Poverty Dynamics in Europe:
From What to Why

Social Europe

This working paper analyses poverty dynamics in the European Union. It has been prepared by Maria Vaalavuo, PhD, of Social Analysis unit of Directorate General of Employment, Social Affairs and Inclusion. The work has been supervised by Radek Maly, Isabelle Maquet and Olivier Bontout.

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Summary

This working paper looks at poverty dynamics in Europe. Analysing poverty dynamics, i.e. incorporating *time dimension* to the analysis, helps to better understand the characteristics and various facets of poverty. In addition to looking at *persistent poverty*, it is important to look at the probability of exiting and entering poverty in different groups of the population and at poverty trajectories of the poor. This working paper presents empirical evidence on various issues related to poverty dynamics based on EU-SILC longitudinal data spanning from 2008 to 2012.

The results show great variations between countries even with similar at-risk-of-poverty rates when it comes to the duration of poverty and the probability of entering and exiting poverty. Furthermore, there are differences between age groups in the patterns of poverty exit and entry. This evidence mirrors the diversity of poverty experiences across and within countries.

These results are important for formulating effective policies in particular for those most at risk of a long poverty spell. Understanding better the transitions between different income status and the reasons for falling into poverty enables to better design preventive policies and to foster labour market policies that also work for lifting people up from low incomes. This paper also highlights the need for more in-depth analyses and further development of the longitudinal component of the EU-SILC data.

The paper is divided into five parts. The first part focuses on the time dimension in poverty research. The second part reviews recent literature on poverty dynamics. Some essential concepts and methodology for longitudinal analysis are discussed in part three. Empirical evidence from 28 European countries (26 EU countries, Norway and Iceland) is presented in the fourth part. The fifth part concludes with discussion on policy implications and suggestions for further development of the data and analysis related to the topic.

1. From who and what to why of poverty

Poverty headcount should be complemented with poverty trajectory

The at-risk-of-poverty rate (AROP) indicates the share of people with a disposable income below 60 per cent of the country's median income. It is one of the most commonly used social indicators in the European Union. More recently it has become an essential component of the Europe2020 target on reducing poverty and social exclusion.[1]

While trends in AROP over time can illustrate changes in social conditions and point to the weakness of the social protection system as well as gaps in the inclusiveness of the labour market, it fails to address the dynamics of poverty. *Poverty headcount* measured at one point in time does not disclose information on the past *poverty trajectory* of individuals. This is a weakness as it is increasingly acknowledged that poverty is not a static state but it develops over time.

The length of the poverty spell provides more information on the severity of poverty. The longer the individual stays in poverty, the greater is the likelihood for permanent social exclusion. Taking into account time dimension is fundamental in order to gain a more comprehensive picture of the phenomenon and of the policies that can be effective in fighting it.

Poverty as a life cycle risk is responsive to social policies

Since Rowntree's (1901) early study on poverty, it has been claimed that poverty risk varies with the life cycle: children, young families and elderly people face a higher poverty risk still in our contemporary societies. Despite the developments during the past century in individuals' and families' life and in the welfare states' effort to levelling life cycle up and downs in respect to social risks, the concept of a life cycle of needs and resources remains a useful analytical tool.

Researchers have, however, shown that this life cycle of poverty is not consistent nor very strong across different countries, and the design of social policies matters in altering this type of poverty cycle (Hedström and Ringen 1987; Kangas and Palme, 2000; European Commission, 2012). Furthermore, as Vandecasteele (2007:19) writes, with growing precariousness in the labour market and changes in divorce patterns and family forms, a greater number of people experience life courses that deviate from the traditional biography. With the so-called new social risks, new groups of people face the risk of poverty. Social policies need to be adapted to combat poverty associated with these risks. Consequently, countries vary greatly in the extent that e.g. the young, the low-skilled or single-parents are exposed to poverty in post-modern societies (Rovny, 2014).

Dewilde (2003: 122) makes a distinction between two notions that are connected to the idea of life cycle and life course: stratification *of* the life course and stratification *over* the life course. The first one considers how the State, the market and the family generate social differentiation or inequality between population groups, such as men and women, low and high skilled or different age groups. The latter notion relates to the processes of differentiation that take place over the life course. This reflects the idea of *cumulative advantage or disadvantage*, also known as the Matthew effect.[2] With sufficiently long panel data, it is also possible to look at this differentiation.

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[1] In June 2010, the European Union agreed to reduce poverty and social exclusion by at least 20 million people by 2020. The target group includes people at-risk-of-poverty, severely materially deprived people, and people living in households with very low work intensity.

[2] Matthew effect refers to the gospel of Matthew: "For unto every one that hath shall be given and he shall have abundance; but from him that hath not shall be taken away even that which he hath".

Temporalisation and democratisation of modern poverty

Time has traditionally featured in poverty studies in terms of poverty trends, seasonality, the timing of experiences, and historical accounts of poverty (Addison et al., 2009). Ulrich Beck, in his book *Risk Society: Towards a New Modernity* (1992), was among the first European academics to address the dynamic aspect of poverty. According to his sociological analysis, poverty is characterised in the modern society by *temporalisation* and *democratisation*.

The first one refers to the duration of poverty, be it short or long term or recurrent. It alludes to the depth or severity of poverty. The second one implies that poverty is no longer confined to the members of the lower socioeconomic classes or some marginalised groups, but reaches many more people – if only momentarily. In other words, social risks are shared by a wider population, but time may be the key to understand the experience. Consequently, Leisering and Leibfried (1999) describe a society where social risks are transcending traditional social boundaries. This means that in order to support the lives of an increasingly heterogeneous group of people welfare states need alternative policy measures and therefore, also more evidence on these people – the dynamics of poverty being one key aspect to consider in this regards.

However, contradicting the democratisation hypothesis, Pintelon et al. (2013) argue that the impact of social class is still relevant in the analysis of social disadvantage and poverty. According to their analysis, traditional stratification cleavages are connected to the occurrence of new social risks.

While the researchers are seemingly pointing to opposite directions, one could think that, on the one hand, poverty is reaching wider societal groups, and on the other, it still follows the stratification lines of the society in its most severe forms (e.g. persistence of poverty). This kind of hypothesis can be tested with a study concentrating on poverty dynamics.

The need to account for the length of poverty spell

The dynamic perspective in poverty analysis helps to better estimate how many people are affected by poverty at some point in time and how many people are not able to escape poverty over a longer period of time (see also section 3 on incidence and prevalence). It has been suggested that the *persistent at-risk-of-poverty rate*, defined as the share of people who are currently poor and were poor also 2 out of 3 previous years, could be employed together with the at-risk-of-poverty rate (Eurostat, 2015). This would allow identifying people who live with low income for long periods of time in contrast to people who face transitory poverty risk. This is however only a shallow description of the poverty dynamics and more can be done with the data at hand. This paper will exemplify these possibilities.

Another concept that is often used in the studies on poverty dynamics is *chronic poverty* that refers to poverty over life course. Different conceptualisations and operationalizations have been used to analyse the prevalence of chronic poverty (Hulme and Shepherd, 2003). Hoy et al. (2012) compare existing measures of lifetime poverty. They differ in how much weight is given to distinct poverty spells over individual's life. For example, Foster's measure characterises an individual as chronically poor if she spends at least a specified fraction of spells of her life in poverty regardless of how close these poverty spells occur. On the other hand, Bossert-Chakravarty-D'Ambrosio's measure weighs snapshot poverty experiences of a person differently depending on the timing of the spells; if the poverty spells are consecutive they are weighted more than when they are isolated (both measures described in more detail in Hoy et al., 2012). These indices are not used here as a 4-year panel would be too short to evaluate chronic poverty.

Longitudinal analysis can also shed light on how the living conditions of the poor – in comparison to the non-poor – develop over time. For instance, it is important to know

whether there is a gradual decline in incomes that is reflected also on material deprivation or whether poor people manage to avoid severe material hardship even if they do not manage to exit poverty. The issue of material deprivation will be looked at in the end of this working paper.

The serious consequences of long-term poverty

Policy-makers need to know who are at the risk of permanent poverty to better target preventive policies and design effective measures to eradicate social exclusion.

It is interesting to note that governments already talk about long-term unemployment – but not so often about long-term poverty – and a special effort is accorded to tackling it also at the European Union level. This might be a relevant re-focus for the EU efforts in fighting poverty as well. Plenty of multidisciplinary evidence demonstrates the nefarious effects of long-term poverty on physical and mental health, emotional well-being, child development, educational achievement, crime levels, future incomes, etc. (Duncan and Brooks-Gunn, 1997; Korenman et al., 1994; Power et al., 1999).

Children who grow up in poor families are more likely to become poor adults themselves, and the likelihood increases with longer exposure to poverty as a child. However, it is not completely clear from previous research if this stems from the time spent in poverty *per se* or from the characteristics of families and individuals who are unable to escape poverty in the short run. Intuitively it makes sense that longer term poverty can cause chronic stress and the effects of poverty grow more insidious in comparison to an experience of short period of financial insecurity.

American data shows that the share of poor at the age of 35 was 0.6 per cent for those who were never poor in childhood and 8.1 per cent for those who experienced poverty from 1 to 7 years during their childhood, while for those who endured long-term poverty (more than half of their childhood) the proportion was as high as 45.3 per cent (Wagmiller and Adelman, 2009: 5). In a Swedish life-course study, Bäckman and Nilsson (2011) found that precarious living conditions in childhood have a detrimental impact on school performance, health, and welfare receipt during adolescence and early adulthood. Long-term poverty in specific was associated with the negative outcomes. Similarly, Power et al. (1999) find that chronic exposure to poor socioeconomic conditions had an especially detrimental effect on adult health. These results illustrate that measures should be targeted to fighting long-term poverty and its consequences for children in particular.

2. Literature review

Two principal themes have been covered in the literature on poverty dynamics: 1) the duration of poverty, and 2) the determinants of poverty transitions. This part will briefly discuss the main findings related to the first category. A follow-up paper will review the second set of studies on the determinants of poverty flows at individual and societal level.

The duration and recurrence of poverty

Each social situation or "state" as they are often referred to in sociological research – such as unemployment, inactivity or poverty – has a duration that can be important for the consequent analyses. When analysing for example health or income, it might be important to see how long the individual was unemployed rather than just knowing that she was unemployed. In studies on poverty dynamics, the focus can be on the time person is affected by the risk of poverty. This is something interesting *per se*, but it can also have an impact on current and future well-being, labour market participation, health, and life satisfaction.

Long periods of low income are more serious than short periods when person at risk of poverty can rely on her potential former savings to cope with the situation, but when the

poverty spell gets longer, the additional resources are exhausted. Not taking this into account implies missing something important in the phenomenon. Furthermore, while it is important to know the number of people occupying a certain social state, information on the flow in and out of the state and the duration of the stay are often meaningful.

Previous studies with longitudinal data have already revealed high levels of mobility into and out of poverty (Bane and Ellwood, 1986; Stevens, 1994; Jenkins, 2000; Oxley et al., 2000; Valletta, 2006). This means that being at risk of poverty is a more widely shared condition than cross-sectional studies are able to show. Oxley *et al*. (2000) found that in six OECD countries studied the majority of the poor have only short spells of poverty; for those experiencing longer poverty spells, it is harder to exit. OECD (2001) calls this the paradox of poverty dynamics: "poverty is simultaneously fluid and characterised by long-term traps".

In a variety of contexts it has been shown that individuals with a past experience of an event, for example an accident or unemployment, are more likely to experience the event again than people without this past experience (Heckman, 1981; for social assistance receipt dependency see discussion by Immervoll et al. 2014). The same seems to be true for poverty: the experience of poverty in one year increases the risk of poverty the next year – thus, the poverty status in time t is not independent of the status in time $t-1$. This finding is important for the analysis of poverty dynamics. Moreover, it is obviously interesting from a policy perspective and highlights the necessity of such research.

It is, however, hard to prove that the relationship between the duration of the poverty spell and the exit probability is not spurious and purely a result of certain common characteristics – observed and unobserved – of the long-term poor. This is also an important element to understand in designing effective policies.

Andriopoulou and Tsakloglou (2011) studied the determinants of poverty transitions using European Community Household Panel (1994-2000). They found that in almost all 14 EU Member States studied, the probability of exiting poverty was inversely related to the duration of the poverty spell, and the effect was significant even after taking into account socioeconomic characteristics, demographic events, and unobserved heterogeneity across individuals. This would corroborate the hypothesis that duration in itself is an important determinant of poverty exit (see also Heckman, 1981, for a more in-depth discussion on state dependence and heterogeneity among individuals).

In addition, previous results show that a low exit probability is connected also to a high likelihood of re-entry to poverty, and those escaping poverty are more likely to become poor again than those who were never poor (Gardiner and Hills, 1999). A study on the US indicated that more than half of the people who exited poverty re-entered within five years (Stevens, 1994: 37; 1999). In Sweden 35 per cent of people who had experienced poverty re-entered poverty after five years and after twelve years half of them had re-entered (Mood and Jonsson, 2012: 9). Arranz and Cantó (2012) argue that an aggregate intertemporal poverty index should incorporate both poverty and non-poverty spell durations, because recurrent poverty is important in defining poverty dynamics. In general, their findings for Spain show that poverty exit and re-entry rates vary with personal and household characteristics while spell accumulation and the duration of past and current poverty spells are also relevant.

Unfortunately, the available EU-SILC data offers only a limited possibility to study recurrent poverty spells, even though it would be especially important to find policy solutions that are able to keep people away from poverty in a sustained way. To the extent that it is possible, the recurrence is looked at in this paper.

State dependence

A common finding in longitudinal social research is that the longer a person is in a given situation, the lower are her chances of leaving it. Two theories attempt to explain this finding (Heckman, 1981).

The first one is that this finding reflects *individual behaviour and attitudes, and the society's response to the situation*. Immervoll et al. (2014), in their analysis on social assistance dependence, review studies on *genuine* state dependence. There is more evidence that the underlying causes behind benefit receipt, rather than the receipt *per se*, are the source of state dependence. Unemployment, which is a typical cause of poverty as well, is likely to lead to benefit dependence because 1) the loss of human capital connected to long-term unemployment makes finding a job more difficult, 2) jobseeker's job readiness decreases because of worsening physical or mental health, 3) employers screen the potential employees based on their unemployment history and use unemployment as a signal of low productivity, 4) individuals' preferences change with unemployment, and finally 5) individuals lose self-confidence, motivation and self-control with more time spent in unemployment.

An alternative theory purports that it is the *selection process* that explains the finding of state dependence. People with certain characteristics – higher education, better social network, more work experience, etc. – are more able to leave poverty, benefit receipt, or unemployment quickly and those who remain in that situation are essentially different from the early-leavers. The decreasing probability of exiting poverty, social assistance or unemployment as time goes by is therefore a result of social selection – not of causation. This bi-directional causality is a challenge in longitudinal analysis when we are not able to control for all the unobserved heterogeneity between those who exit poverty quickly and those who do not. In short, causal inferences should be made with caution.

3. Longitudinal analysis: key concepts, data and methodological considerations

Incidence and prevalence

It is essential to make a difference between the number of poor at a given moment (incidence) and the number of people who experience poverty over a given period of time (prevalence). The type of poverty that prevails in a situation of low prevalence is more permanent than when prevalence is high, which indicates a more transient type of poverty. To put it simply, if for example on a given day of the week there are 100 poor, but during the whole week there are 700 people who have been poor (high prevalence), we know that there is a lot of turnover in the poor population. If however, there are 100 poor every day of the week and the number is about the same for the whole week (low prevalence), the poor stay poor the entire time.

