impact of tax and benefit policies on the incomes available to low wage earners. Section 6 concludes.

2. The tension between work and social protection

In general terms the reason for disappointing poverty outcomes in rich and developed welfare states may be referred to the advent of a "social trilemma" as a three-way choice between budgetary restraint, inequality and employment growth[4]. As a consequence of skill-biased technological change and increased competition from newly industrialising countries it is generally assumed that it has become difficult for modern welfare states to successfully pursue their core objectives of full employment and social inclusion (Kenworthy, 2008). In the simple but accurate wordings of Tony Atkinson: "either unskilled workers become unemployed or they see their real pay fall" (Anthony Barnes Atkinson, 2013). Only increased social spending in order to compensate for falling low wages (via tax credits or other forms of subsidies for low productive work) could mitigate this dilemma. However, against the background of the tightened budgetary surveillance in Europe, since the 90's the latter would have become increasingly more difficult, while subsequent enlargements towards the South and the East might have put additional pressure on the lower end of labour markets in the old European Member States (Marchal & Marx, Forthcoming). Against this backdrop, a broad consensus has grown in recent years regarding the need of a thorough rethinking of the post-war policy paradigm towards activation, social investment and "pre-distribution" (Hacker, 2011; Hemerijck, 2012)[5]. Hence, since the second half of the 90's most countries have experienced to a greater or lesser extent a shift in focus from passive social protection to activation and investment in education, more jobs and family-oriented services with a view of enhancing people's ability to work (Bonoli & Natali, 2012; Cantillon & Vandenbroucke, 2014; Hemerijck, 2012; Morel, Palier, & Palme, 2009,

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[4] We use the notion of 'Social Trilemma' in a more generic manner than Iversen and Wren (1998): in their influential paper they were referring to wage inequality and public outlay for wages only.
[5] The European Commission has also embraced social investment "to 'prepare' people to confront life's risks, rather than simply 'repairing' consequences" (European Commission, 2013).

2012; Pierson, 2001; Taylor-Gooby, 2004). However, the available outcome indicators clearly suggest that, even before the crisis, this paradigm shift has not (yet?) achieved the desired results at least not as poverty reduction is concerned (Cantillon, 2011; Cantillon & Vandenbroucke, 2014). In the Scandinavian countries – the undisputed forerunners of social investment – and more recently also in Belgium, France and Austria poverty among the working age population and children was substantially and structurally on the rise (Cantillon et al., 2014; European Commission, 2008; Gábos et al., Forthcoming).

Previous research has shown that, *in general terms*, unchanged or increasing working age poverty in rich European welfare states are attributable to two factors (Cantillon, 2011; Cantillon & Vandenbroucke, 2014; Gábos et al., Forthcoming). *First*, in the good years before the crisis employment growth was translated insufficiently into a reduction in the number of households out of work (Corluy & Vandenbroucke, 2014) while in many countries the share of individuals in jobless households increased during the crisis (Gábos et al., Forthcoming). *Second*, the poverty reducing capacity of social protection declined significantly before, during and after the crisis (Cantillon et al., 2014; Gábos et al., Forthcoming). Today, even in the most generous settings the minimum social protection floor is overall inadequate, in particular for families with children. Although the erosion of benefit packages – which has been very strong in the 90's – came to a halt in a number of countries, today the minimum income protection is inadequate in providing income levels sufficient to raise households above the EU at-risk-of poverty threshold (Marx & Nelson, 2013).

Policy would thus appear to have failed on two counts. Albeit to different degrees, activation measures (including tax credits to people in work) seem to have been unable to channel employment growth more towards work-poor households, and in many countries policy did not succeed in redistributing income in a way that enhanced the – in most cases highly – inadequate level of social protection for these households. So where did the causes of these failures lie? Was it down to a neo-liberal inspired lack of political will? Or was it due to inappropriate choices of policy mixes? Or were there major *structural* obstacles to an improvement on both the activation and the protection side?

If welfare states want to reduce income poverty they must simultaneously fight unemployment traps and raise minimum income protection packages for working and non-working families with children. While it is true that the correlations between the generosity of both social assistance and minimum wages on the one hand and poverty risks on the other are in

general rather weak[6], adequate minimum income floors for workers and non-workers are not only important *per se* but also because they may create the appropriate incentives to work while imposing the lower limit of the larger social protection systems. But, how can this be achieved, given the expenditures necessitated by ageing, increasing health care costs and the creation of quality jobs? How can a further deterioration of the compensation for social risks that are strongly correlated with poverty (most notably unemployment and household low work-intensity) be stopped while increasing work incentives?[7] Is it still possible to make progress on these fronts with the existing policy toolset? Or should we start thinking 'out of the box' as Tony Atkinson recently suggested (Anthony Barnes Atkinson, 2013)?

3. What we need to know

In the social policy literature the question of how the adequacy of welfare states can be measured has traditionally been addressed in different ways. Mostly, a 'pre-post' approach is taken, albeit in different forms: in the basic version household disposable incomes before and after taxes and transfers are compared (see, e.g., Cantillon et al., 2014; Gábos et al., Forthcoming; OECD, 2008); in regression models pre-transfer poverty and poverty reduction are used as dependent variables while spending, household employment and other factors are used as independent variables (see, e.g., Vandenbroucke & Diris, 2014); using microsimulation the impact of employment and tax-benefit policies on poverty reduction is assessed (see, e.g., Hills, Paulus, Sutherland, & Tasseva, 2014; Lelkes & Sutherland, 2009; Marx, Vanhille, & Verbist, 2012). These approaches have established that some settings are more adequate than others. Usually, the Scandinavian countries are pointed out as 'best practices' referring to low market income inequality, universalism[8], high spending levels (Cantillon, Marx, & Van den Bosch, 2003), a traditional strong focus on social investment (Morel et al., 2009, 2012) and on in kind spending (Hemerijck, 2012). However, it has also been shown that particularly in *these* countries poverty has been on the rise in the more recent past. Today, Swedish, Danish and Finish working age poverty rates are very

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[6] The adequacy of social assistance is also a function of the coverage of the system, take up rates while in many countries the role of social *insurances* in poverty reduction is more important than social assistance (see Vandenbroucke, Cantillon, Van Mechelen, Goedemé, & Van lancker, 2013).

[7] See e.g. Pintelon, Cantillon, Van den Bosch, and Whelan (2013)

[8] The study of the impact of targeting on overall adequacy levels remains inconclusive: the conventional assumption that universal systems are more succesful in reducing poverty because they are more able to rely on a broad legitimacy (see Korpi & Palme, 1998) has recently been questioned on empirical grounds (Kenworthy, 2011; Marx, Vandenbroucke, & Verbist, 2012; Whiteford, 2008).

close to those recorded in Belgium, France and Austria while the gap with the traditionally less performing UK has narrowed consistently and significantly (Gábos et al., Forthcoming)[9]. This should make us pause and think.

The caveats of the traditional pre-post approach are well-known (see, e.g., Vandenbroucke & Diris, 2014). Most importantly, the underlying assumption of the comparisons between pre- and post-tax and transfer incomes is that the welfare state is seen as an institution that corrects market outcomes, after the market has finished its workings. There are however important *structural* relations between pre-transfer poverty on the one hand and the welfare state fabric on the other: after all, employment rates and the distribution of work and wages are certainly not entirely exogenously given. Therefore, the interrelationships between pre- and post-transfer incomes should be an intrinsic part of welfare state research. These interrelationships, however, are extremely difficult to unravel.

Based on survey data, in 'Reconciling work and poverty reduction' we linked the household distribution of work with the capacity of welfare states to reduce poverty (Cantillon & Vandenbroucke, 2014). Here we take a different approach. In the conventional at-risk-of-poverty definition the dividing line between the poor and the non-poor is 60 per cent of the median of disposable household incomes. So conceived, the reason for the failures of anti-poverty strategies must lie in the fact that welfare states no longer succeed in pulling the incomes of the people at the bottom closer to those in the middle. Beside employment levels and the distribution of jobs among households this may be associated with changes either in median household incomes or in low wages and social benefits.