Furthermore, the distribution of poverty over time and across population can influence the social experience and meaning of it (Walker and Leisering, 1998: 20). This has been shown for example in the case of unemployment: people experiencing unemployment during a period of high unemployment feel a lesser impact on their well-being as opposed to people who are unemployed during a period of low unemployment (Martikainen et al., 2007). To some extent, this is explained by the differential selection into unemployment in these two periods. In the first one, to put it bluntly, anybody could be unemployed, while in the second, a more selected group of people end up being unemployed – the same could be said of poverty.

Previous studies also illustrate that there is a positive relationship between poverty incidence, recurrence, and persistency. In other words, in countries with the highest levels of poverty, there are also more persistent or recurrently poor. In fact, the relationship between poverty rate and persistent poverty rate is nearly linear in the EU countries (see below Figure 6). This finding leads Jenkins and van Kerm (2013) to

wonder whether the EU's indicator of persistent at-risk-of-poverty risk should be supplemented or modified. If the indicator does not provide any new information it can be regarded as redundant. However, this finding also means that longer-term view of poverty is likely to heighten rather than dilute country variation in poverty (OECD, 2001).

Censorship

It is important to tackle the issue of "censorship" in longitudinal analysis. Right-hand censorship means that there is no information available on the termination of the situation, as illustrated by the case A in Figure 1. If the last data is from 2011, it is not possible to know what share of the poor in 2011 were poor in 2012 or later, as the only information available is on the exits from poverty until 2011 (cases B and C).

Left-hand censorship, on the other hand, leaves the beginning of the social situation unknown as illustrated by the case C in the figure. It is not possible to know when the poor got poor or when the period of unemployment started. In this case it is impossible to detect the differences in poverty spells between the currently poor: one will treat people with a continuing poverty spell on par with those who entered poverty that year.

In order to take left-censoring into account, Andriopoulou and Tsakloglou (2011) use only poverty spells that start during the observation period (like cases A and B) (same strategy is used by Stevens, 1994). Stevens (1999) examines the impact of left-censoring on the results. She includes the left-censored spells in her analysis of transition probabilities and finds out that the predicted exit rates do not change remarkably when left-censored spells are included. On the other hand, Iceland (1997) argues that omitting left-censored observations can lead to serious selection bias as it disregards individuals in the midst of long-term poverty spell.

As EU-SILC contains only 4 panels of data and already limited samples, analysing only poverty spells that start in 2009 or later and omitting all the poor of 2008 would restrict the sample size significantly and would also make impossible the analysis of 4-year transitions. Therefore, in this working paper all cases A-C are included in the analyses. With long enough data with bigger samples, it would be possible to focus on cases like B for which we know both the starting time of a certain state and the end date.

Figure 1. Censorship in panel data.
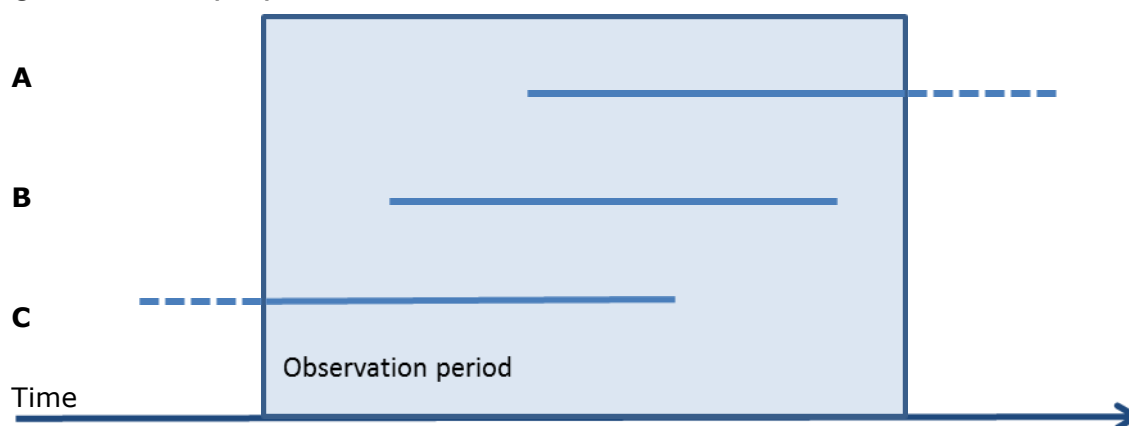
Pooled EU-SILC data used for the empirical analyses of the paper

The European Union Statistics on Income and Living Conditions, abbreviated as EU-SILC, is a rotating panel in which individuals are interviewed annually for a maximum of four times. The method of data collection varies across countries, and two groups can be distinguished: 1) countries relying on administrative registers (e.g. Finland and the Netherlands) and 2) countries relying on household surveys (the majority of countries).

In this working paper we have pooled the data from 2011 and 2012 datasets in order to increase the sample sizes. This means that the observation period spans from 2008 to 2012 (2008-2011 for EU-SILC 2011, and 2009-2012 for EU-SILC 2012). At the time of the publication of this working paper, there was no data available in the 2012 dataset for Croatia, Romania, Sweden and Slovakia. In addition, Croatia joined the data collection only in 2010, so there is no data for 3- or 4-year transitions. No German or Irish data were available when conducting the analyses. This leaves 26 EU member states together with Iceland and Norway for the current analyses.[3]

Pooling all the possible transitions together from all the years the data has been collected allows increasing the sample size to give more reliable results (similar method of pooling of data has been used in Van Kerm and Pi Alperin, 2013). Year-on-year or 2-year transitions refer to transitions from 2008 to 2009, from 2009 to 2010, from 2010 to 2011 and from 2011 to 2012, in other words a person present in the data for all four waves can have a total of three 2-year transitions. 3-year transitions refer to transitions from 2008 to 2010, from 2009 to 2011 and from 2010 to 2012. Finally, 4-year transitions include those who have been in the data for the total of four waves i.e. from 2008 to 2011 or from 2009 to 2012 (here, pooling together 2011 and 2012 datasets is especially important as the sample sizes are very limited for poverty research). Notably the sample of year-on-year transitions (2-year transitions) is sufficiently large to make statistical analyses concentrating on smaller sub-groups of population.

Table A.1 in the annex presents the sample sizes for these transitions. A more detailed table with age groups is also available (Table A.2).

Data for the analysis of dynamics

In **panel surveys**, such as the longitudinal component of EU-SILC, the same individuals reply at regular intervals to the same questions. This kind of data allows observing directly the changes in various aspects of life and trajectories related to e.g. education, income, and employment of these people. While this kind of data is the most suitable for analysing any dynamic phenomenon, the downside is that the data collection is expensive and laborious. Consequently, the coverage of topics must be limited.

In addition, there is the problem of attrition, which refers to the depletion of sample size as some individuals disappear from the data for one reason or another. However, the bias caused by attrition is rarely fatal and weighting improves the reliability of the analyses (Walker and Leisering, 1998: 26). In EU-SILC, sampling weights are calculated by Eurostat and they are included in the data. The weights adjust both for bias due to cross-sectional non-response and attrition from one wave to the next.

The **US Panel Study of Income Dynamics (PSID)**, having its first wave of interviews in 1968, is the longest running longitudinal household survey in the world. More than 3 200 peer-reviewed studies have already been based on this rich data (McGonagle et al., 2012). The PSID was an inspiration for many other countries and for the European-wide panel data collection.

The European Community Household Panel (ECHP) provided longitudinal data from 1994 to 2001 for 15 EU member states. After a gap, in 2005, the European Union Statistics on Income and Living Conditions (EU-SILC) replaced the ECHP. The ECHP has been used to study poverty and income dynamics in the past (e.g. Vandecasteele, 2007).

In addition to panel surveys, some other tools are also available for studying dynamic phenomena. These include **life history surveys**, such as the Survey of Health, Ageing and Retirement in Europe (SHARE), in which respondents' life trajectory is put together in a retrospective way. While this type of data collection often offers rich data,

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[3] When "EU average" is used in the paper, it refers to the average of all 28 countries studied (thus, includes Norway and Iceland).

respondents' recall of past events may be inaccurate and the sample is biased towards the survivors.

Administrative data can also provide rich data for dynamic analysis, but it often lacks many interesting aspects and is usually available in limited number of countries. However, such register datasets have been used especially in the Nordic countries where such data is available.

Measuring income in EU-SILC

The income reference period in EU-SILC is the calendar year preceding the year of the data collection. In 2011, the income refers to 2010. For the UK, the income reference period is around the date of the interview. Some other variables in the dataset refer either to the income reference period or to the time of the interview. The correct variables need to be used to have corresponding reference periods.

As the standard method in income analysis, the unit of observation in the following analyses is individual, but income is based on total household income equivalised for the size of household using the modified OECD equivalence scale. Income definition used is also the standard disposable income, referring to income after taxes and social transfers. For the analysis of income development, the monetary values are expressed in 2012 prices using Harmonised Index of Consumer Prices (HICP).

The poverty threshold is the official threshold calculated by Eurostat, referring to 60 per cent of the country's median income in each year between 2008 and 2012. In some analyses, also 50 per cent threshold is used. Poor people, or people at risk of poverty, are identified as those who have an equivalised disposable income below the threshold. Poverty status is calculated separately for each year for which there is available data. "Persistently poor" are defined as currently poor people who were poor also two out of the three precedent years (only available for those individuals who are present in 4 data waves). "Long-term poor" are people experiencing poverty for four (or more[4]) years (i.e. the maximum years we have data for).

When the sample sizes allow, the population is divided into three groups: 1) children below 18 years old, 2) adults aged 18-64 years, and 3) seniors above 64 years old. The limited size of the sample made the use of further sub-samples, such as single parents, unreliable at the country-level, but could be used for a European average.

Jenkins and van Kerm (2013) have observed some inconsistencies between cross-sectional and longitudinal data of EU-SILC (2013). In Figure 2 (see also Table A.3. in annex), the correspondence between poverty rates from cross-national data (based on Eurostat's official figures) and longitudinal data is presented. Poverty rate is calculated for those present in the longitudinal data during all four waves. For some countries, we find clear differences in poverty rates. In most countries, the Eurostat poverty figure is much higher (especially in the Nordic countries with lower levels of poverty) indicating that attrition from the data collection affects poor people especially. This should be kept in mind when interpreting the results.

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[4] As we do not have information on the poverty status before the 4-year observation period, we do not know if people poor in the first wave of the data collection were poor already before, hence they might have been poor for more than 4 years.

Figure 2. Correspondence between poverty rates, 2011.
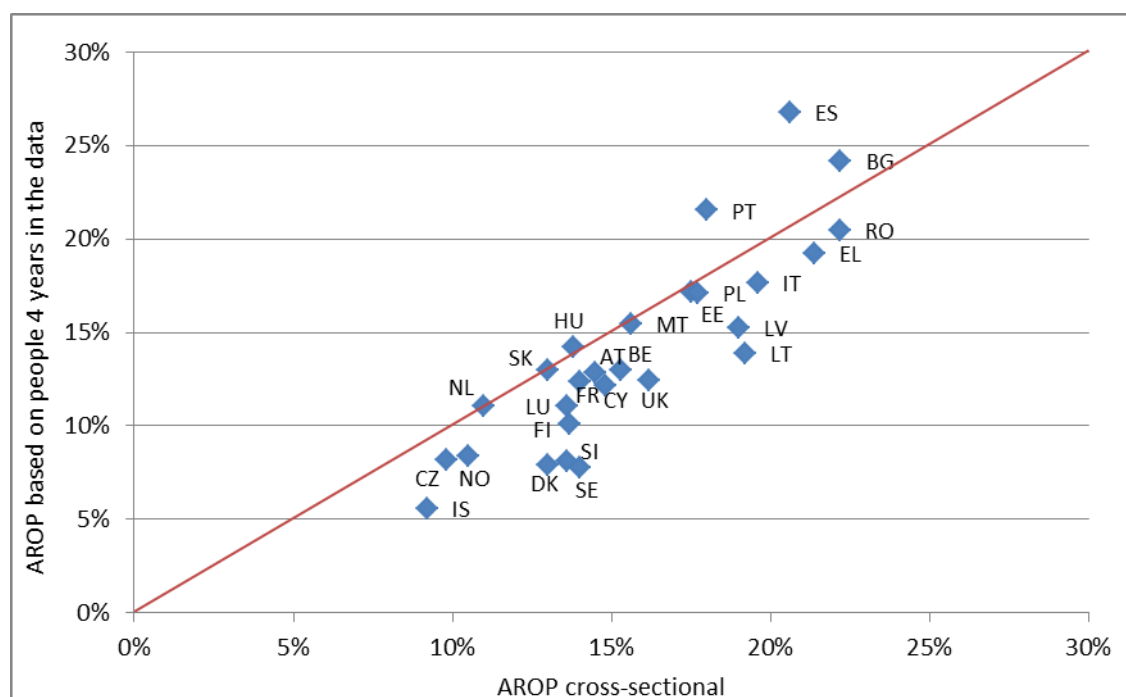
Note: Longitudinal poverty rate on the y-axis calculated for people with 4 waves of data.

Source: AROP cross-sectional from Eurostat [ilc_li02], AROP longitudinal based on author's calculations [Eurostat, EU-SILC 2011 UDB].

4. Evidence on poverty dynamics using EU-SILC

More people are affected by poverty than we commonly think

Using ECHP's eight waves, Andriopoulou and Tsakloglou (2011: 8) find that in all countries studied the prevalence of poverty is almost double of the headcount ratio.[5] In Greece and the UK, over 42 per cent of the population were poor at least one year in the period of the study.

Figure 3 below presents the finding using the 4 waves of EU-SILC data. Prevalence and incidence are correlated, while some outliers can be identified: most notably the UK, Romania and Bulgaria. In Romania and Bulgaria, there are low rates of flow into and out of poverty, while the high prevalence compared to incidence in the UK indicates higher than average transition rates.

Poverty concerns the population most widely in Spain where 45 per cent of the population experienced poverty at some point between 2008 and 2011 or 2009 and 2012. Other countries with high levels of prevalence are Latvia, Greece and Lithuania. Even in the countries with the lowest poverty rates, such as the Netherlands, Norway and the Czech Republic, poverty prevalence during the 4-year observation period was over 15 per cent of the population.

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[5] See part 3 on discussion of incidence and prevalence.