4. The glass ceiling of minimum income protection

In the "fabric of the welfare state" there is a hierarchy of incomes: in general terms, the disposable income of low wage earners should be higher than the minimum incomes for jobless persons. Table 1 indeed shows that admittedly with large cross-country variations and the notable exception of the Danish one earner couples, in all countries the net disposable income of families with children working on a minimum (low) wage (column 2) is higher than the incomes in case of joblessness (column 1). So devised, low wages are to be considered as a "glass ceiling" of minimum income protection. While it is true that there are conceivable ways out of this "glass ceiling" (see infra) it is reasonable to

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[9] The difference between Swedish and UK's at-risk-of-poverty rates decreased from almost 7pp in 2005 to 2 pp in 2012 (Gábos et al., Forthcoming).

assume that at least for reasons of legitimacy and fairness, welfare states must always respect a certain hierarchy between the incomes from work and the incomes for people out of work.

Table 1. The adequacy of the social floor, the wage floor and the incentive to work, 2012

| | Couple + 2 children (one earner) | | | | |
| | Adequacy social floor | Adequacy wage floor | | | Fin. incentive to work |
	Net	Net	Gross	Effort/Gain	
Denmark	96%	62%	71%	-12%	-35%
Austria	82%	82%	47%	76%	0%
Netherlands	73%	76%	66%	15%	4%
United Kingd.	72%	90%	52%	72%	24%
Sweden	69%	79%	78%	2%	15%
Finland	68%	73%	54%	36%	8%
Germany	67%	81%	58%	41%	20%
Belgium	65%	82%	70%	18%	26%
France	59%	82%	59%	38%	39%
	Lone parent + 2 children				
	Adequacy social floor	Adequacy wage floor			Fin. incentive to work
	Net	Net	Gross	Effort/Gain	
Denmark	96%	101%	90%	12%	5%
Austria	87%	90%	59%	51%	4%
Netherlands	86%	103%	85%	21%	19%
Belgium	83%	100%	89%	12%	20%
United Kingd.	80%	115%	67%	72%	43%
Finland	79%	98%	69%	42%	24%
Germany	77%	94%	74%	28%	23%
Sweden	76%	119%	99%	20%	57%
France	67%	96%	75%	28%	44%

Note: **Net** income includes income taxes, social security contributions, social assistance top ups, child benefits and non-discretionary housing and heating allowances; **Adequacy** social floor and wage floor: net disposable income as % of poverty line; **Effort/Gain**: (child benefits + housing all. + heating all. + soc. ass. - taxes - ss contr.)/gross minimum wage; **Financial incentive** to work: ratio between net disposable income of minimum wage earner and of similar family on social assistance. The simulated incomes correspond to families with children aged 7 and 14. In AT they represent Vienna and in SE Stockholm. The following are the approximations of the statutory minimum wages in the countries where they do not exist: an unskilled adult workers in retail trade in DK, a cleaner who is a novice but not a trainee anymore in FI, an employee in the retail sector with at least three years of working experience in SE, and in AT, it corresponds to the minimum wage in all collective agreements between the Austrian Trade Union and the Austrian Chamber of Commerce.
Source: Incomes from CSB-MIPI (see Van Mechelen et al., 2011) and poverty lines from Eurostat.

As a first step, it is thus important to know how low wages compare to the poverty threshold. It appears that in all countries displayed in Table 1 a single gross minimum (low) wage is below the poverty threshold for families with children (see column 3). This is valid both for couples and (albeit to a lesser extent) for lone parents with again large variations between countries. Deficits are the largest in Austria, the UK and Finland. Interestingly, the distinction between corporatist, social democrat and liberal welfare states has no explanatory power here: poor performers include countries belonging to all of these clusters.

By adding child benefits, in-work benefits, tax credits and housing allowances welfare states clearly increase incomes available for families on low wages. These "gross-to-net cash gains" for families and corresponding "gross-to-net efforts" for welfare states are displayed in column 2 of Table 1. The largest gains/efforts are recorded in the UK, Austria and Finland (the gains range from 72 % to 42 % of the gross minimum wage of a lone parent with two children in the UK and Finland); the lowest in Denmark, Belgium, the Netherlands and Sweden (ranging from 12 to 21% of gross minimum wages in Denmark and the Netherlands). In most countries these net compensations are (nearly) sufficient to lift the household income of working lone parents somewhat above the poverty line. However, in Austria, Finland, Germany and France the net disposable income of lone parents with 2 children working full time on a minimum (low) wage remains somewhat below the poverty threshold. Only in Sweden and the UK, however starting from relatively low gross levels, does the disposable household income exceed the poverty line by more than 10 percentage points. In the case of couples (less common and not the societal norm) they are insufficient everywhere.

Not unsurprisingly then, as shown in column 1 of Table 1 the disposable incomes of work-poor households on social assistance fall short in all countries, in the case of single parents ranging from a low 67% of the poverty threshold in France, a moderate 80% in the UK and Finland to a nearly adequate 96% in Denmark. Again, the distinction between corporatist, social democrat and liberal welfare states has no explanatory power.

The corresponding financial incentives to work – defined as the ratio between net disposable income of minimum wage earners and of a similar family on social assistance – fluctuate from a high 57% in Sweden and 44% in France to a low 4% in Austria and 5% in Denmark. In general, there seems to be an inverse relationship between the adequacy of the minimum income protection for work poor households and the financial work incentives: countries with a relative adequate social protection typically display rather low work incentives (see, e.g., Denmark, the Netherlands and Austria) while in countries where work incentives are relatively high the adequacy of the minimum income packages is below average (see, e.g., France, Belgium and Sweden for certain households).

However, there are interesting deviations from this pattern: the UK combines a relative high work incentive with a nearly average social floor, whereas in Germany the work incentive is nearly average and the minimum floor is relatively low.

Altogether, for the households with children under review in Table 1 no single country succeeds in combining simultaneously an above average score on both social adequacy and on work incentives with below average welfare state efforts to increase the household disposable incomes of low wage earners. Arguably, we are at the trilemma discussed in the first section of this contribution: as a consequence of the insufficiency of low gross wages for families with children even in welfare states with traditionally rather compressed wage distributions it seems no longer possible to successfully combine an adequate minimum income protection and reasonable incentives to work without important additional welfare state efforts.

If other family types confirm the patterns showed, the indicators displayed in Table 1 could become useful tools to pinpoint critical factors of failures and successes of minimum income protection. The country-specific relations between the adequacy of the social floor, the work incentives and the "gross-to-net welfare state cash effort" may f.i. suggest that in order to move towards more adequate income protection for work poor households with children The Netherlands and Belgium should consider an increase of the "gross-to-net-cash effort" which is far below average in these countries; the UK, Sweden and France might rebalance the social floor and the work incentives while yet in another set of countries there might be room for increasing gross minimum wages or for a combination of these policies.

5. The erosion of minimum income protection

We now turn from levels to trends: Figure 1 compares the evolution of the disposable income of working age families with children on social assistance with the poverty thresholds of the same household types[10]. It appears that in the decades before the crisis, in many countries, the

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[10] Here we only consider active age social assistance. In many countries the social floor for the elderly and for the long-term disabled grew at a faster pace (Van Mechelen, Bogaerts, & Cantillon, 2007). Here and in the rest of the paper the years of the evolutions being compared do not necessarily match. This is mainly due to data constrains (e.g. there is no survey data for some years of the simulated incomes), the aforementioned decision of not using poverty thresholds after the crisis and because we attempt to use the longest trends as possible. We are aware that particular events in years (not)considered can change certain trends in countries/periods.

shortfall of minimum income protection packages for families with children has become increasingly bigger[11]: in most countries since the 90's the pace of growth of disposable incomes of households on social assistance has been consistently lower than the increases of median household incomes. The only exceptions include France and Belgium in the 2000's, Austria and France in the 90's.

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[11] Not unimportantly, in many countries the erosion of the minimum floor started well before the 90's: in Belgium, for instance, between 1985 and 1992 social assistance for working age couples declined by more than 12% compared to national income per capita (Van Mechelen et al., 2007).

Figure 1. Real evolutions of poverty lines and net disposable incomes, 1992-2001 and 2001-2009 (in Euros 2012)

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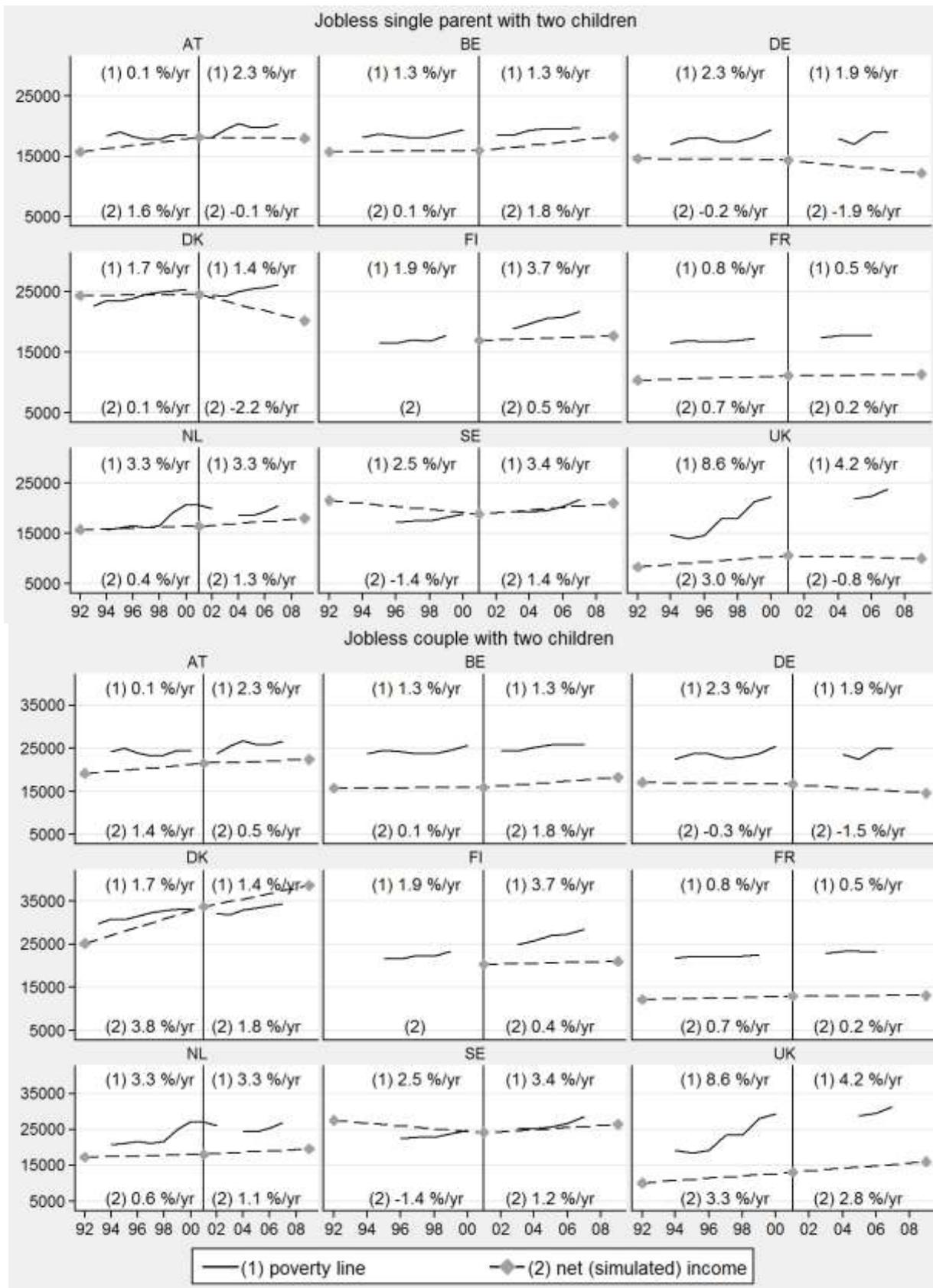
Notes: The values next to the numbers in parentheses indicate the change during the respective period. **Due to differences in sampling and income definitions, poverty lines in the two periods are not comparable**. Incomes in SILC contain more components to be consistent with the Canberra recommendations (EUROSTAT, 2005). When looking at trends, we use income survey data up to 2007 due to the aforementioned considerable changes after the crisis, whereas we use simulated incomes according to their availability. See Table 1 for details on the simulated incomes. In addition, in DE in 1995 and 2001 the social assistance package is the average level guaranteed by the Länder, weighted by population size. For countries within the Euro area we use a fix rate in ECHP and for countries outside this area we use their 2012 exchange rate.

Source: Poverty lines from Eurostat and calculated by the authors from ECHP 1994-2001 for Denmark and Sweden. Social assistance CBS-MIPI (see Van Mechelen et al., 2011). Harmonised consumer prices indexes (HICP) from European Central Bank (ECB), except for Germany and the UK where we use OECD CPI since HICP from the ECB are not available for 1992. Exchange rates from ECHP and Eurostat.

This erosion of the minimum floor compared to median equivalised household incomes could have been related to three different mechanisms: 1) median incomes of all *households* (including the elderly) increasing faster than median *individual* incomes of the working age population (poverty line effect), 2) low wages lagging behind median household incomes (low wage effect) and/or 3) the growth pace of social benefits being slower than that of low wages (tax-benefit effect). In what follows, we will confront changes in median household incomes, gross and net low wages and the minimum social floors. In doing so, we attempt to distinguish exogenous forces influencing wage levels at the bottom of the distribution on the one hand and deliberate protective and pro-employment policies on the other: to what extent the erosion of minimum income protection for the working age population compared to median household incomes has been occasioned by exogenous changes either in median household incomes or in gross low wages? Or, has the erosion been associated with deliberate cutbacks of benefit levels? And, what was the impact of tax and benefit policies on the incomes available to low wage earners?

Evidently, policy recommendations will vary according to the driving forces that can be identified in this way. If it would appear that the main reason for increasingly inadequate social minima lies in a poverty line effect and *if* these mechanisms would persist in the future then the poverty problem would increasingly become not only a low wage problem but one including middle wages as well. If, alternatively, the wage effect is the determining factor then welfare states should focus first on potential measures allowing for higher disposable incomes for families living on low wages (higher minimum wages, tax exemptions, in-work-benefits, child benefits and/or better cost compensations). If, however, the main cause for the increasing structural deficiency of the minimum social floor lies in a benefit effect they should consider the possibilities of increasing the adequacy of social redistribution by upgrading existing benefits.

So, the first question is: to what extent was the growing gap between the minimum social floor and the poverty threshold related to changes in median household incomes? Understanding the dynamics of median equivalised household income is a complex issue. First, this indicator depends on many factors such as the level and distribution of individual incomes, the structure of households, how the latter is expressed in an equivalence scale, the number of earners within households. Second, the median is a function of the *position* of incomes in the distribution; therefore, not all income changes modify the median[12]. For instance, top wages have little (or no) impact on the position of median household incomes. As Aaberge and Atkinson (2013) put it, the median household income acts as a 'watershed' in the sense that changes below, above or crossing this median have different effects on it.