Figure 3. Incidence and prevalence of poverty: people at risk of poverty in 2011 and people at risk of poverty at any point in time during the 4-year observation period.
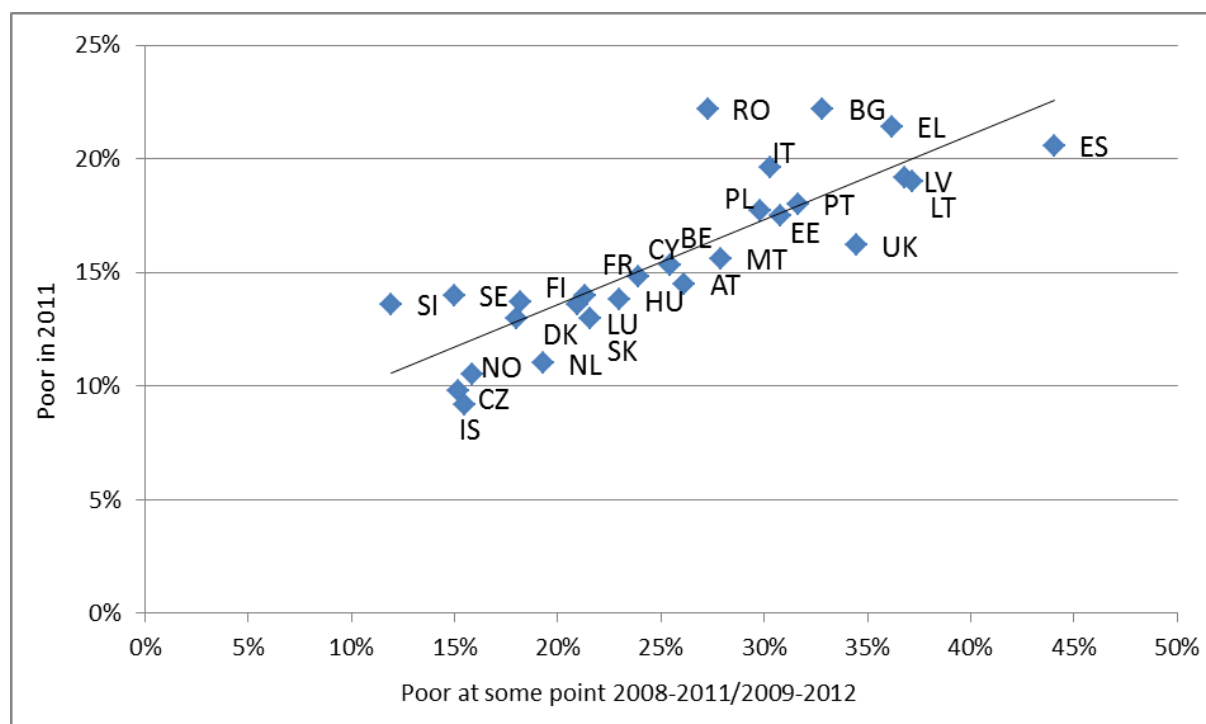
Note: People who are present in the data for all 4 waves in the 2011 or 2012 datasets.

Source: Poor in 2011 from Eurostat [ilc_li02], poor at some point based on author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Information on the duration of poverty enriches understanding of poverty patterns in Europe

Figure 4 illustrates the duration of poverty for those people for whom we have data for the total period of 2008-2011 or 2009-2012 and who were poor at some point during this period. On average, 37 per cent of the poor were poor for only one year, while more than a fifth of the poor were poor during all four years observed.

The variation between countries is considerable. In Romania, nearly half of the people stay poor during all four years (or more), while in the UK only around one person out of ten stays poor for four years (or more). Some of the differences across countries are also counter-intuitive. For example, it may be surprising to find out that in the otherwise equal and rich countries like Finland, Slovenia and Norway, the poor have above-average likelihood to stay poor for four years or more. It illustrates a polarisation in the society: the risk of being poor is low, but those who end up in poverty are likely to be more marginalised groups (perhaps immigrants, people with mental health problems, etc.) who have hard time finding their way out of poverty. While even the wealthiest welfare states have to tackle the issue of poverty, the phenomenon can be quite different in the poor and rich countries. Information on the duration of poverty illustrates the severity of the problem.

Figure 4. Duration of poverty.
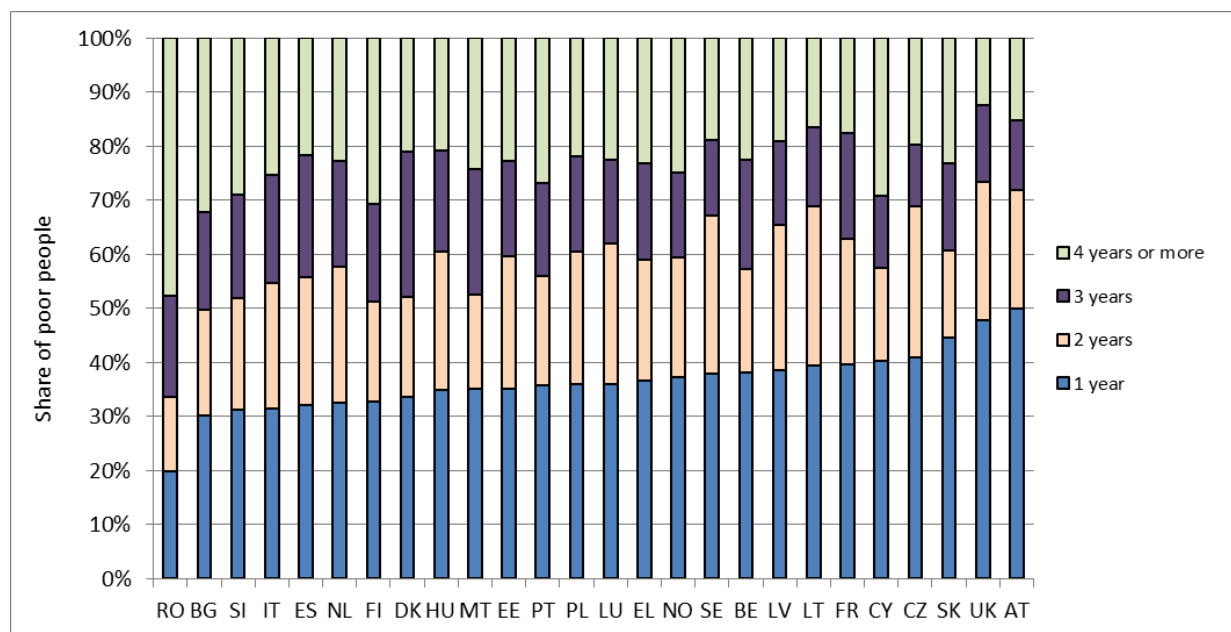
Note: People who are present in the data for all 4 waves in the 2011 or 2012 datasets. Iceland excluded for small sample size for those poor more than 2 years.

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Figure 5 gives us the same information but by age groups and showing only the poor who were poor for four or more years in 2008-2011 or 2009-2012. The countries are ordered according to the share of long-term poor adults (18-64 years old).

In some countries, the share of long-term poor varies remarkably across age groups. In Slovenia, Norway, Finland and Cyprus, the elderly people have a considerably higher risk of long-term poverty than other adults, while in Belgium, Portugal and Bulgaria children face a higher risk. It seems logical that old people have a higher risk of long-term poverty as their incomes are less likely to change once they are retired; however, in times of an economic slump, the pensioners are more likely to exit poverty precicely because their incomes are left unchanged, but the median income in the society decreases.

Figure 5. People at risk of long-term poverty (4 or more years) by age group.
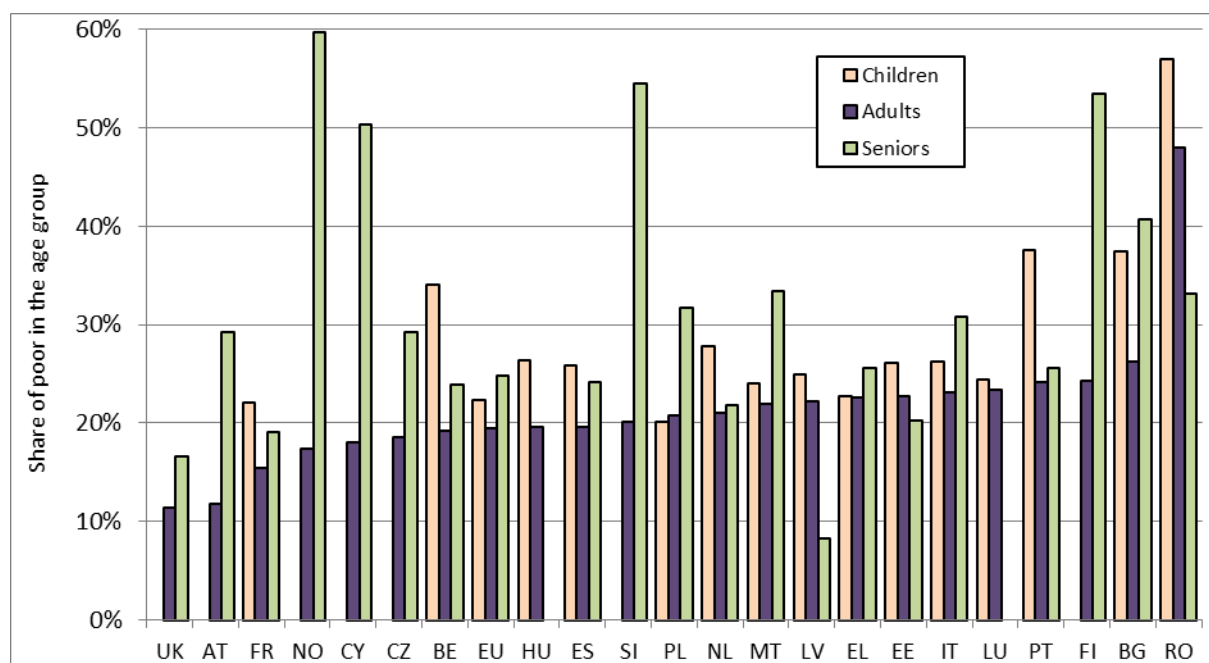
Note: People who are present in the data for all 4 waves in the 2011 or 2012 datasets. Countries with fewer than 50 observations (by age) excluded if applies to more than one age group.

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

As seen in Figure 6, persistent poverty rate, i.e. people currently poor who were poor also two out of three preceding years, is highly correlated with the poverty rate as measured traditionally (AROP), as highlighted by Jenkins and van Kerm (2013). Jenkins and van Kerm actually suggest that the persistent poverty measure currently used in the EU official statistics should be reconsidered for this reason. However, they also underline the importance of the longitudinal perspective, while stating that a 4-year time frame is too short for this. Furthermore, they question why we should limit our focus on individuals being poor on the fourth year when studying persistent poverty. Maybe illustrating poverty duration as done above in Figure 4 has indeed more richness in it.

Figure 6. High correlation between persistent poverty and AROP, 2011.
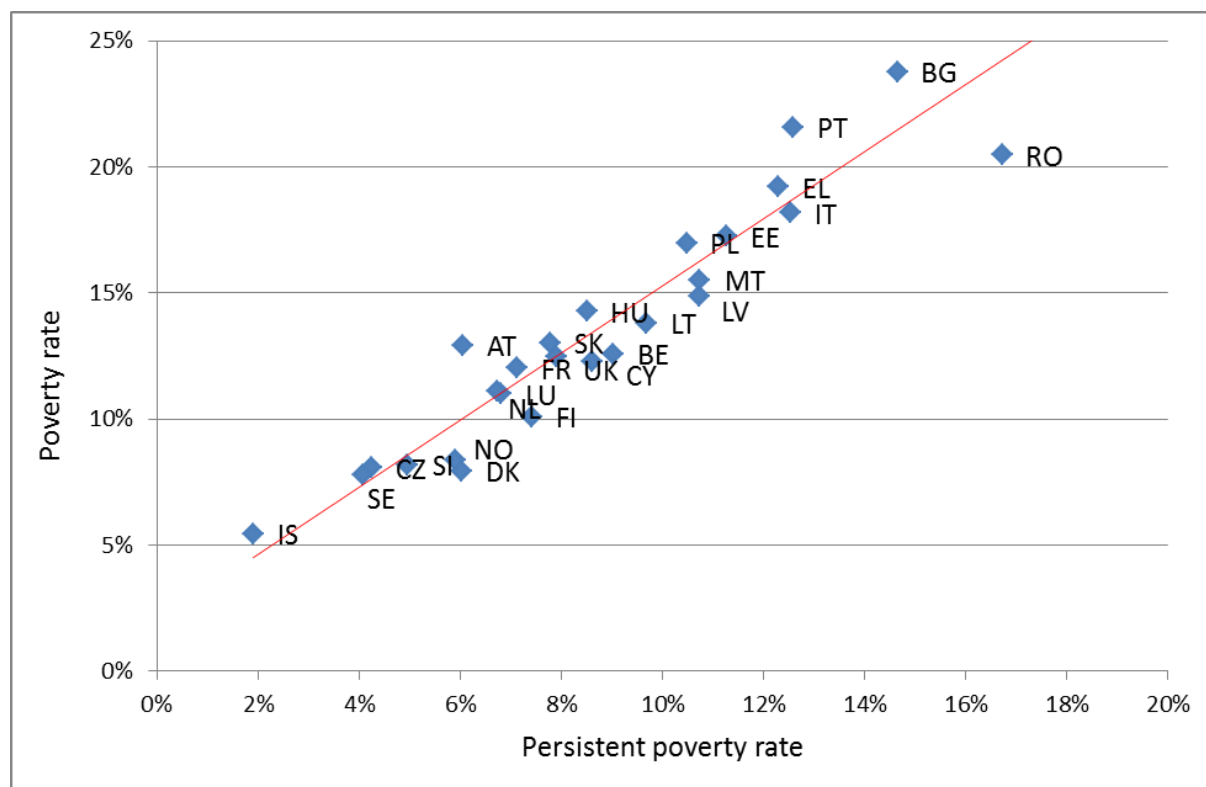
Note. Definition of persistent poverty (poor the current year and at least two out of three previous years) does not fully coincide with those poor for 4 or more years as shown in Figure 4.

Source: Author's calculations [Eurostat, EU-SILC 2011 UDB].

In Figure 7 we present the share of poor who are persistently poor (which might enrich the image of poverty better than the use of persistent poverty rate that Jenkins and van Kerm criticise). It appears that there is some heterogeneity in the association between AROP and the share of persistent poor. We can identify 4 groups of countries:

1) Countries with below average AROP (14%) *and* share of persistently poor (64%) (like Sweden and the Czech Republic),

2) Countries with below average AROP *but* above average share of persistently poor (like Denmark and Luxembourg),

3) Countries with above average AROP *but* below average share of persistently poor (like Greece and Lithuania), and finally

4) Countries with above average AROP *and* above average share of persistently poor (like Italy, Romania and Bulgaria).

In particular there are significant differences between countries that have similar levels of poverty, but very different dynamics. Countries with a similar AROP (on the y-axis) can have very different poverty dynamics (on the x-axis). For instance, Sweden and Denmark both experience low poverty rates (bottom side of the graph), but very different shares of poor who experience poverty over long periods of time. Similarly Romania and Spain on the top side have equal poverty rates, but in Spain the share of persistently poor is less than 70 per cent, while in Romania it is almost 80 per cent.

Figure 7. No correlation between the share of persistently poor of currently poor and at-risk-of-poverty rate, 2011.
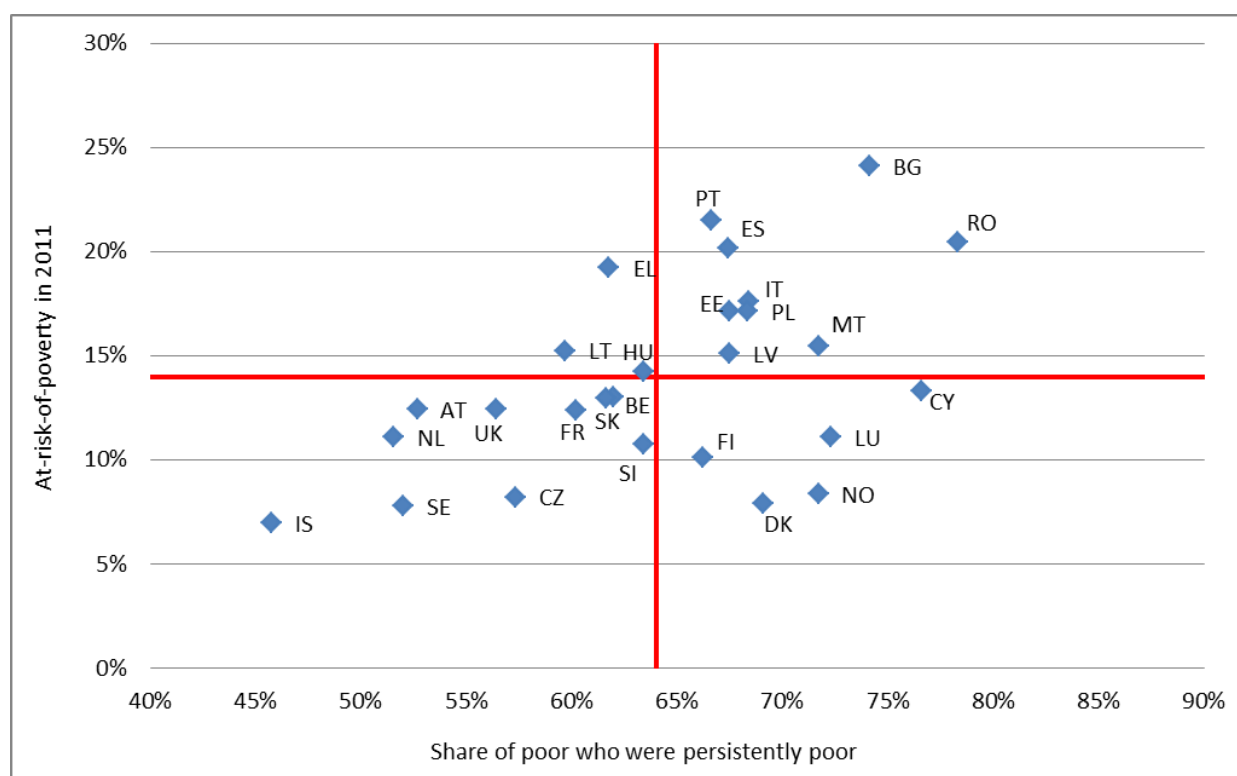
Note: Red lines denote the EU average. AROP in 2011 is based on cross-sectional data, share of persistent poor is calculated as a share of persistent poor our of all poor (with 4 four years of data).[6]

Source: Poverty rate from Eurostat [ilc_li02], share of persistently poor based on author's calculations [Eurostat, EU-SILC 2011 UDB].

Poverty transitions: exit out and entry into poverty (AROP)

In this section we present results in respect to the chances people have in exiting and entering poverty in different countries. More detailed information can be found in annex table A.4.

We illustrate the following poverty transitions:

1) individuals entering poverty (as a share of those who were not poor the previous year)

2) individuals exiting poverty (as a share of those who were poor the previous year)

3) individuals who remained poor (as a share of total population)

4) individuals who remained non-poor (as a share of total population)

Former calculations on year-on-year poverty transitions based on EU-SILC on exits from poverty between 2008 and 2009 (EU-SILC 2010 data), indicate that the average exit rate was 35 per cent for the EU as a whole (European Commission, 2013: 154). This corresponds to our estimate based on pooled data of an average exit rate for 26 EU countries and Iceland and Norway of 34.9 per cent.

Romania performs significantly worse than the average having an exit rate of 17.0 per cent; other countries far from the EU average are Bulgaria (24.9%) and Slovenia

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[6] As the number of poor in the 4 wave sample is lower than shown in the cross-sectional data it is possible that the share of persistent poor presented here is higher than it is in reality. Although, it might be that especially those with long-term experiences of poverty disappear from the data.

(26.2%). At the other end, the United Kingdom (49.3%) and Austria (41.5%) have the highest exit rates from poverty meaning that the likelihood of a shorter poverty spell is greater than on average in Europe. By the same token, the UK also has the second highest entry rate (8.9%), although higher still can be found in Spain (12.2%). The lowest entry rates are associated with the usual suspects, Denmark, Slovenia and Finland where AROP rates are lower than average.

Figure 8. No correlation between entry and exit to poverty (year-on-year transitions 2008-2012).
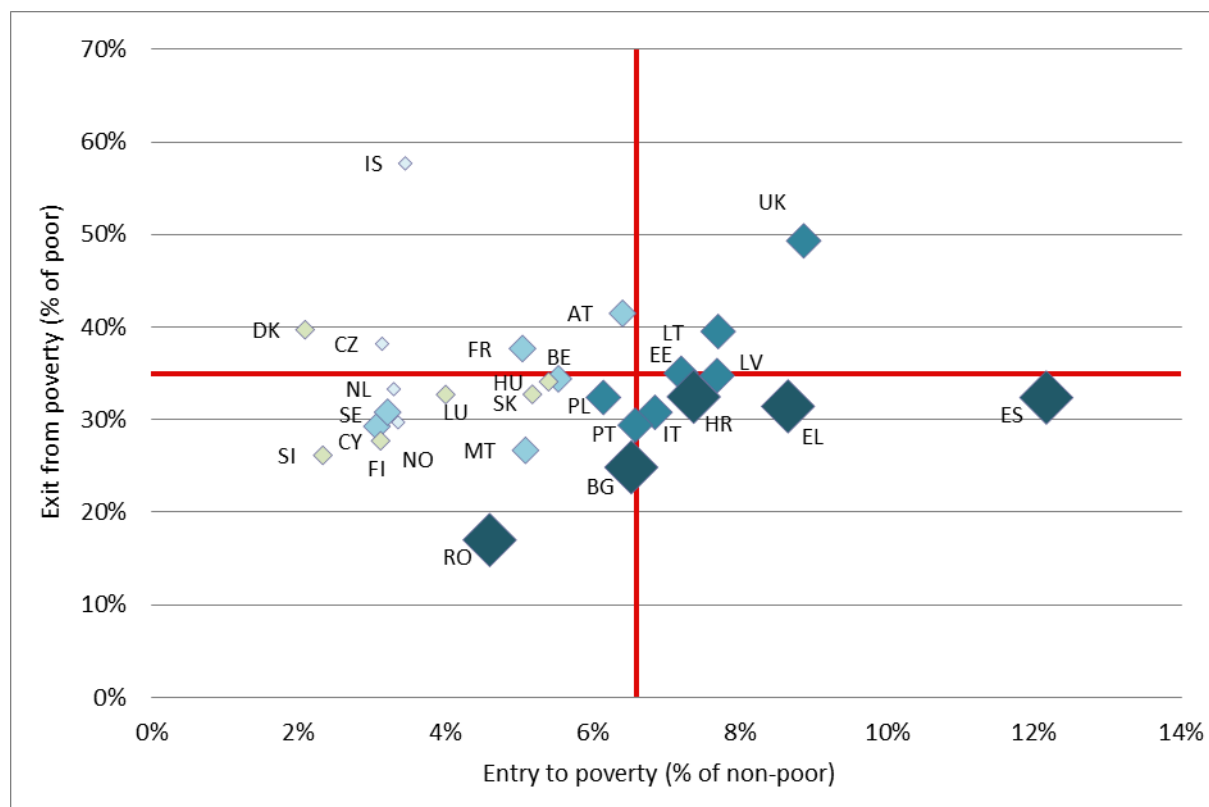
Note: Red lines denote the EU average. The size and colour of the marker correspond different AROP levels. The darker and the bigger the marker, the higher the AROP rate of the country. Entry is calculated for the non-poor as in Table A.4., and exit rate is calculated for those who were poor the previous year.

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

While there does not appear to be a correlation between exit and entry rates (Figure 8 above), countries can be divided in four groups:

1) Countries with low entry rate but also below-average exit rate (like Finland and Slovenia),

2) Countries with low entry rate and above-average exit rate (like Denmark and France),

3) Countries with high entry rate and below-average exit rate (like Greece and Spain), and finally

4) Countries with high entry rate but also above-average exit rate (like Lithuania and the UK).

The majority of people would probably agree that the ideal situation is the one in the upper left corner, representing countries with low entry rates and high exit rates. The

bottom right corner, in contrast, gathers countries where inflow to poverty is high and characterised by long poverty spells.[7]

Figure 9. Year-on-year entry and exit rates by age group, EU average.
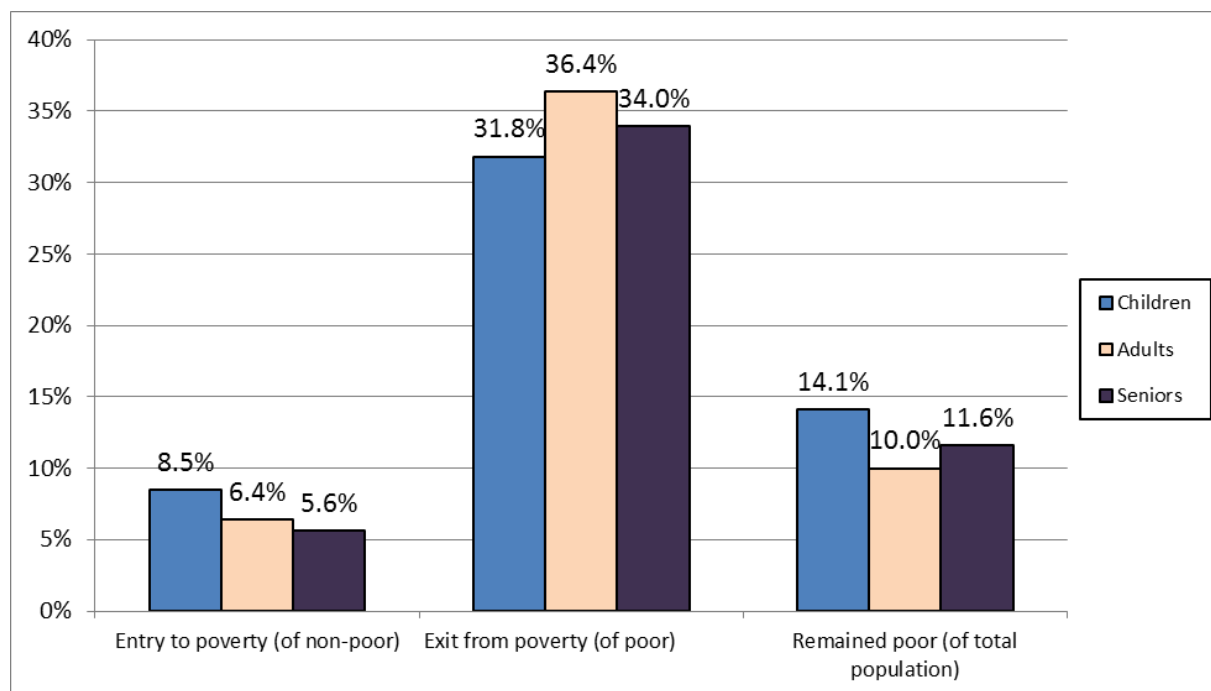
Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Figure 9 presents entry and exit rates by age groups (annex Table A.4 shows the rates by country, in addition Figures A.3 and A.4 compare the rates of children and seniors). Children have both higher entry rate to poverty (8.5% in comparison to 6.4% for adults or 5.6% for seniors) as well as lower chance of exiting poverty from one year to the next (31.8% in comparison to 36.4% for adults and 34.0% for seniors). This is naturally reflected in the share of children remaining poor, which is also higher than for other age groups.

While elderly people have a lower likelihood of entering poverty, the picture might be different if we were to look at the impact of retirement on the transition to poverty. After retirement, the elderly population's income remains usually quite stable and is mainly impacted by demographic changes in the household. However, it is interesting to see that 34 per cent of the elderly exit poverty every year. As mentioned before, this is logical for example amid of economic crisis when median income decreases but pensions necessarily do not.

Past poverty trajectory of the currently poor: "new poor" are a minority

Figure 10 illustrates the past poverty trajectory of the poor people for whom we have data from three waves (results for all countries together). On average 8.7 per cent of the poor were poor the previous year while an additional 62.0 per cent were poor also the year before the previous year. 8.9 per cent were recurrently poor, i.e. they were poor the year before the previous year but not the previous year. All in all, only around a fifth of the poor were "new poor", not having experienced poverty during the past two years.

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[7] See also Figure A.1 and A.2 in the annex for the relationship between entry rate and AROP and exit rate and AROP. Both entry and exit rate are somehow correlated with AROP, while there is also high degree of variation in entry and exit rates for countries with similar AROP levels.

Figure 10. The past poverty status of the poor, EU average.
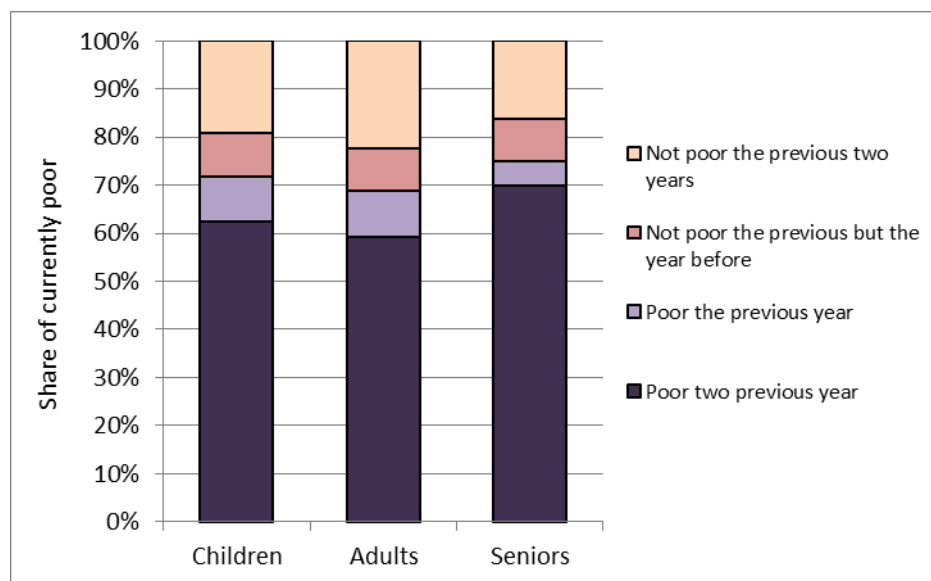
Note: People who are present in the data for 3 waves in the 2011 or 2012 datasets.

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

In most countries, more than 60 per cent of the poor children were poor also the previous year, and in many countries this exceeds 70 per cent (Figure 10 and 11). Furthermore, those who were poor the previous two years represent a non-negligible share of the poor children. While in some countries, the poverty rate for children is very low, like in the Nordic countries, it is important to note that those children falling under the poverty threshold may experience long periods of poverty, which obviously further increases inequalities between children.