Be that as it may, what we need to know here is simply whether the increasing shortage of the minimum social floor for the active age population compared to the at-risk-of-poverty threshold might be caused by median incomes of all *households* (including the elderly) rising more rapidly than the incomes of the *individuals* below the age of 60. Increasing poverty in the age cohort 20-59 and a much more mixed picture for the total population, prompts indeed the question whether the increase in the non-elderly at-risk-of-poverty rates can be explained by the *relative improvement* of incomes in the elderly population. In addition, the increase in the number of multi-earner households (Marx, Vandenbroucke, et al., 2012) might also have pulled up median household incomes compared to active age individual incomes. Two simple 'preliminary' tests are to compare a) the evolution of median household incomes for the elderly population with the evolution of median household incomes in the age bracket 20-59 and b) the evolution of median household incomes of the working age population with median individual incomes of the same population. The first test is showed in Figure 5 in the annex where we see that the evolutions of median household incomes including and excluding elderly households are very similar. In relation to the second test, by and large the equivalised median household incomes of the working age population increased at a similar same pace (or less) as median individual incomes of the same population observed in the surveys (see Figure 5 in annex). Only in the Netherlands (in the 90's) and the UK (in the 2000's) median household incomes of the working age population grew considerably faster than median individual incomes. The same conclusion is reached by comparing median household incomes with average *per capita* disposable and spendable incomes recorded in National Accounts (see Table 2 in annex). Except for Germany, Sweden and the UK (in the whole period), and the Netherland (in the 2000's) individual spendable

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[12] For a discussion on how transfers change poverty measures based on the median, see Aaberge and Atkinson (2013)

income increased similarly or even more rapidly than median household incomes. *Prima facie* there are thus in general no indications for a 'poverty line' effect.

6. Low wages under pressure

So, in order to understand the growing gap between minimum income protection and the poverty threshold we must turn to the wage and the benefit effects. We start with the former, using 10th percentiles of full time full year wages to represent them[13].

After the economic turmoil, in most countries considered here, 10th percentile gross wages came closer to the poverty lines. This was linked to the crisis-driven decreases of median incomes. However, before the crisis, in most countries 10th percentile wages sunk in relation to the poverty lines (Figure 2). This was most outspoken the case in Denmark, the Netherlands and Germany during the whole period and in the UK in the 90's. Not unimportantly, with the specific exception of Austria, even in countries with traditionally strong collective bargaining and relatively compressed wage distributions there has been a backward trend of low wages compared to median incomes.

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[13] Below the cut point *levels* set by 10th percentile wages we find earners of minimum wages and wages just above the minimum. Therefore, *trends* of 10th percentile cut points can be not only the result of changes in the level of these low wages but also in the number of people earning them. For instance, if some occupations with middle wages are disappearing and people who used to fill those positions start working in occupations somewhat below the 10th percentile (e.g. minimum wage positions), those low wages could maintain their levels while the 10th percentile cut points could decrease due to a larger number of low wage earners pulling down the cut points. It follows that the trajectories of 10th percentiles and minimum wages can differ not only because 10th percentiles include other low wages besides minimum ones, but also because the number of earners of these wages can change.

Figure 2. Real evolutions of poverty lines and full-time full-year 10th percentile gross wages 1994-2001 and 2004-2007 (in Euros 2012)
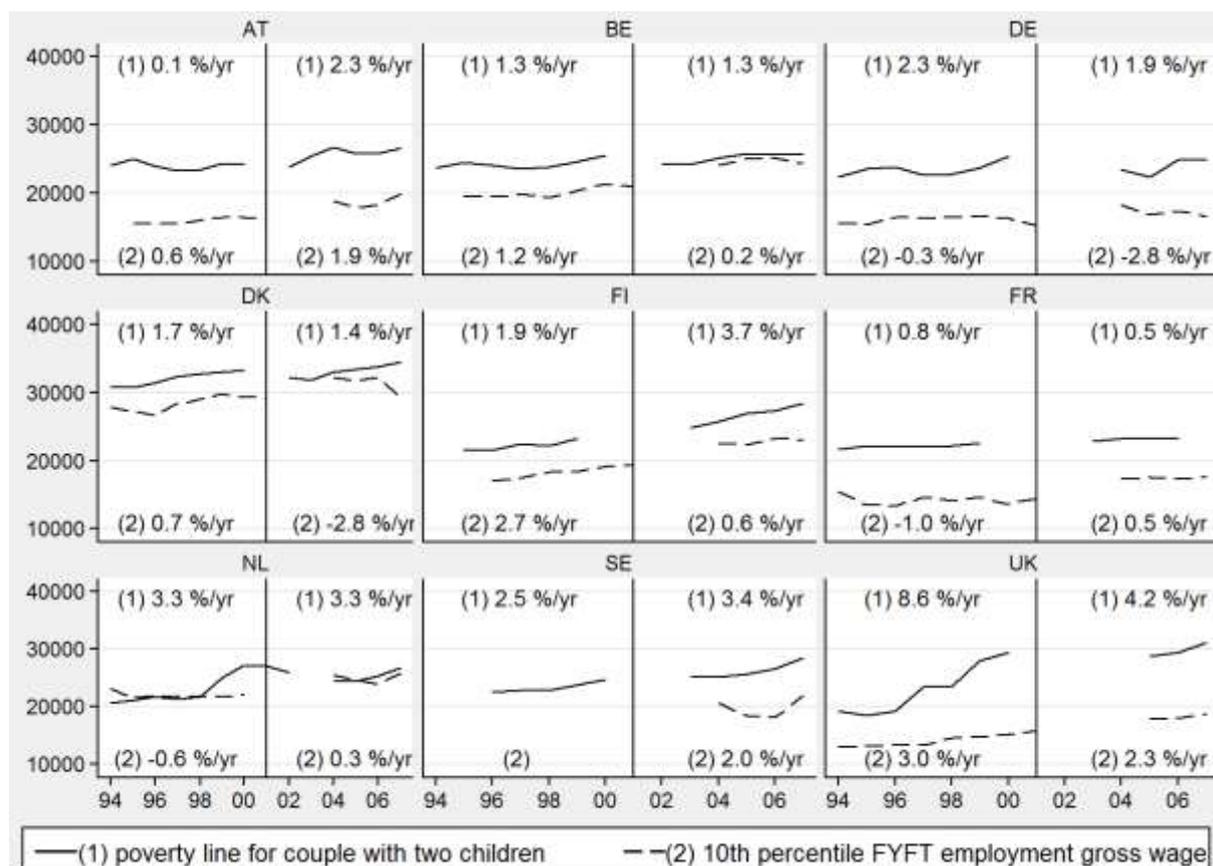
Note: The values next to the numbers in parentheses indicate the change during the respective period. The poverty line evolution in Denmark includes 1993. **Poverty lines and percentiles in the two periods are not comparable** (see Figure 1 and the following explanation). Percentiles are calculated from employed people of working age (20-59 excluding students under 25) who declared to be working full-time. We use monthly wages from ECHP and yearly from SILC due to the scarcity of monthly employment information in ECHP and of monthly wages in SILC. Accordingly, in ECHP monthly wages are multiplied by 12 and do not include components such as a 13th salary, overtime, holiday pay and other possible related components. In the case of SILC, an extra limitation is that before 2009 the number of months worked full-time cannot be separated for employed and self-employed people. Therefore, we use the yearly wages of people who declared to have worked during 12 months and had zero income from self-employment during the income reference period. In ECHP, values are recorded as net; therefore, they are transformed using the net/gross factor of the survey. In SILC, gross means that neither taxes nor social contributions have been deducted.
Source: See Figure 1. Percentiles calculated by the authors from ECHP 1994-2001 and SILC 2005-2008[14].

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[14] The SILC data of Germany has been questioned as quota sampling was applied until 2008 (Decancq et al., 2014). In Belgium, gross wages in the same survey were found to be underreported in relation to fiscally registered ones (Vandelannoote, Vanheukelom, & Verbist, 2014).

Consequently, in most countries in 2007, the policy effort required to lift minimum incomes of working and non-working families with children up to the poverty line was more demanding than in the early 90's: increasingly, it required not only additional spending to raise the social benefits for work poor households but also, in order to avoid a worsening of unemployment traps, additional compensations for relative decreasing low gross wages to keep the latter in pace with average wages. This implies that, although it is true that "earners in the top 10% have been leaving the middle earners behind more rapidly than the lowest earners have been drifting away from the middle" (OECD, 2011, p. 22), the latter had an important cumulative impact on the capacity of welfare states to increase minimum income protection for working age families.