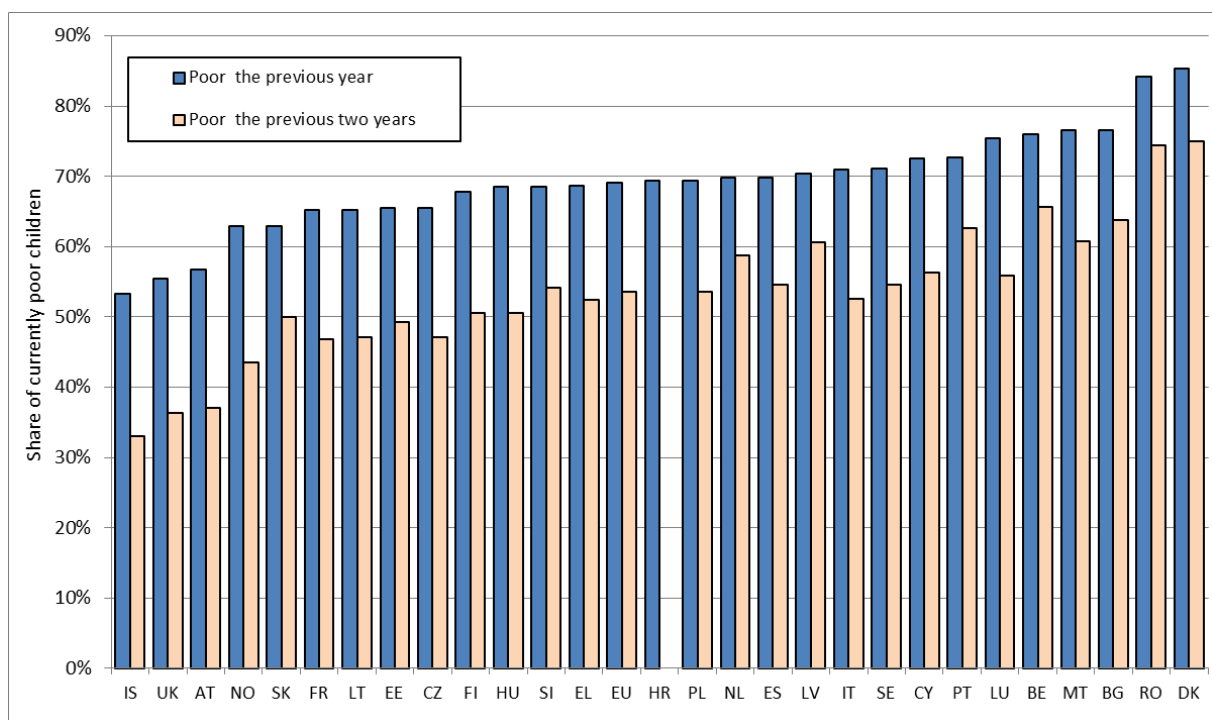**Figure 11. The past poverty status of currently poor children.**

Note: Children who are present in the data for 2 or 3 waves in the 2011 or 2012 datasets.

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

The probability of exit decreases with the time spent in poverty

Figure 12 illustrates how the probability of exit decreases with the length of the poverty spell.[8] When after one year of poverty (or, because of the censorship, at least one year of poverty), the exit rate is on average 34.2 per cent, it drops to 24.6 per cent after two years of poverty and to 21.3 per cent after three years of poverty. Similar decreasing exit probability is found by Stevens (1994: 35) who noted that in the US the estimated probability of escaping poverty decreases from 53 per cent in the first year to 36 per cent in the second year and finally to 20 per cent after five years of poverty, while there are notable differences across demographic groups.

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[8] It should be noted here, that due to the left hand censorship, we do not know exactly if those with one year of poverty in the first wave of data have already experienced poverty before taking part in the survey. With a longer panel data, it would be possible to include only people for whom we know the start date of poverty but with the current SILC data, it would mean looking only at the two following years.

Figure 12. The probability of exit decreases when time on poverty increases.
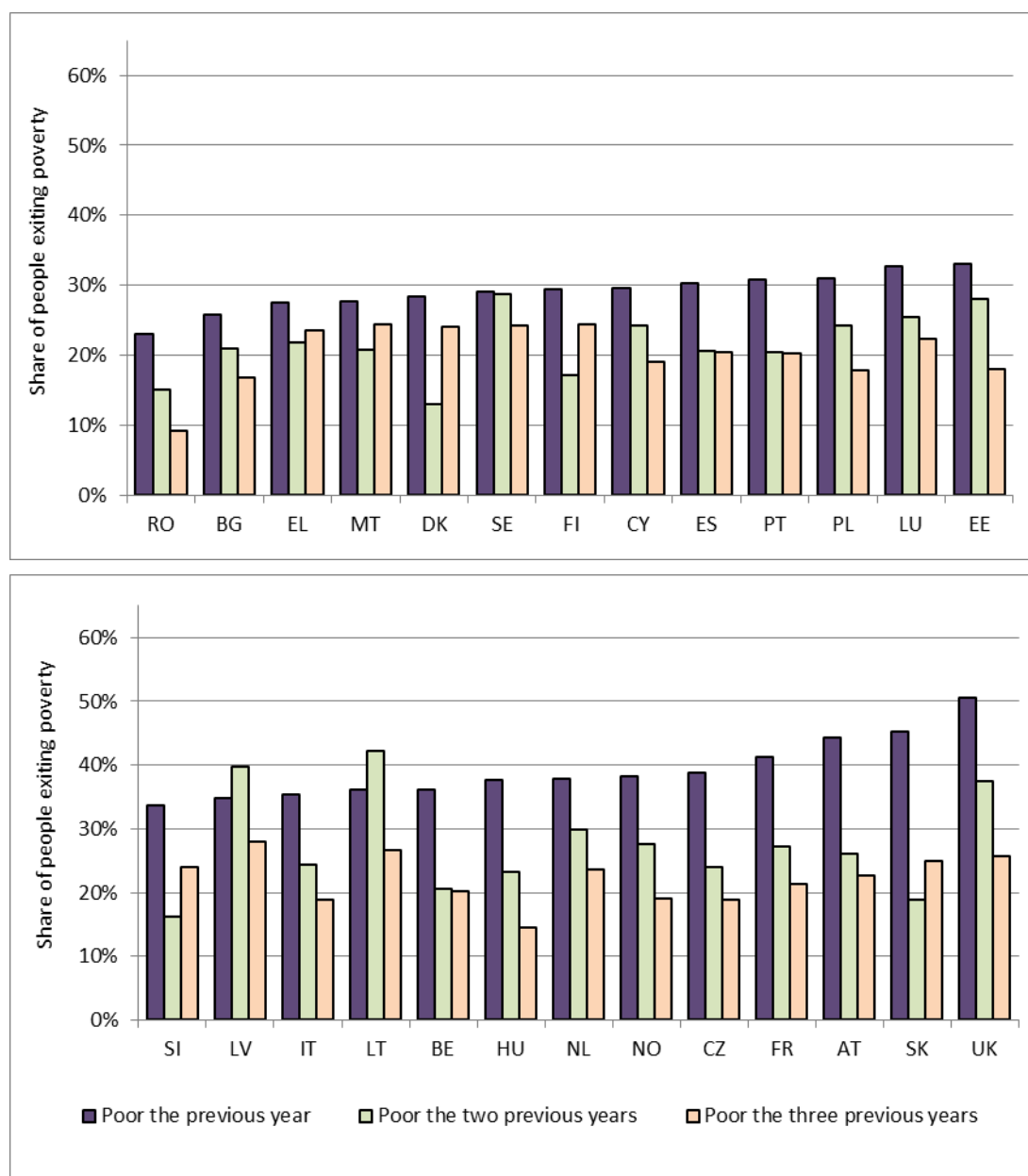
Note: Only people with 4 waves of data available included in the analyses. Iceland excluded due to small sample size.

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

The impact of a tighter threshold on poverty exits

Using a tighter poverty threshold (50% of median income instead of 60%) impacts the measure of poverty exits.

When we use a tighter poverty threshold, i.e. one based on 50 per cent of median disposable income as opposed to the conventional 60 per cent, the exit rates are higher (Figure 13). We see that income mobility at the bottom of the income distribution is relatively significant although often limited in range. Especially big differences in exit rates using the two thresholds can be found in the Netherlands (15.4 percentage points), Norway (13.8 p.p.), the UK (13.0 p.p.) and Belgium (12.7 p.p.). In the United Kingdom, more than 60 per cent of those with income below 50% threshold are above this line the next year.

As some of these people exiting poverty measured as 50% of median income might just make a small transition into poverty measured as 60% of median income, the figure also illustrates the share of poor (when threshold at 50%) who go over the 60% threshold. In all countries with the exception of Cyprus, more than half of these poor become non-poor also when measured with the higher threshold.

Figure 13. Exits from poverty when different poverty thresholds (50% and 60% of median income) are used.
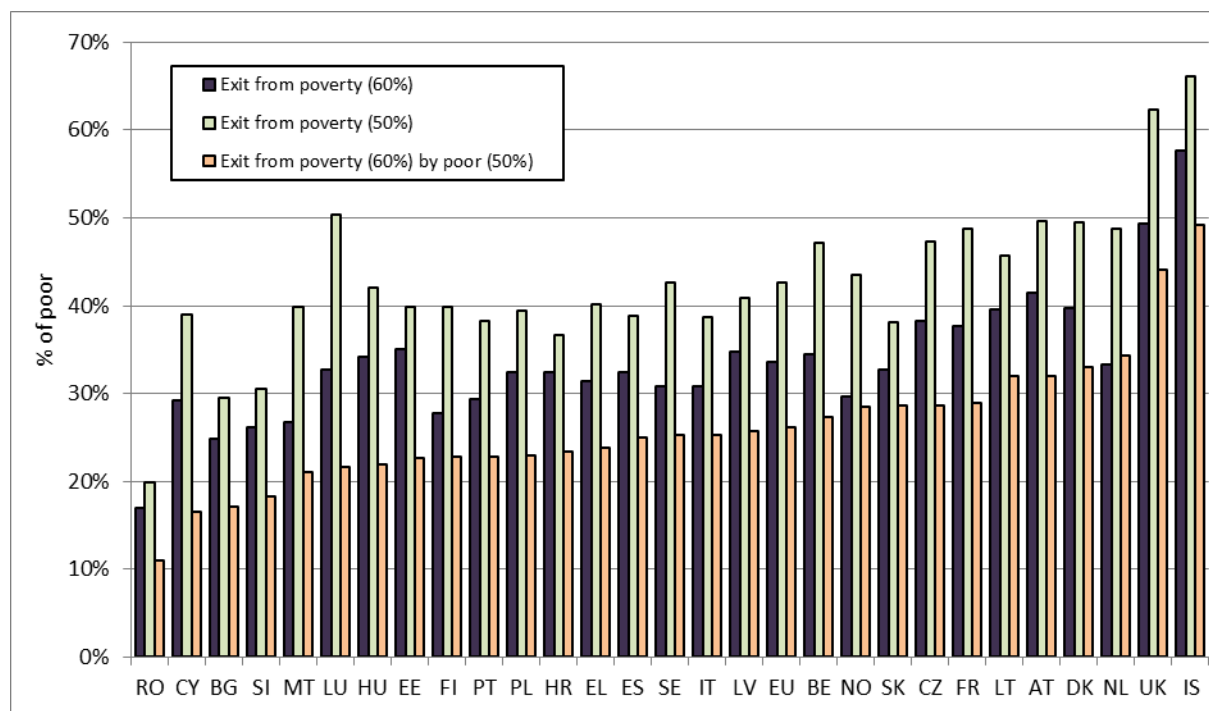
Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Fixed poverty threshold vs. current threshold and income mobility of the poor

Changes in relative poverty should also be viewed against the trends in the median disposable income, and consequently the changes in the poverty threshold, which varies especially during an economic crisis or recovery. For example, in the current economic crisis, household disposable income fell considerably in many member states. In such circumstances, the decrease in poverty rate does not necessarily reflect a real improvement in the living conditions (European Commission, 2013).

For this reason, poverty transitions can be calculated with a *fixed poverty line*. This threshold is set here at the 2008 level. The threshold and incomes are expressed in 2012 level for a comparison over years. As reflected in Figure 14, exit rates differ when poverty is measured according to fixed and current poverty thresholds. For some countries, the differences are significant, but, like in the case of Iceland, they can be connected to economic shock experienced in these countries. The use of fixed poverty threshold increases the chances of exiting poverty from one year to another in most countries.

Figure 14. Exit rate using fixed and current threshold, in order of difference between the alternative exit rates.
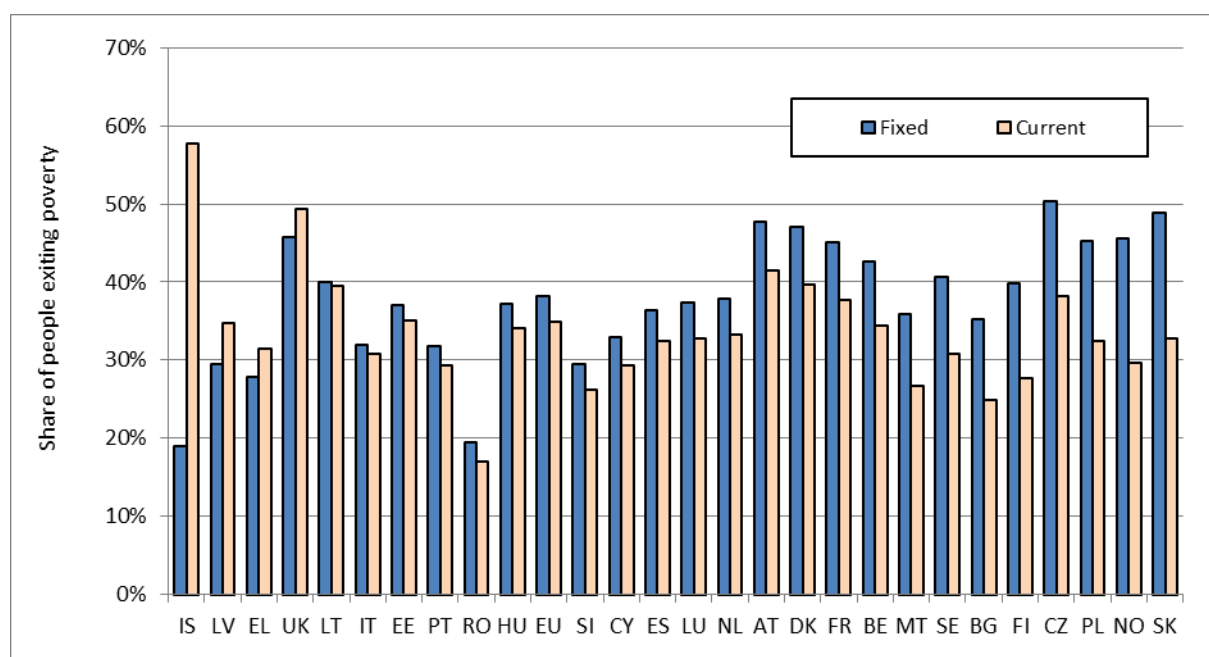
Note: "Fixed" is based on 2008 poverty threshold in 2012 terms. "Current" is the same exit rate shown in above figures based on the poverty threshold of the year in question.

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Related to this issue, Ellwood (1998: 55) has discussed "false events". They occur when we draw a more or less arbitrary poverty line and then measure movement into and out of poverty. For instance, when we count movements into poverty, we will treat someone whose income had been well above the poverty line and then fell dramatically, on a par with someone whose income was just slightly above poverty and fell by a few euros. Resulting from this, changes in poverty status need to be looked together with changes in absolute income of the person.

With longitudinal data it is possible to observe whether the transition into poverty was accompanied by an income shock and to what extent a transition reflects changes in the distribution of incomes. The same analysis can be done for transitions out of poverty to determine whether it reflects absolute improvement in incomes. In addition, it is possible to analyse whether the poor are getting poorer.

OECD (2001) has also analysed income changes associated with poverty transitions underlining that the majority of persons exiting poverty experienced significant income gains. In the study (based on ECHP), the poverty threshold was set at 50 per cent of the median income and the income rose above 60 per cent of median income for 70 per cent of those exiting poverty (see also Figure 13). Below in Figures 15-17 we look at the percentage changes from one year to the next in mean disposable income of different groups.