In most cases net low wages grew faster than gross low wages, and in some of those cases the rise in the gap between gross low wages and median incomes has effectively been offset by increasing welfare state efforts. As shown in

Figure 3 the difference between *net* low wages and the poverty threshold remained indeed fairly unchanged (or wages increased more) in almost two thirds of the countries/periods with available data. This required however an increasing effort in terms of either reductions in employee payroll tax payments in Belgium and The Netherlands[15] or more recently refundable tax credits in, France and Sweden (as earlier introduced in the United Kingdom)[16]. This is in line with comparisons across a larger number of countries (Marchal & Marx, Forthcoming).

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[15] In Belgium the overall effort to allow the income of households at minimum wage to grow at the same pace as that of households with (above-)average earnings (mainly through child benefit and cumulative exemptions of social contributions) has been quite considerable: for lone-parent households earning a minimum wage, it amounts to almost a third of today total gross household income (Cantilon, Van Mechelen, Frans, & Schuerman, 2014). Another example is Sweden where the tax basic deduction was increased in 2006 (Gronberg, 2005).

[16] Survey net wages do not include potential cash benefits targeted to low wage earners that are not delivered as tax or contribution deductions (e.g. due to its design the Working Tax Credit in the UK is not incorporated, whereas the Earned Income Tax Credit in Sweden it is). Therefore, these types of benefits are not included either in the comparison between 10th percentile net and gross wages coming from surveys. In order to partially circumvent this caveat, in Figure 7 of the Annex we include for a reduced number of countries/periods – due to data limitations – a similar comparison as in Figure 2 but using simulated net incomes of families living on a minimum wage. The simulated incomes include – when applicable – child benefits, tax credits and other cost compensations. Figure 7 shows that in the Netherlands (in the 90's) and Belgium and France (recently) net simulated incomes grew considerable faster than minimum (gross) wages, which supports some of the aforementioned welfare state efforts. On the contrary, recently in the UK the welfare state efforts signal in the opposite direction, showing that minimum wages grew faster than their accompanying cash benefits.

Figure 3. Real evolutions of poverty lines and full-time full-year 10th percentile net wages 1994-2001 and 2004-2007 (in Euros 2012)
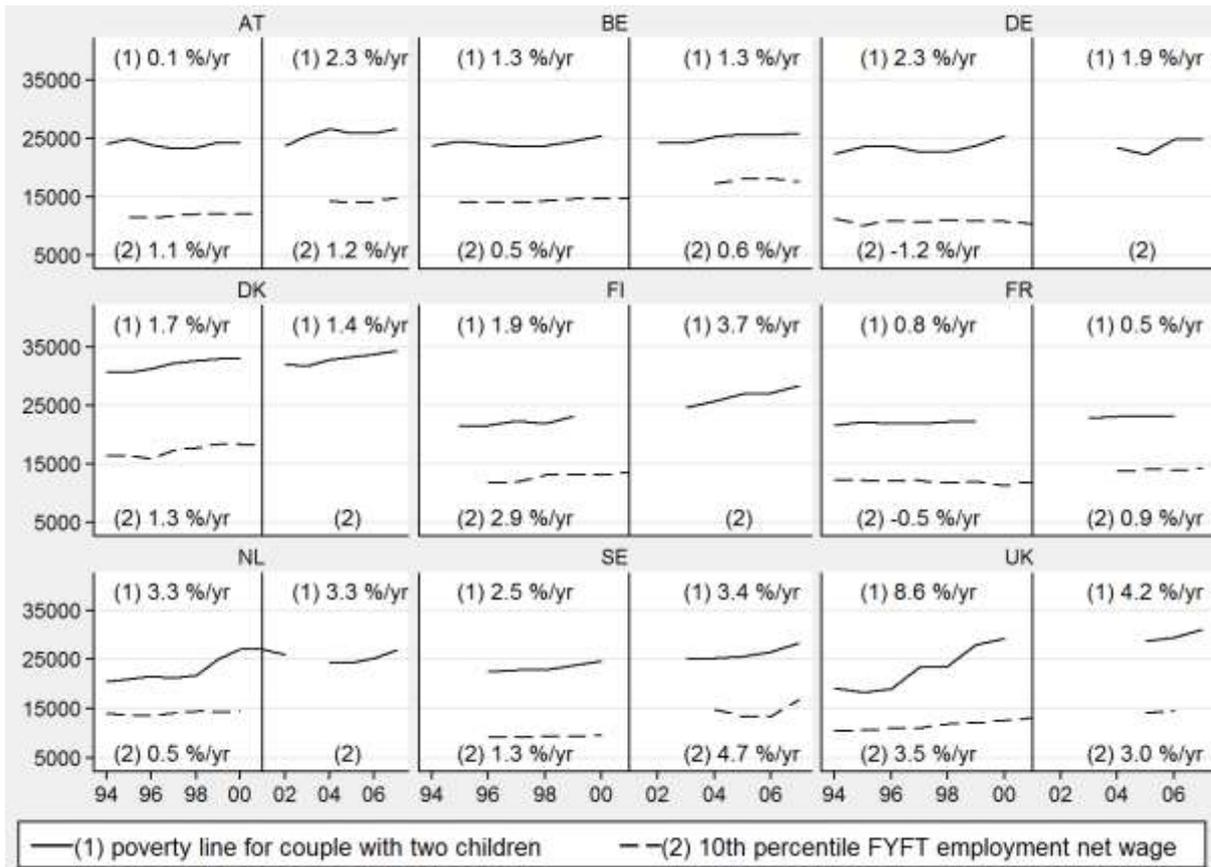
Note: see Figure 2. For many countries SILC does not report net wages. The rankings of wages to calculate gross and net percentiles are done separately. As there are no monthly wages for SE in ECHP, for this country/period we calculate net wages similarly as in SILC.
Source: see Figure 2.

Going down to the lowest level of the income cascade, in most countries (with available data) minimum income packages for work poor families developed at a similar rate as net low wages: typically disposable incomes of households on social assistance increased as much or even more rapidly than net low wages (

Figure 4)[17]. Yet, nowhere this was sufficient for placing them in the vicinity of the poverty line.

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[17] As aforementioned, survey net wages do not include potential cash benefits targeted to low wage earners. Therefore, these types of benefits are not included either in the comparison of

Figure 4 between 10th percentile net wages and simulated net incomes of jobless households. In order to consider benefits targeted to low wage earners, in Figure 7 survey net wages are replaced by simulated net incomes of households living on a minimum wage (including their corresponding benefits). The conclusion regarding net incomes of jobless households following the net incomes of similar low wage

The only countries for which we do have indications of deliberate political decisions to reduce minimum income protection compared to low wages include Sweden in the whole period, Denmark in the 90's, the UK and Austria in the 2000's. Interestingly, notwithstanding the big efforts in the UK and in Sweden to increase the net incomes of low wage families in neither of the two countries the thus created room for manoeuvre has been used in order to increase the minimum floor, on the contrary.

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households is the same using either survey net low wages or simulated net incomes of minimum wage households, except in the Netherlands in the 90's and France in the 2000s. In both countries/periods the growth of simulated net incomes of minimum wage households is larger than the growth of survey low net wages. This difference can be due to cash benefits targeted to low wage earners or to important changes in the number of people earning minimum or low wages (see footnote **Fout! Bladwijzer niet gedefinieerd.**). In relation to the former, e.g., our latest simulated incomes for minimum wage households in France correspond to 2009 when the social assistant top-up for low wage earners *Revenu de solidarité active* (RSA) was implemented (OECD & ILO, 2011), whereas our latest survey low wages correspond to 2007 and thus cannot include potential increases brought by the RSA.