Figure 15 shows that in general the income change for poor and non-poor was quite similar within countries. In 11 countries, changes in disposable income were negative for both those who remained poor and those who remained non-poor. In some of these countries, the poor were harder hit (like in Greece and Bulgaria). In only two countries, Hungary and Slovakia, the poor experienced a reduction in income and the non-poor an increase in income. In another four countries (Lithuania, the UK, Iceland and Luxembourg), the opposite was true: the non-poor experienced a reduction in income and the poor a very small increase. In another 11 countries, the incomes of both the

non-poor and the poor increased, but in most cases very moderately, with the notable exception of Sweden, Norway and Poland.[9]

Figure 15. Change in mean disposable income of those who remained poor vs. non-poor, 2010-2011.
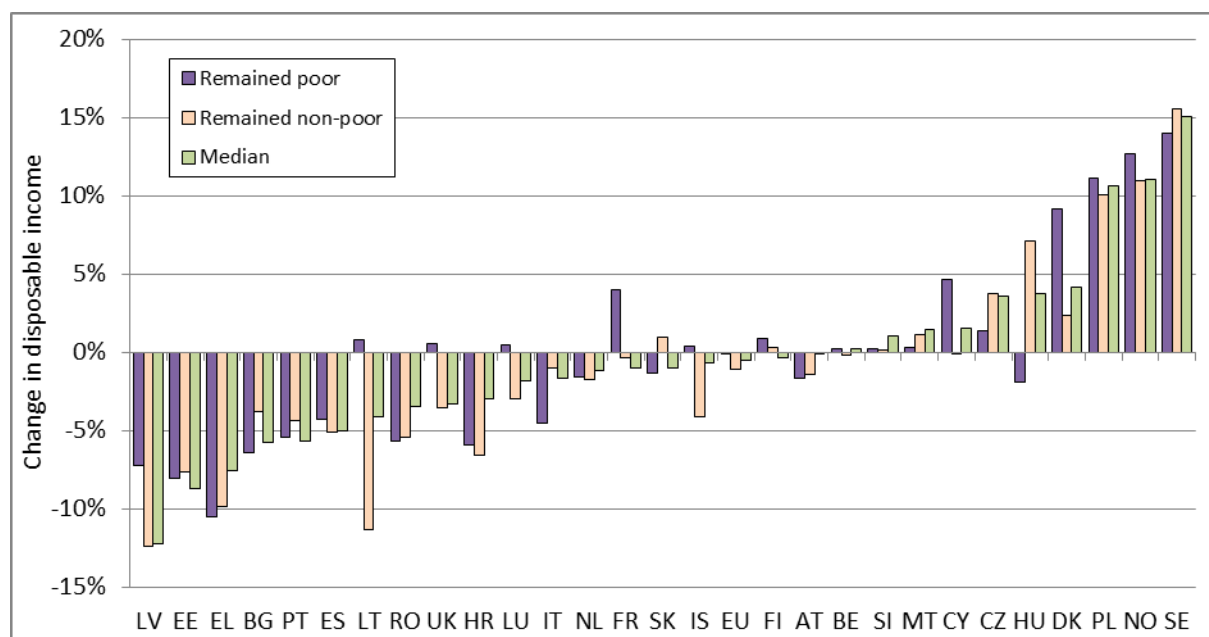
Note: Disposable income of negative value has been replaced by 0 in this and following figures on income change (for a discussion on such adjustments, see Van Kerm, 2006).

Source: Author's calculations [Eurostat, EU-SILC 2011 UDB].

There is a lot of variation between countries in the drop in incomes of the new poor (Figure 16). The biggest drop, close to 80 per cent reduction, is found in Denmark (the significant income differences from one year to another in Denmark can be to some extent connected to declared income from self-employment). Other high decreases in income are registered in Spain, Latvia and Lithuania. The smallest changes, around 30 per cent, are experienced in Sweden, Luxembourg and Cyprus. On average, 69 per cent of the people entering poverty had a decrease in income that was greater than 25 per cent.

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[9] It should be remembered here that the attrition of poor and especially the long-term poor from the data might affect the reliability of such calculations of income changes.

Figure 16. Change in median disposable income from previous year of those who entred poverty in 2011.
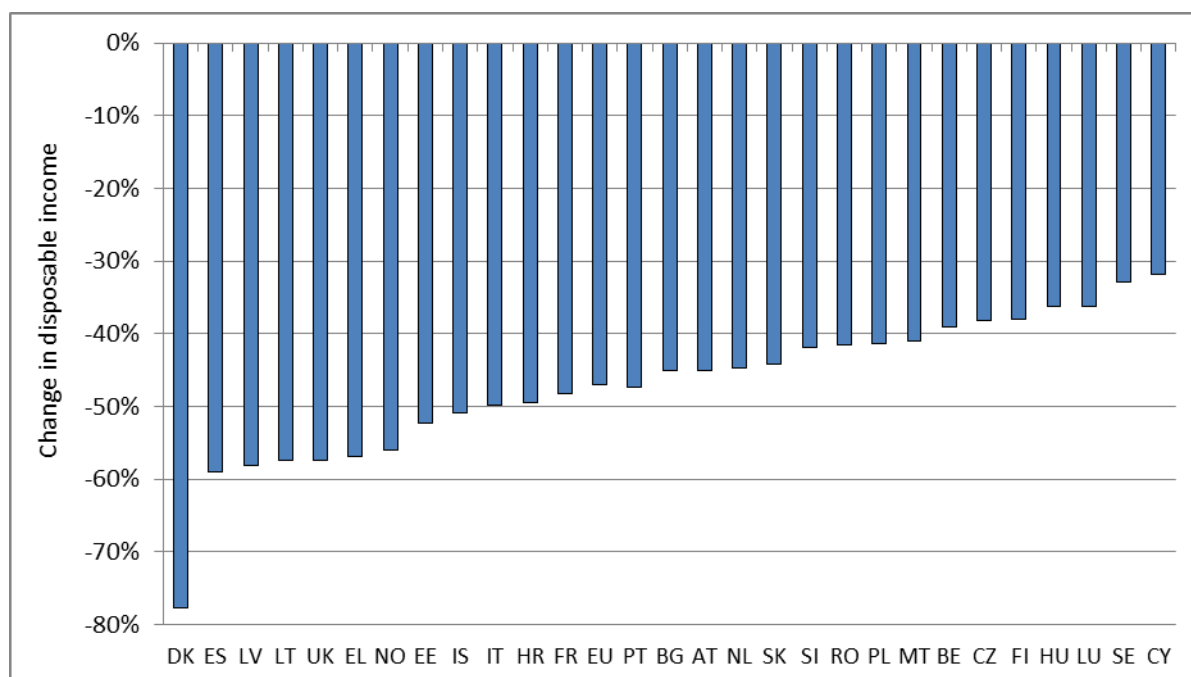
Source: Author's calculations [Eurostat, EU-SILC 2011 UDB].

On the reverse, the increase of incomes when exiting poverty varies also greatly (Figure 17). Interestingly, the country with the smallest reduction when entering poverty, Sweden, also has among the greatest increase in income when escaping poverty. On the other hand, Denmark with the highest drop when entering poverty has also the highest increase when exiting poverty. In other words, there seems to be no pattern in income changes when it comes to exit and entry. Similarly, levels of income changes are not connected to the AROP, although the drop in income when entering poverty is correlated with the entry rate (with some notable exceptions, like Denmark).

All in all, in all countries, the individuals who exit poverty experience a substantial increase in their income. On average, 73 per cent of those exiting poverty had an income increase of greater than 25 per cent.

These illustrations on income changes mean that transitions into and out poverty are associated with tumultuous income variation that is likely to affect people's well-being significantly.

Figure 17. Change in median disposable income from previous year of those who exited poverty in 2011.
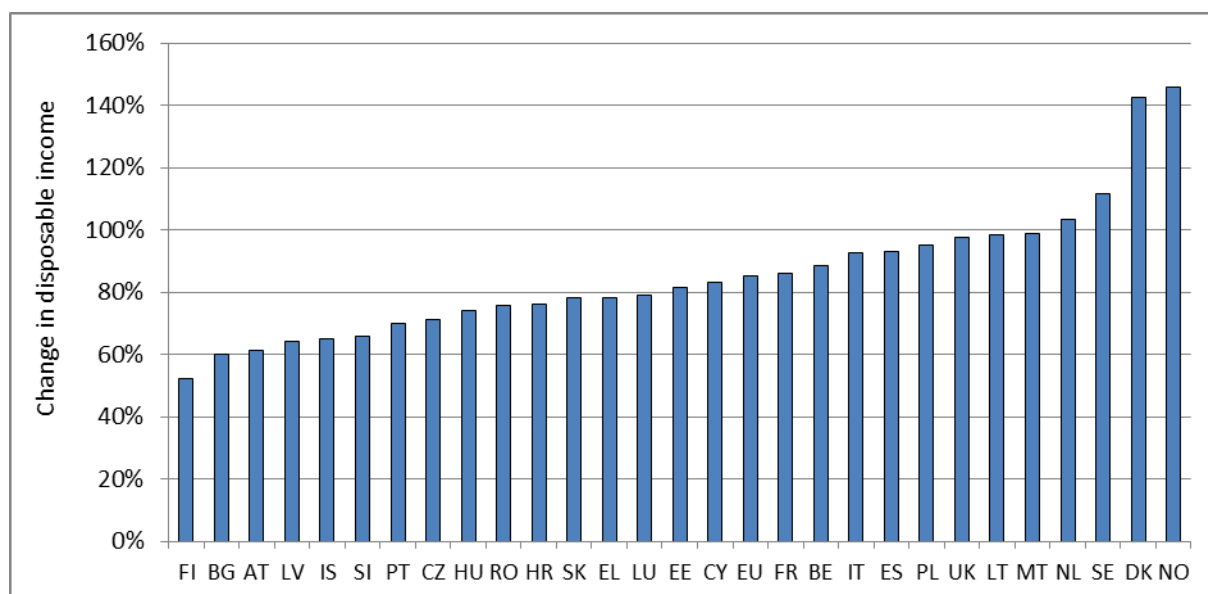
Source: Author's calculations [Eurostat, EU-SILC 2011 UDB].

Figure 18. Share of people experiencing an increase of greater than 25% in their disposable income (2010-2011).
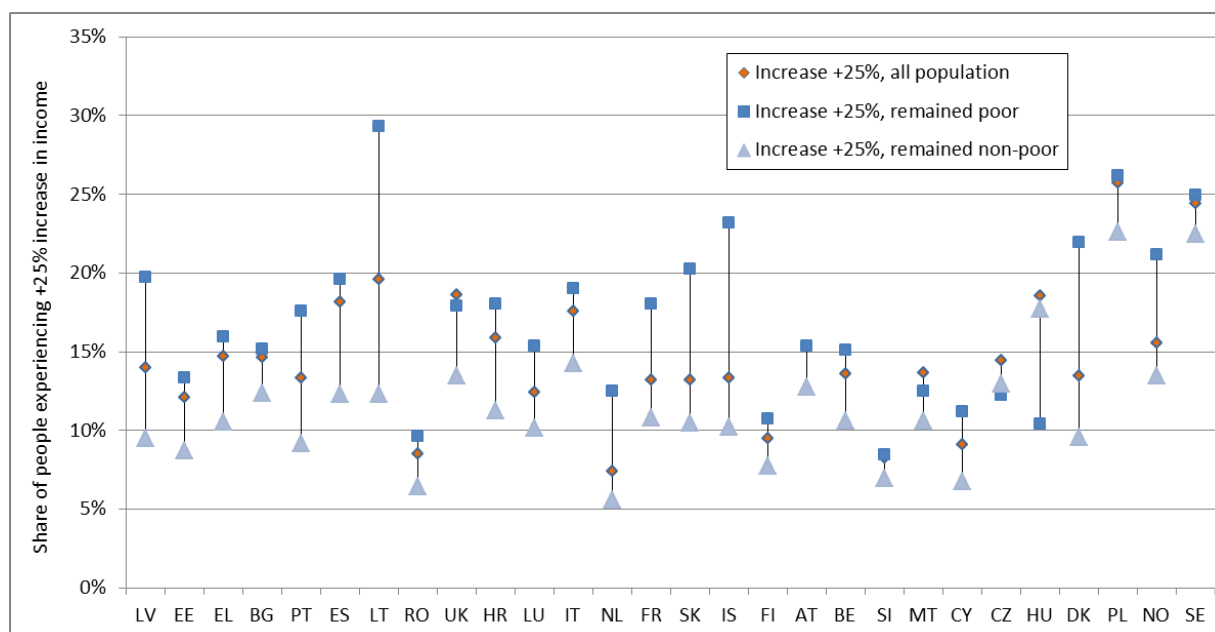
Note: Countries are ordered based on the median income change in the country. Latvia having the greatest median decrease in income (-12%) and Sweden having the greatest increase in median income (15%).

Source: Author's calculations [Eurostat, EU-SILC 2011 UDB].

Figure 18 looks at the increases of greater than 25 per cent in disposable income (Van Kerm and Pi Alperin (2013) also use 25 % income change to study income trends). In all but a few countries (namely, Hungary and the Czech Republic) people who remained poor in a two-year period of 2010-2011 were more likely to experience a substantial increase in their income – while still remaining poor – compared to people who remained

non-poor. On average 17 per cent of the poor experienced this kind of increase, while for non-poor the figure was 11 per cent.

On the other hand, it should be mentioned that more poor people than non-poor people experienced a decrease of more than 25 per cent in their income (respectively 15 and 9 per cent on average). This means that there is a great degree of variation, even polarisation, in the income trends among poor people. On average, about half of both the poor and the non-poor experienced any increse in their income (while the other half experienced a decrease). Figure 19 looks separately at the income changes of people who stayed poor in 2010 and 2011. In a majority of countries, a bigger share of poor experienced a substantial (+25%) increase rather than a decrese in their disposable income.

Figure 19. Share of people who remained poor and experienced an increase of greater than 25%, a decrease greater than 25% or any increase at all in their disposable income (2010-2011).

Note: Countries are ordered based on the median income change in the country. Latvia having the greatest median decrease in income (-12%) and Sweden having the greatest increase in median income (15%).