Figure 4. Real evolutions of full-time full-year 10th percentile net wages and net incomes of jobless couples and single parents with two children, 1992-2001 and 2001-2009 (in Euros 2012)
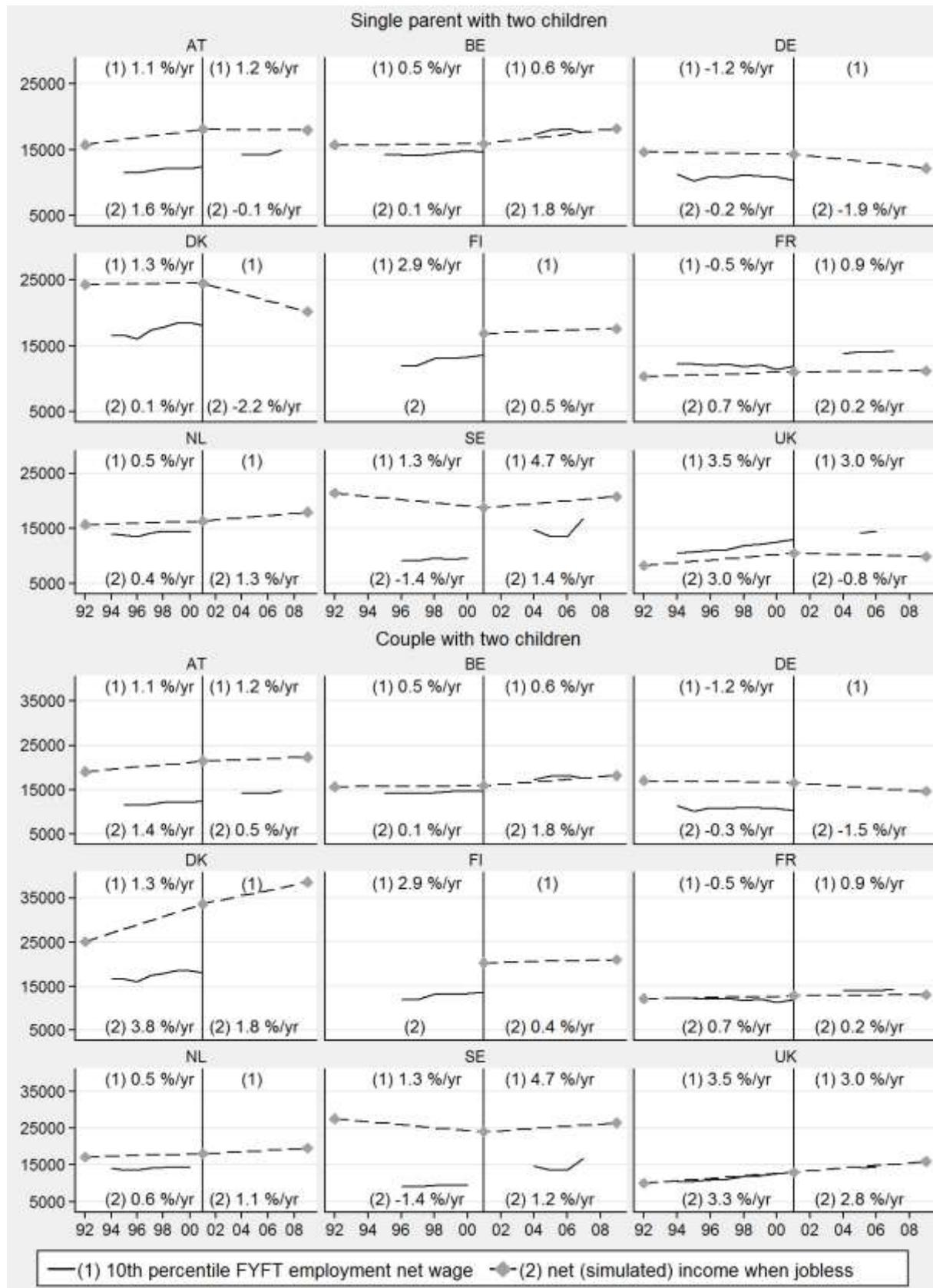
Note and source: see Figure 1 and

Figure 3.

7. Conclusion: which way forward?

In all EU's most developed welfare states minimum income protection for work-poor households with children fall short compared to the poverty threshold (defined as 60% of equivalised median household income). Typically, in the decades before the crisis this shortfall has become increasingly bigger. In most countries with available data this was *not* associated with deliberate cuts in benefit levels for the poor: in general, net disposable incomes of families on social assistance evolved at a similar pace as the net income packages of corresponding families on low wages. Rather, the erosion of the minimum social floor appears to have been related to sinking gross low wages compared to median household incomes.

In order to avoid increasing unemployment traps, sinking gross low wages required additional welfare state efforts in terms of either reductions in social contributions in Belgium, The Netherlands and Germany and refundable tax credits in France and Sweden (as earlier introduced in the United Kingdom). However, together with an increasing inadequacy of the minimum floor in many countries (including Denmark, Austria, the Netherlands, Belgium, Finland and Germany) the observed financial incentives to work full time at minimum wage level remained in many countries well below 25% of the out-of-work income. Only in France, Sweden and the UK the gains are higher than 40%. This suggests either insufficient "gross-to-net cash efforts" or imbalances in the nexus of minimum income protection and financial incentives to work.

Thus, as a consequence of the growing insufficiency of low gross wages for families with children even in welfare states with traditionally rather compressed wage distributions it seems no longer possible to successfully combine adequate minimum income packages for working and non-working families with children and reasonable incentives to work without *additional* welfare state efforts. This is what we observe when we consider *incomes only*. Possibly changes in spendable incomes (taking into account various cost compensations and in kind spending) paint a more qualified picture. After all, many countries saw a series of measures aimed at alleviating pressures on the household budgets of low-income families (Cantilon et al., 2014). Cost compensations and in kind services might indeed be considered as an alternative way out of the trade-off between adequate income protection and work incentives. Governments can, moreover, reinforce non-financial (de)incentives to work rather than merely focusing on financial incentives. The degree to which the 'glass ceiling' holds in a specific country may furthermore highly depend on numbers: when only a few number of people are on low wages or live in a

jobless household it may be easier to cope with financial unemployment traps.

More generally, it has been suggested that social investment strategies may offer a way out the trilemma. For sure, the better welfare states are in raising the productive capacities of people the less demanding redistributive policies will have to be. But, it remains equally important to provide adequate income support: to combat relative income poverty *per se*; to increase the financial incentives for low skilled to enter the labour market and to be more successful in the implementation of social investment strategies (situations of financial stress are after all not good breeding grounds for social investment)[18]. No doubt, adequate minimum income schemes (with a view to lifting work-poor families above the poverty line) and satisfactory financial incentives (in order to limit the number of work-poor households) are key instruments to the delivery of the Europe 2020 poverty reduction targets. In order to achieve this, some countries might possibly consider an increase of gross minimum wages, others will first and foremost have to rebalance social floors and work incentives while yet another group of countries should raise beforehand net low wages. In general, policy options include:

1) at the least, the regular adjustment of social benefits and tax thresholds to changes in prices *and* wages (see Hills et al., 2014 in comparative perspective);

2) on top of that, increases of the minimum social floor*:* the objection to this is that it could create or aggravate unemployment traps, i.e. the difference between net low wages and social assistance could become too small; yet, in some countries there is room for doing so (most notably in the UK and Sweden) while in others that space is yet to be created;

3) surveillance of gross minimum (low) wages – which vary considerably within the countries considered in this paper – in the European context: although the relationship between poverty and the level of minimum wages is not that strong altogether[19] they are *indirectly* important because minimum wages relate as a 'glass ceiling' to the social minimum floor and the fight against unemployment traps; so conceived there is a direct link between in-work-poverty and jobless poverty ;

4) in order to be able to push minimum income protection closer to the poverty line without worsening unemployment traps, raising net income packages for low-wage earning households either through tax and/or social contribution credits or by increasing significantly child benefits and other cost compensations;

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[18] Mullainathan and Shafir (2013)

[19] That is because many low wages can be combined at the household level (see, e.g., Marx, Marchal, & Nolan, 2013; Marx & Nolan, 2014).