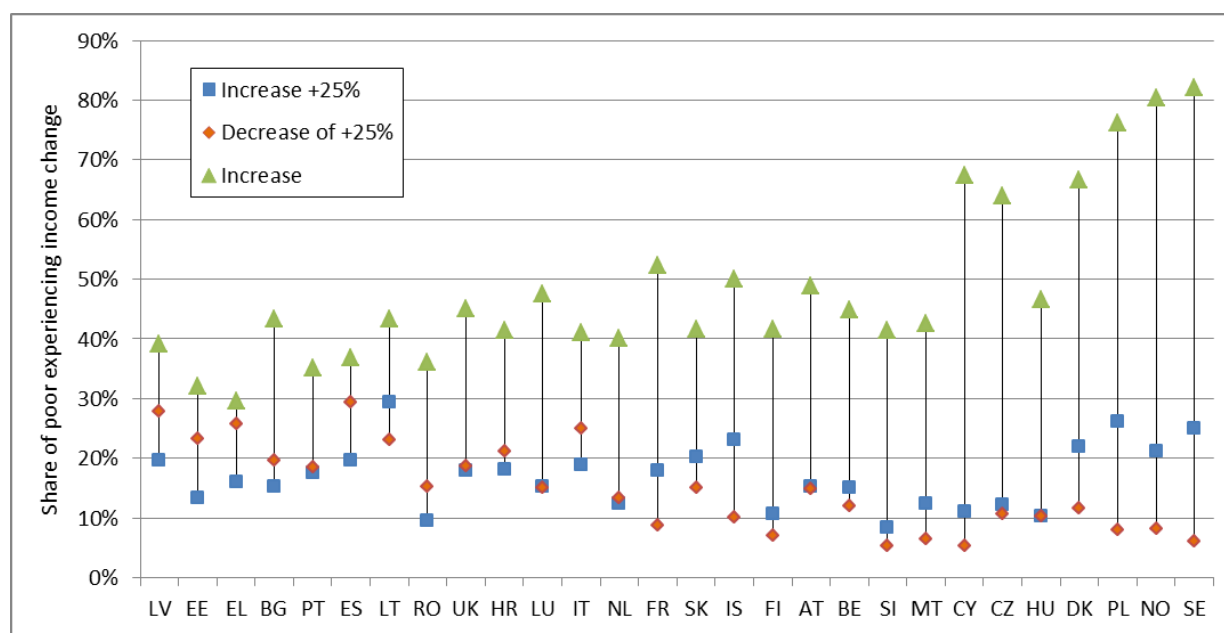Source: Author's calculations [Eurostat, EU-SILC 2011 UDB].

Long-term poverty can translate into material deprivation

An important aspect of poverty persistence is how it translates into material deprivation and exclusion from the consumption patterns that are deemed normal. Figure 20 shows the mean number of missing items (according to which material deprivation is calculated in the EU) for those who were not poor and for those with 1 to 4 years of poverty experience in 2011 or 2012. In all countries those with 4 years of consecutive poverty were more materially deprived than those with fewer years of poverty. The difference with non-poor and long-term poor was especially great in rich countries such as Luxembourg, Austria and Belgium. Poorer countries with overall higher levels of material deprivation show smaller differences between the poor and the non-poor.

Longitudinal data also allow analysing if the deprivation becomes more severe with time spent in poverty. It is possible to follow people who are poor for the total four years and see the development in material deprivation they report. In some countries, deprivation actually decreases (e.g. in Austria, France and Luxembourg), but in half of the countries it steadily increases each year even though the average level stays quite low (also see Table A.5. in annex).

Figure 20. Long-term poor are more materially deprived 2011/2012.
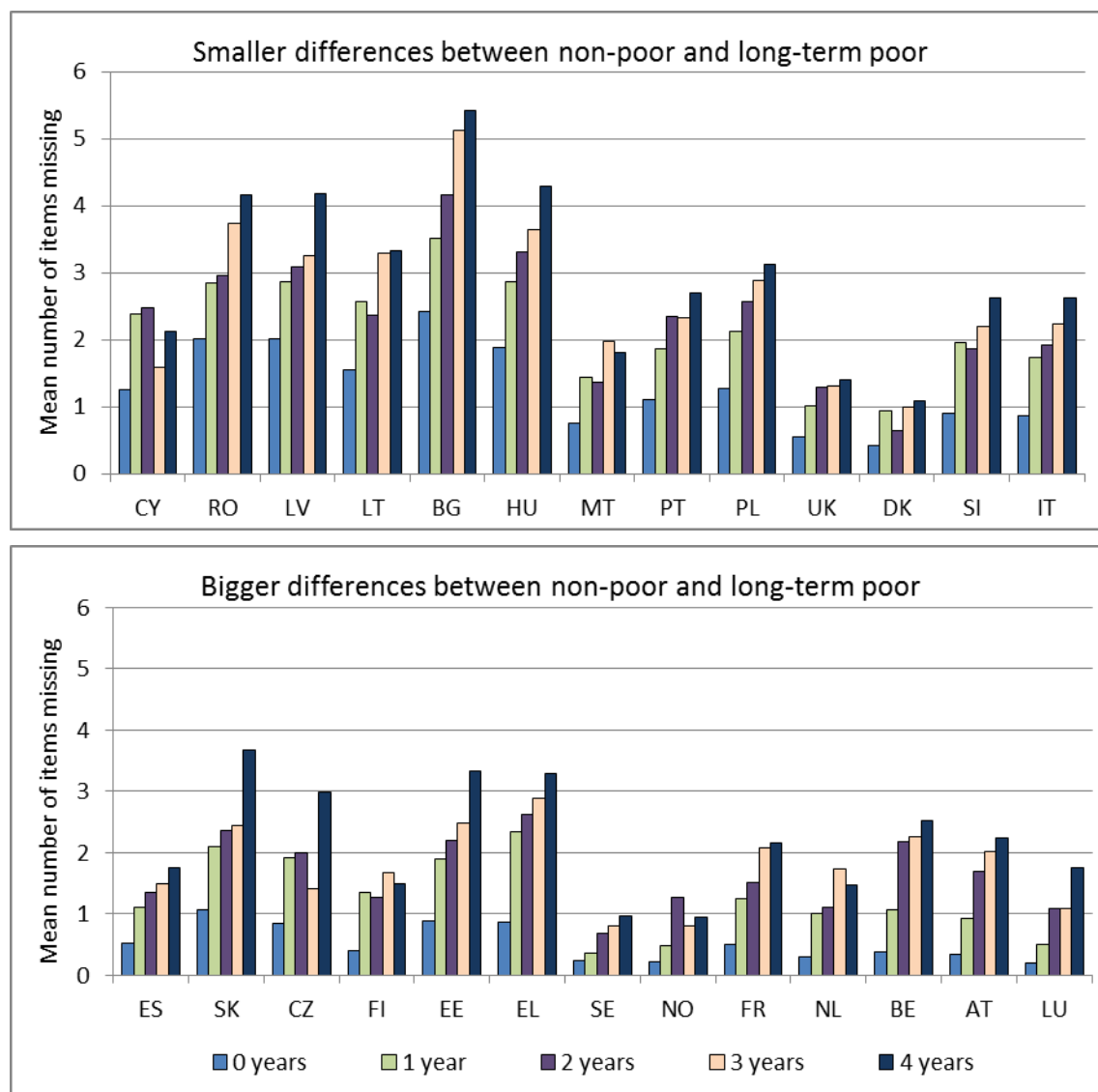
Note: People with four waves of data in 2011 or 2012.

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

5. Discussion

"A small peasant and a landless labourer may both be poor, but their fortunes are not tied together. In understanding the proneness to starvation of either we have to view them not as members of the huge army of the "poor," but as members of particular classes, belonging to particular occupational groups, having different endowments, being governed by rather different entitlement relations. The category of the poor is not merely inadequate for evaluative exercises and a nuisance for causal analysis, it can also have distorting effects on policy matters." (Sen, 1981)

The evidence presented in this working paper enriches the understanding of poverty dynamics in the European Union. It illustrates the heterogeneity in the poverty experience within and across countries. The main results of the analyses can be summarized in the following points:

The duration of poverty varies greatly between countries: on average 37 % of the poor are poor only for one year (out of 4 possible years), in the UK and Austria it is around

half of the poor and in Romania only a fifth of the poor. On the other hand, almost a fifth of the poor are long-term poor, experiencing low income for four or more years.

The likelihood of long-term poverty varies across age groups and countries: in Slovenia, Finland and Cyprus, elderly people are more at risk of long-term poverty, in the Netherlands, Belgium, Portugal and Romania children face a higher risk.

The at-risk-of-poverty rate and the persistent poverty risk are highly correlated. However, this correlation does not exist between the AROP and the share of poor who are persistently poor highlighting a great variation between countries: Iceland, the Netherlands, the Czech Republic, and Sweden are doing the best in terms of AROP and the share of poor who are persistently poor. Considering the evidence of negative impacts of long-term deprivation, even in rich countries more attention should be accorded to the share of poor who are persistently poor.

While the European average of entry rate to poverty is 6.6 % (of the non-poor) and exit rate is 34.9 % (of the poor), there is a remarkable variation between countries in year-on-year poverty transitions: the entry rate varies from 2.1 % in Denmark to 12.2 % in Spain, and the exit rate from 17.0% in Romania to 49.3 % in the UK. In accordance with previous studies, we find that the probability of exit decreases with the years spent in poverty. Therefore, early intervention and preventive measures are important for cutting the cycle of disadvantage.

A significant share of poor children is poor two or even three consecutive years in Europe. In countries with overall low poverty rate, this can illustrate an increasing inequality of life opportunities among children.

There is no general pattern of the rich getting richer and the poor getting poorer in Europe: various types of income mobility can be found. The results illustrate the heterogeneity among the poor.

People entering poverty have quite drastic drops in their disposable income, up to 50 per cent in Latvia and Spain. On the other hand, income increases considerably when exiting poverty (with over 60 per cent increases observed in Sweden, Lithuania and Denmark). In general, there is considerable income mobility at the bottom of the income distribution.

This working paper analyses poverty dynamics at the European level with the newest data available. While more analysis on the transitions remains to be developed, it needs to be stressed that sample sizes in the data restrict to a significant extent how refined analyses can be done. However, it is of crucial importance to identify the people at the risk of persistent and long-term poverty and, based on such evidence, design targeted prevention measures.

As seen above, the transitory and persistent dimensions of poverty vary remarkably between countries and also between different population groups. A better understanding of these relationships and patterns is a prerequisite for the design of effective policies. The children at risk of continuous poverty should, without a doubt, be the first group to target to break the cycle of intergenerational transmission of poverty because the negative consequences of long-term poverty for children have been demonstrated in many earlier studies. Country differences in the exit probabilities and the duration of poverty are partly connected to the differences in the poor population in each country, for example old people having less volatile incomes than students entering labour market.

Such a dynamic perspective also underlines the key role of proactive policy measures, like social investment, or preventive social protection and services. The results of these measures are only visible in the long run and thus, are not necessarily seen as a priority. A long-term approach in fighting poverty is however fundamentally important and should be a priority of sustainable social, health, education, and employment policy. To better support this policy-making, more analysis would be needed on the determinants of poverty transitions at the EU-level.

As has been repeated throughout this working paper, it is important to notice, from a more technical point of view, that panel data of four waves is insufficient for analysing recurrence of poverty or modelling probability rates for poverty transitions. In this respect, the possibility of extending EU-SILC data is in the interest of evidence-based policy. While the costs of such collection are significant, in the long term it would be an effective investment.

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Annex.

Table A.1. Sample sizes (individuals) in the pooled SILC panel data 2011 and 2012.

	Number of transitions		
	2-year	**3-year**	**4-year**
Austria (AT)	28,455	14,570	5,308
Belgium (BE)	26,865	12,974	4,619
Bulgaria (BG)	35,717	19,361	7,547
Cyprus (CY)	22,736	11,418	3,693
Czech Republic (CZ)	43,712	23,239	8,795
Denmark (DK)	19,025	11,035	4,136
Estonia (EE)	27,524	14,073	5,239
Greece (EL)	35,396	18,338	6,905
Spain (ES)	73,417	38,614	14,701
Finland (FI)	40,937	18,530	5,896
France (FR)	76,260	47,176	25,490
Croatia (HR)	7,584	:	:
Hungary (HU)	55,404	26,071	9,784
Iceland (IS)	14,898	7,738	2,940
Italy (IT)	95,614	49,032	18,807
Lithuania (LT)	27,321	14,550	5,385
Luxembourg (LU)	39,393	23,870	12,824
Latvia (LV)	32,261	16,684	6,270
Malta (MT)	23,030	11,693	4,351
Netherlands (NL)	51,033	24,371	8,673
Norway (NO)	28,410	19,200	10,064
Poland (PL)	77,567	41,229	15,762
Portugal (PT)	28,228	15,771	6,180
Romania (RO)	26,570	13,035	4,252
Sweden (SE)	20,115	9,208	2,797
Slovenia (SI)	58,866	28,916	11,287
Slovak Republic (SK)	23,087	11,205	3,653
United Kingdom (UK)	34,595	16,155	5,742

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Table A.2. Sample sizes by age groups in the pooled SILC panel data 2011 and 2012.

	2-year transitions			3-year transitions			4-year transitions		
	Children	**Adults**	**Seniors**	**Children**	**Adults**	**Seniors**	**Children**	**Adults**	**Seniors**
AT	5,390	17,814	5,251	2,623	9,116	2,831	918	3,314	1,076
BE	5,559	16,525	4,781	2,549	7,956	2,469	850	2,845	924
BG	4,188	22,392	9,137	2,144	12,116	5,101	795	4,709	2,043
CY	4,376	14,303	4,057	2,099	7,170	2,149	639	2,322	732
CZ	6,846	27,948	8,918	3,547	14,796	4,896	1,299	5,601	1,895
DK	3,953	11,701	3,371	2,237	6,769	2,029	809	2,519	808
EE	5,082	17,326	5,116	2,434	8,938	2,701	861	3,344	1,034
EL	5,740	20,796	8,860	2,941	10,675	4,722	1,095	4,010	1,800
ES	12,760	46,011	14,646	6,446	24,343	7,825	2,296	9,326	3,079
FI	8,923	25,880	6,134	3,734	11,761	3,035	1,156	3,734	1,006
FR	16,021	46,304	13,935	9,293	28,893	8,990	4,655	15,718	5,117
HR	1,124	4,666	1,794	:	:	:	:	:	:
HU	9,810	36,379	9,215	4,334	17,075	4,662	1,506	6,424	1,854
IS	3,823	9,417	1,658	1,966	4,852	920	759	1,823	358
IT	15,176	59,037	21,401	7,708	30,171	11,153	2,920	11,541	4,346
LT	3,669	17,379	6,273	1,906	9,269	3,375	711	3,408	1,266
LU	9,880	24,786	4,727	5,838	14,957	3,075	3,034	8,043	1,747
LV	5,201	19,515	7,545	2,632	10,080	3,972	957	3,812	1,501
MT	3,845	14,886	4,299	1,873	7,498	2,322	659	2,784	908
NL	11,926	32,014	7,093	5,516	15,275	3,580	1,915	5,397	1,361
NO	7,081	17,462	3,867	4,642	11,759	2,799	2,393	6,094	1,577
PL	14,446	50,003	13,118	7,554	26,436	7,239	2,819	10,070	2,873
PT	3,654	16,756	7,818	2,118	9,198	4,455	840	3,599	1,741
RO	3,317	16,802	6,451	1,578	8,206	3,251	490	2,680	1,082
SE	4,079	12,222	3,814	1,812	5,515	1,881	533	1,636	628
SI	9,333	40,624	8,909	4,242	20,101	4,573	1,735	7,706	1,846
SK	3,478	16,367	3,242	1,589	7,987	1,629	491	2,603	559
UK	6,890	19,710	7,995	3,016	9,034	4,105	1,019	3,164	1,559

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Table A.3. Poverty rate (AROP) based on cross-sectional data and longitudinal data from EU-SILC 2011 and 2012.

|	Poverty rate 2011 (cross-sectional, Eurostat)	Poverty rate 2011 (longitudinal, 4 years in the data)	Poverty rate 2012 (cross-sectional, Eurostat)	Poverty rate 2012 (longitudinal, 4 years in the data)
AT	14.5%	12.9%	14.4%	13.2%
BE	15.3%	12.6%	15.3%	16.0%
BG	22.2%	23.8%	21.2%	18.0%
CY	14.8%	12.3%	14.7%	10.3%
CZ	9.8%	8.1%	9.6%	6.6%
DK	13.0%	7.9%	13.1%	9.8%
EE	17.5%	17.2%	17.5%	17.4%
EL	21.4%	19.2%	23.1%	23.7%
ES	20.6%	26.9%	20.8%	27.8%
FI	13.7%	10.1%	13.2%	9.8%
FR	14.0%	12.0%	14.1%	11.8%
HU	13.8%	14.3%	14.0%	13.8%
IS	9.2%	5.4%	7.9%	4.4%
IT	19.6%	18.2%	19.4%	18.0%
LT	19.2%	13.8%	18.6%	17.8%
LU	13.6%	11.0%	15.1%	11.1%
LV	19.0%	14.8%	19.2%	19.2%
MT	15.6%	15.5%	15.1%	14.9%
NL	11.0%	11.1%	10.1%	9.3%
NO	10.5%	8.4%	10.0%	10.0%
PL	17.7%	17.0%	17.1%	15.5%
PT	18.0%	21.6%	17.9%	17.6%
RO	22.2%	20.5%	22.6%	:
SE	14.0%	7.8%	14.1%	:
SI	13.6%	8.2%	13.5%	6.9%
SK	13.0%	13.0%	13.2%	:
UK	16.2%	12.5%	16.0%	16.1%

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB] and Eurostat [ils_li02].