5) this could be financed by tax shifts towards consumption and wealth, a return to more progressive income taxes and more efficient social spending;

6) because the structural inadequacy of the minimum floor for families with children is probably also related to special care needs, governments should guarantee that financial provisions to compensate for unpaid caring activities are provided: unfortunately, the issue of parental care remains sadly underestimated in poverty discourse and literature.

Against the background of sluggish low wages, raising the social floor presupposes inevitably a reinforcement of the distributive process. Mechanical calculations have shown that the redistributive effort required to lift all household incomes to the 60% level would range between 1,6% of total disposable income in Austria and The Netherlands and 2,7% in Denmark if the impact on unemployment traps is not taken into account (Vandenbroucke et al., 2013). However, the figures showed in this paper suggest that the effort is much bigger when controlled for unemployment traps. Because of the drifting away of low wages, this additional cost has moreover become increasingly bigger in the past decades. This points to two important conceptual questions related to the post-war welfare paradigm that still prevails in Europe's most developed welfare states[20].

First, our work shows how 'old' and 'new' debates[21] on welfare reform should be combined: in order to be able to increase the social floor for work-poor households as in the 'old' debate, in a number of countries the incentives should be reinforced at the bottom by redistributing from the middle and high-income earners to the working poor as in the 'new debate'. This simultaneously could create room to lift the social floor and increase work incentives without having to raise gross low wages. Our research showed that most of the rich EU welfare states have effectively been increasing their efforts allowing low wage earners to keep their income in pace with the poverty line. However, this has either not been enough to create enough space to raise the social floor, or the room thus created has not been used. The consequence of all this is that in order to move towards the EU 2020 targets, welfare states distributional efforts should become much larger than what is generally expected.

Second, both the fact that we are in a situation in which low wage earners are no longer capable to contribute (sufficiently) to the social security

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[20] Cantillon et al. (2014)

[21] Immervoll, Kleven, Kreiner, and Saez (2007, p. 4) coined the new debate as the one which "asks if it is desirable to increase the incentives to work at the bottom by redistributing from the middle and high-income earners to the working poor, rather than to the non-workers as in the old debate".

system on the one hand and the strong selectivity of social risks that are strongly correlated with poverty (typically low household work intensity and unemployment[22]) on the other, put the broadly supported principle of horizontal redistribution through Nicholas Barr's famous 'piggy bank' (Barr, 2001) under pressure. While the principle of universality – convincingly described by John Hills as "there is no 'them and us – just us" (Hills, 2014, p. 266) – should remain the foundation of social security systems, as a consequence of the increasing gap between low wages and median incomes, the emphasis today must inevitably go more to 'vertical redistribution' from the rich to the poor, that is to say: more progressivity and less proportionality in taxes and social contributions on the one hand and – although universalism should remain the trunk of the system – more targeting in the provision of benefits and services (progressive universalism) on the other. Arguably, this may be the reason why we no longer observe a positive correlation between universalism and poverty reduction (Kenworthy, 2011; Marx, Vandenbroucke, et al., 2012; Whiteford, 2008): universalism correlates less with poverty than it used to be in the past. Perhaps, settings where redistribution is organized more through targeting and progressivity than through universalism and proportionality are better prepared to respond to the inegalitarian forces and downward pressures at the bottom of the labour market experienced by today's welfare states.

Our analysis was not complete. To give but one example, the cost of different scenario's to increase the social floor was not incorporated. This indicates where future research on poverty reduction is needed. The hierarchy of incomes in the architecture of welfare states as a point of departure to analyse country-specific strengths and weaknesses on the one hand and the model family approach on the other, have proven to be very useful to pinpoint the critical factors of policy failures and successes in individual countries: the country-specific relations between the adequacy of the social floor, the work incentives and the "gross-to-net welfare state cash effort" may f.i. suggest that in order to move towards more adequate income protection for work poor households with children The Netherlands and Belgium should consider an increase of the "gross-to-net-cash effort" which is far below average in these countries; the UK, Sweden and France might rebalance the social floor and the work incentives while yet in another set of countries there might be room for increasing gross minimum wages or for a combination of these policies. We therefore strongly recommend complementing the current European social indicators with information that is obtained through this approach. In doing so a clearer link can be made between policies on the one hand and the current outcome indicators on the other.

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[22] See Pintelon et al. (2013)

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Annex

Figure 5. Annual percentage real growth rate of median equivalised household income with and without elderly households, 1993-2000 and 2004-2007
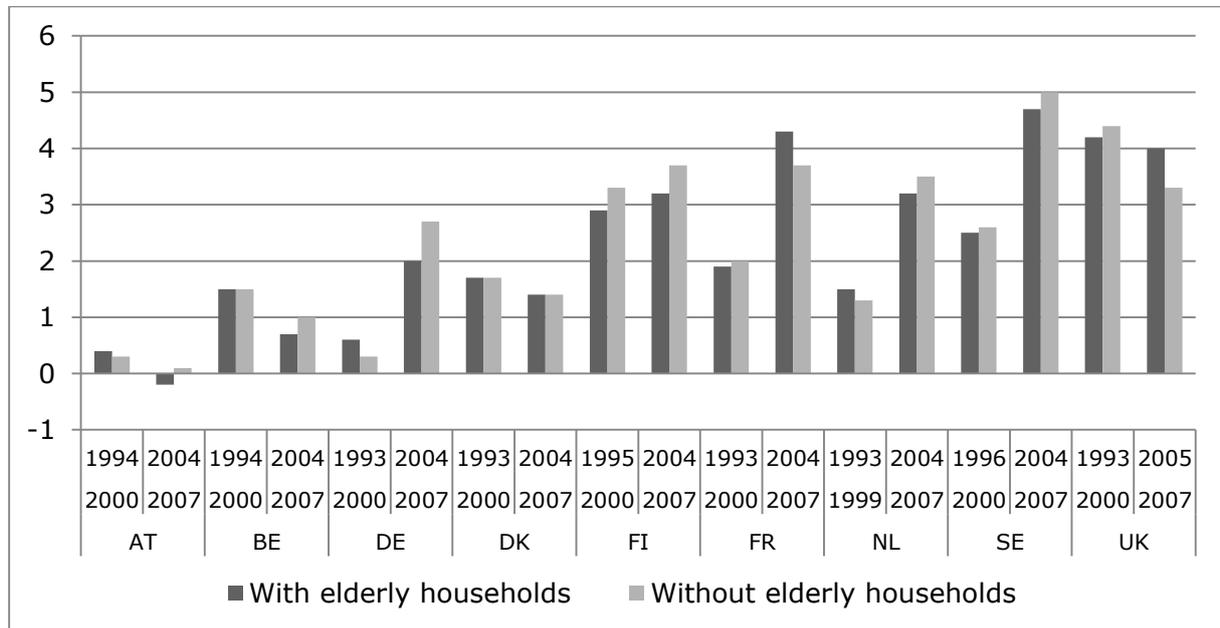
Source: Calculated by the authors from ECHP 1994-2001 and SILC 2005-2008. Harmonised consumer prices indexes (HICP) from European Central Bank (ECB), except for Germany and the UK where we use OECD CPI.

Figure 6. Annual percentage real growth rate of median individual income of people of working age and median equivalised household income, 1993-2000 and 2004-2007
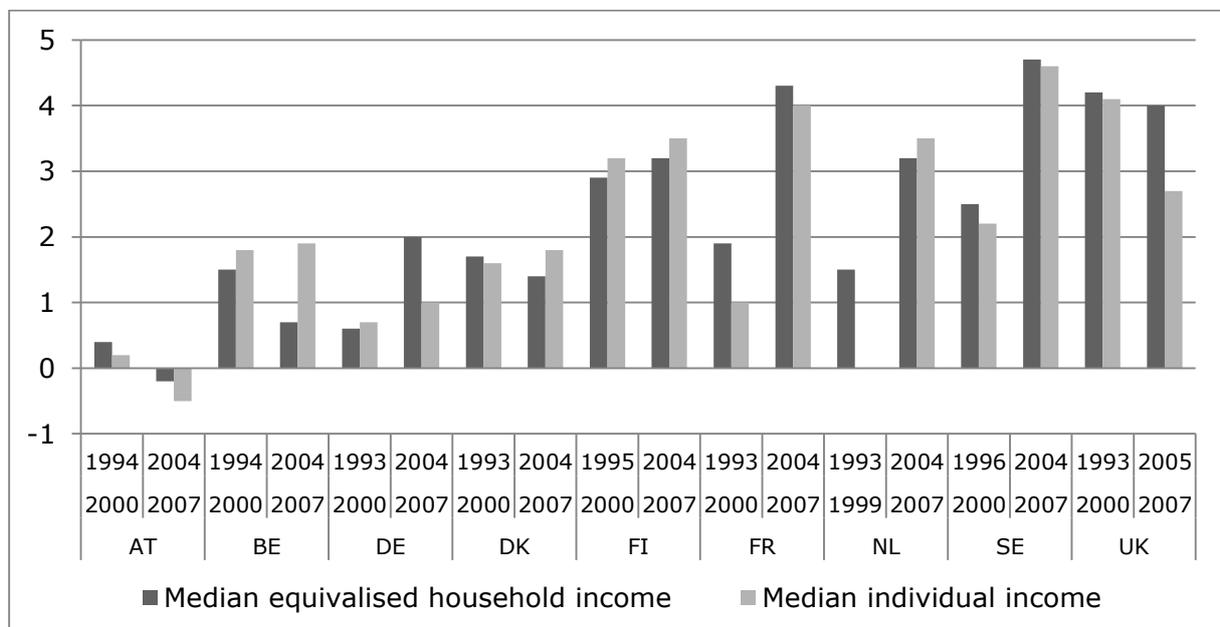
Notes: The individual incomes used to calculate the medians are incomes higher than zero of people of working age (excluding students under 25). Individual incomes are included in ECHP but not in SILC where some income components are only included at the household level. Therefore, for SILC, individual incomes are calculated by the authors as the sum of individual income components (wages, social transfers and others private

incomes), plus positive household components (social transfers and others private incomes) divided by the amount of household members, minus negative household components (taxes and social contributions and transfers to other households) assigned proportionally to the individual income components of the household members.
Source: see Figure 5.

Table 2. Average yearly growth of household incomes according to national accounts and survey data, in real terms, 1994-2000 and 2002-2007*

	1994-2000 National accounts		Household survey	2002-2007 National accounts		Household survey
	Ave. per capita gross adj. disposable income	Ave. per capita Spendable income**	Household eq. Median income	Ave. per capita gross adj. disposable income	Ave. per capita Spendable income**	Household eq. Median income
Austria	1,6	1,7	0,1	2,3	3,3	2,3
Belgium	1,6	1,3	1,3	1,4	0,9	1,3
Germany	0,4	0,3	2,3	0,4	0,5	1,9
Denmark			1,7	1,9	1,4	1,4
Finland	3,3	2,6	1,9	3,4	3,3	3,7
Netherlands	3,2	3,2	3,3	1,3	-0,1	3,3
Sweden	1,7	0,2	2,5	2,5	2,3	3,4
UK	3,5	3,4	8,6	2,6	1,1	2,6

* 1994-2000 = 1995-2000 for national account data; 1994-2000 = 1995-1999 for all data on FI, 1996-2000 for all data on SE; 2002-2007 = 2004-2007 for all data on DE, 2003-2007 in FI and SE, 2003-2006 in FR, 2006-2007 in UK
** Spendable income = gross adjusted disposable income – social transfers in kind to households – net equity of households in pension funds (except for Germany)– imputed rent (Anthony Barnes Atkinson, 2013) (calculations A. Nys).
Source: see Figure 1. National account data on Eurostat.

Figure 7. Real evolutions of poverty lines and net incomes of working and jobless couples and single parents with two children, 1992-2009 (in Euros 2012)
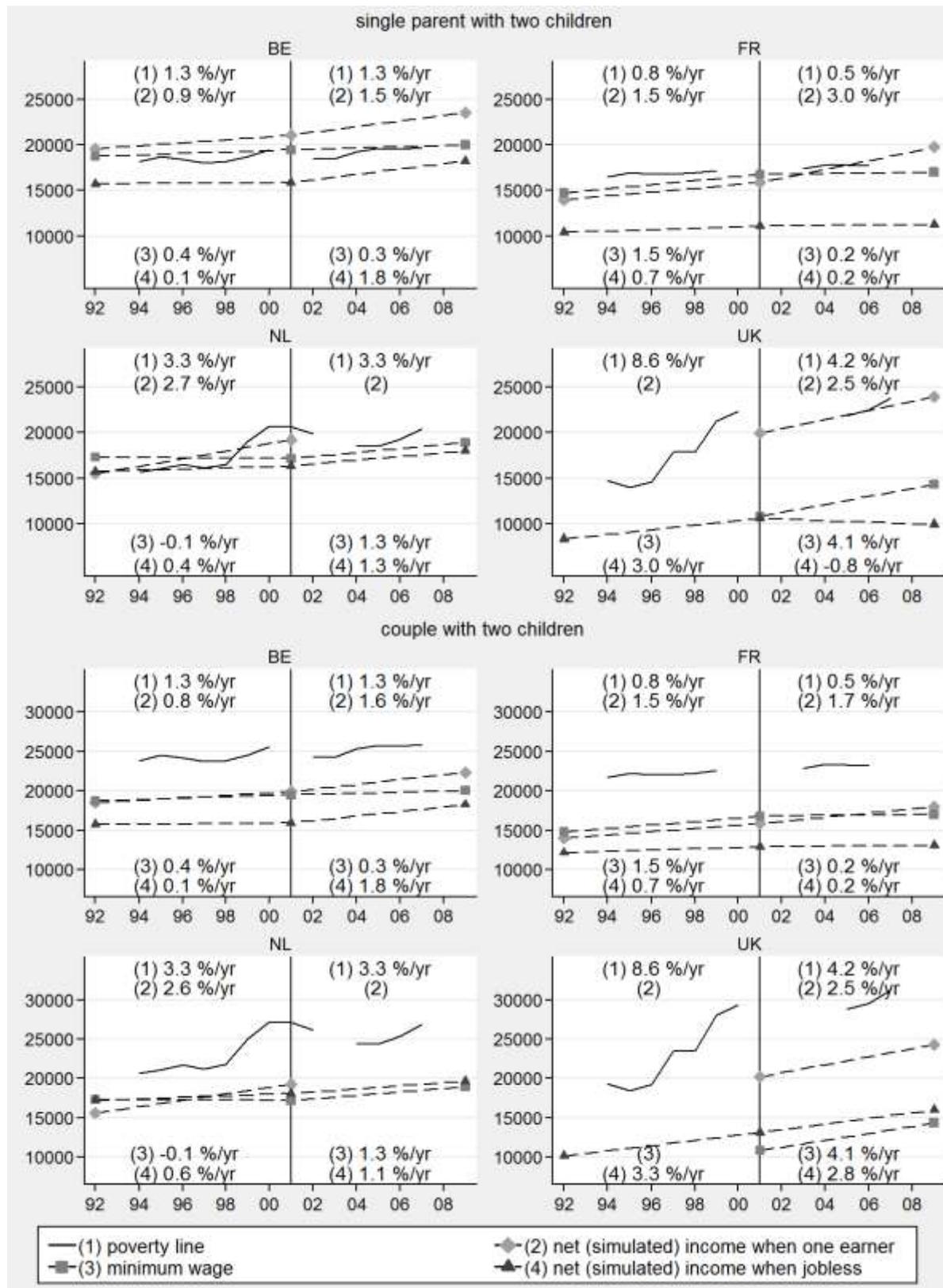
Note: see Table 1 and Figure 1.
Source: see Table 1 and Figure 1.