Table A.4. Dynamics in economic status, year-on-year transitions 2008-2012.

	Total				Children			
	Entry to poverty	**Exit from poverty**	**Remained poor**	**Remained non-poor**	**Entry to poverty**	**Exit from poverty**	**Remained poor**	**Remained non-poor**
AT	6.4%	41.5%	7.7%	81.3%	8.0%	41.9%	8.9%	77.8%
BE	5.5%	34.4%	10.0%	80.0%	5.0%	26.3%	13.0%	78.3%
BG	6.5%	24.9%	16.1%	73.5%	8.5%	21.4%	20.6%	67.6%
CY	3.1%	29.3%	10.3%	82.8%	3.1%	38.3%	7.2%	85.7%
CZ	3.1%	38.2%	5.4%	88.3%	5.0%	36.4%	8.3%	82.5%
DK	2.1%	39.7%	7.9%	85.0%	1.3%	41.9%	6.6%	87.5%
EE	7.2%	35.0%	11.6%	76.2%	8.2%	33.5%	12.5%	74.5%
EL	8.7%	31.4%	14.2%	72.4%	9.9%	28.3%	16.7%	69.1%
ES	12.2%	32.4%	17.7%	64.8%	14.5%	25.4%	23.2%	58.9%
FI	3.1%	27.7%	8.9%	85.0%	3.4%	35.2%	6.5%	86.9%
FR	5.0%	37.7%	7.9%	82.9%	6.8%	33.1%	10.7%	78.2%
HR	7.4%	32.5%	14.6%	72.6%	8.2%	34.0%	14.5%	71.7%
HU	5.4%	34.1%	8.4%	82.5%	8.9%	28.2%	15.2%	71.9%
IS	3.5%	57.7%	3.6%	88.3%	4.5%	56.9%	4.6%	85.4%
IT	6.8%	30.8%	13.1%	75.5%	10.1%	28.8%	18.3%	66.8%
LT	7.7%	39.5%	12.2%	73.7%	10.5%	39.6%	14.8%	67.6%
LU	4.0%	32.7%	9.3%	82.8%	5.8%	29.7%	14.3%	75.0%
LV	7.7%	34.8%	14.0%	72.5%	9.8%	27.1%	17.6%	68.5%
MT	5.1%	26.7%	12.1%	79.2%	6.7%	22.2%	17.0%	72.9%
NL	3.3%	33.3%	6.4%	87.4%	4.4%	28.8%	9.0%	83.5%
NO	3.4%	29.7%	7.1%	86.9%	3.5%	38.4%	5.4%	88.0%
PL	6.1%	32.4%	11.8%	77.5%	8.6%	31.8%	15.1%	71.1%
PT	6.6%	29.4%	13.3%	75.8%	7.8%	22.8%	16.4%	72.6%
RO	4.6%	17.0%	17.0%	75.9%	6.9%	13.0%	26.0%	65.3%
SE	3.2%	30.8%	7.0%	87.0%	3.2%	33.0%	7.0%	86.6%
SI	2.3%	26.2%	6.2%	89.4%	2.4%	35.4%	4.9%	90.1%
SK	5.2%	32.7%	7.7%	84.0%	9.1%	27.3%	12.8%	75.0%
UK	8.9%	49.3%	9.0%	75.0%	10.6%	48.5%	10.5%	71.3%
Total	6.6%	34.9%	11.0%	77.6%	8.5%	31.8%	14.1%	72.6%

|	Adults				Seniors			
	Entry to poverty	Exit from poverty	Remained poor	Remained non-poor	Entry to poverty	Exit from poverty	Remained poor	Remained non-poor
AT	6.1%	46.0%	6.3%	83.0%	6.0%	29.3%	11.7%	78.5%
BE	4.9%	35.9%	8.4%	82.6%	8.3%	37.7%	12.7%	73.0%
BG	5.7%	27.3%	12.2%	78.6%	8.4%	22.9%	25.9%	60.8%
CY	2.7%	35.6%	6.3%	87.7%	5.2%	18.9%	30.6%	59.0%
CZ	3.1%	39.4%	5.1%	88.7%	1.6%	35.4%	4.0%	92.3%
DK	2.1%	45.7%	7.0%	85.3%	3.2%	21.5%	12.8%	81.1%
EE	7.1%	33.9%	11.3%	77.0%	6.6%	39.8%	11.9%	75.0%
EL	8.6%	31.5%	13.8%	73.0%	7.7%	34.3%	13.4%	73.4%
ES	11.8%	34.1%	15.7%	67.2%	11.2%	35.3%	19.4%	62.2%
FI	3.2%	31.1%	8.0%	85.6%	2.5%	14.8%	14.6%	80.7%
FR	4.9%	39.9%	7.4%	83.4%	3.6%	37.1%	6.4%	86.5%
HR	6.9%	34.7%	12.7%	74.9%	8.4%	26.3%	20.7%	65.9%
HU	5.4%	36.4%	8.0%	82.6%	2.3%	37.4%	2.8%	93.3%
IS	3.5%	57.9%	3.4%	88.7%	1.4%	58.8%	2.7%	92.1%
IT	7.1%	32.9%	12.0%	76.2%	4.0%	26.4%	12.6%	79.6%
LT	7.7%	39.1%	12.5%	73.3%	5.3%	41.6%	8.5%	80.9%
LU	3.9%	32.3%	9.3%	82.9%	2.2%	54.3%	2.3%	92.8%
LV	7.6%	32.1%	13.4%	74.2%	6.1%	49.3%	12.9%	70.0%
MT	4.7%	30.5%	10.0%	81.5%	5.0%	20.1%	15.7%	76.4%
NL	3.2%	34.7%	6.2%	87.5%	2.2%	35.9%	4.1%	91.6%
NO	3.6%	33.0%	6.4%	87.1%	2.2%	13.8%	11.4%	84.9%
PL	6.1%	34.2%	11.1%	78.1%	3.9%	24.0%	11.0%	82.1%
PT	6.2%	30.4%	12.0%	77.6%	6.5%	31.3%	14.6%	73.7%
RO	4.4%	16.9%	15.4%	77.9%	3.2%	25.2%	13.2%	79.7%
SE	2.9%	35.4%	5.8%	88.4%	4.3%	18.9%	10.8%	83.0%
SI	2.2%	31.1%	4.6%	91.3%	2.7%	13.1%	14.9%	80.6%
SK	4.9%	34.4%	7.1%	84.9%	2.6%	35.5%	4.9%	89.9%
UK	7.8%	50.8%	7.4%	78.4%	10.6%	47.1%	12.6%	68.1%
Total	6.4%	36.4%	10.0%	78.9%	5.6%	34.0%	11.6%	77.9%

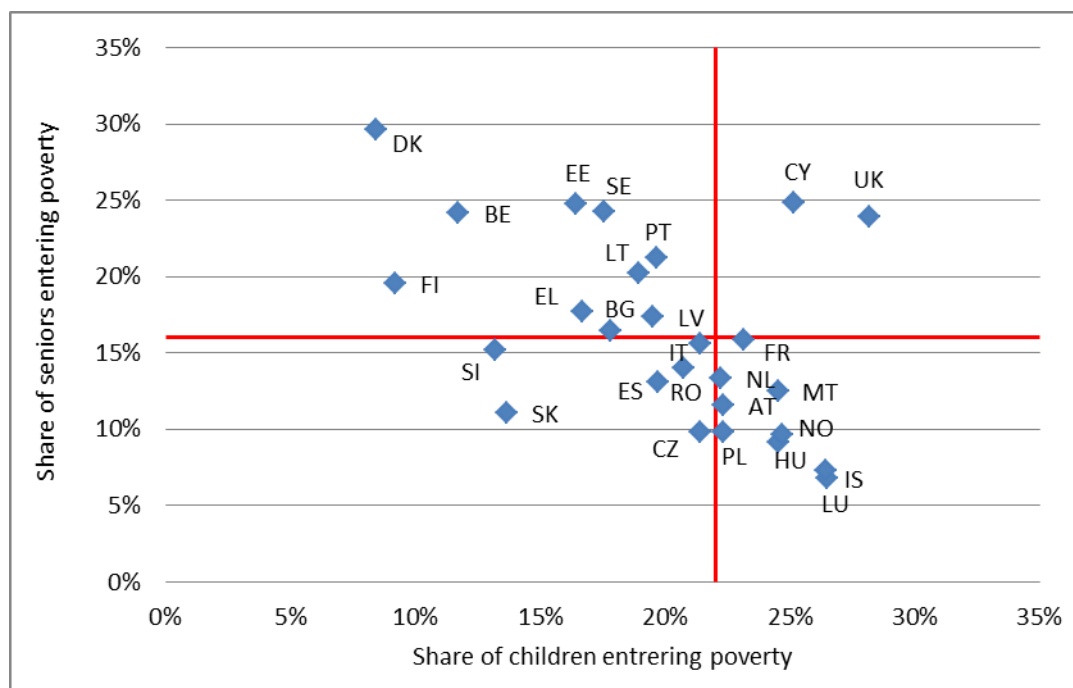**Figure A.1. Correlation between AROP (2011) and exit rate.**
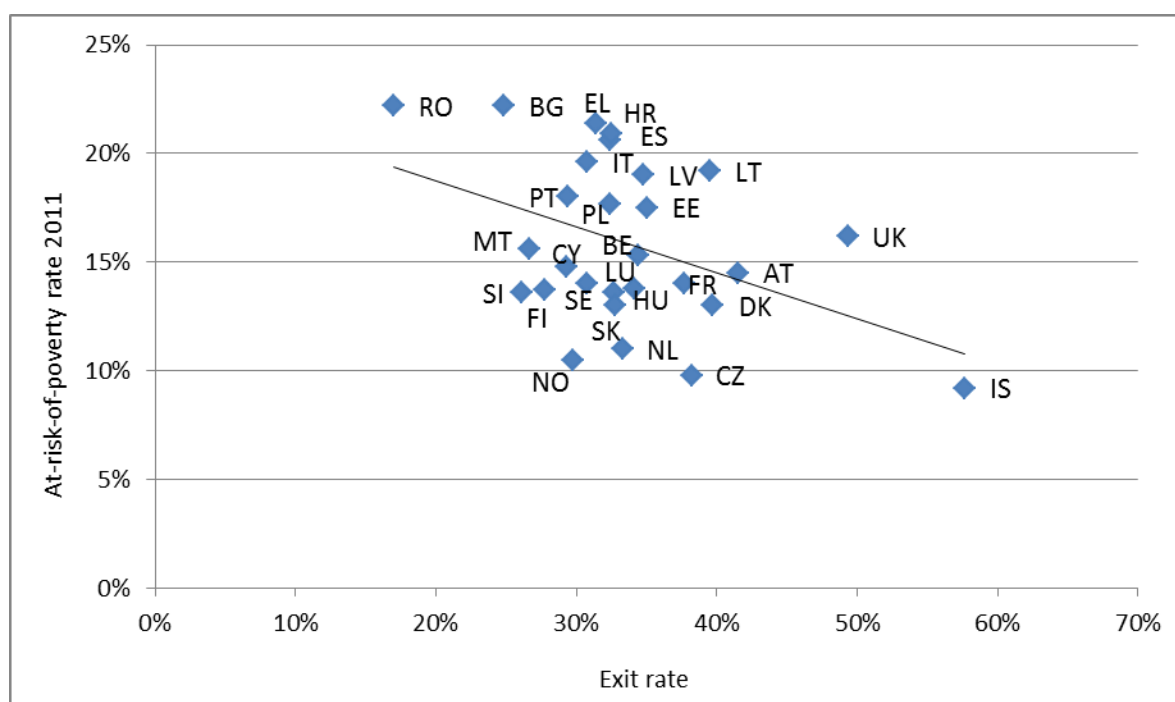
Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB] and Eurostat [ils_li02].

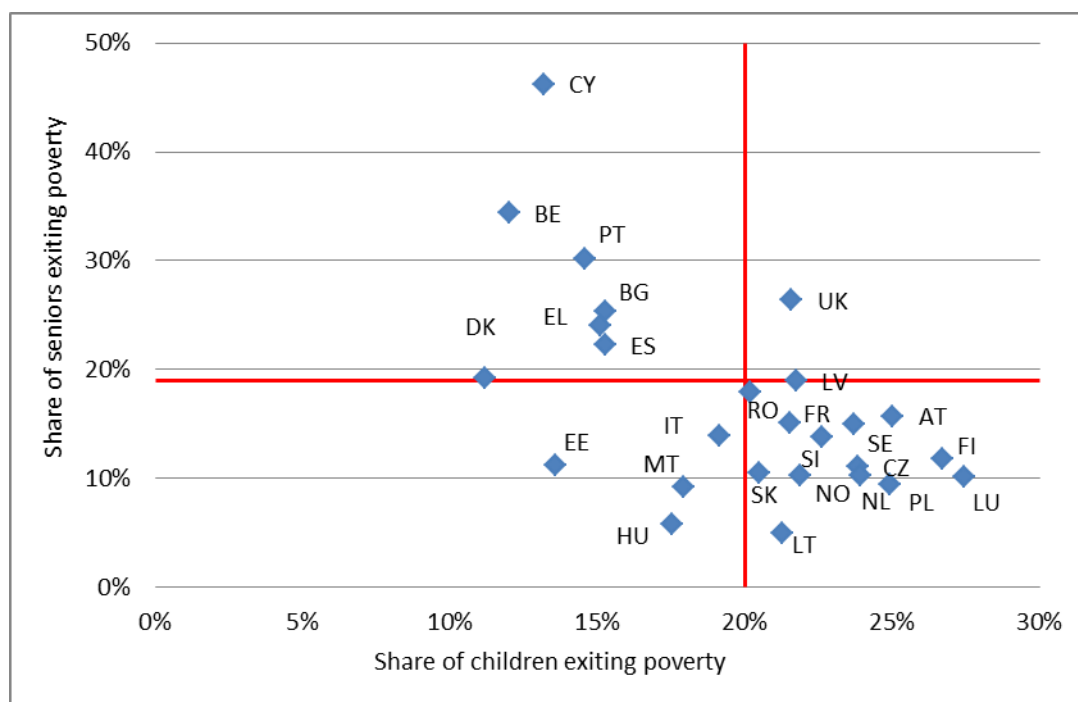**Figure A.2. Correlation between AROP (2011) and entry rate.**
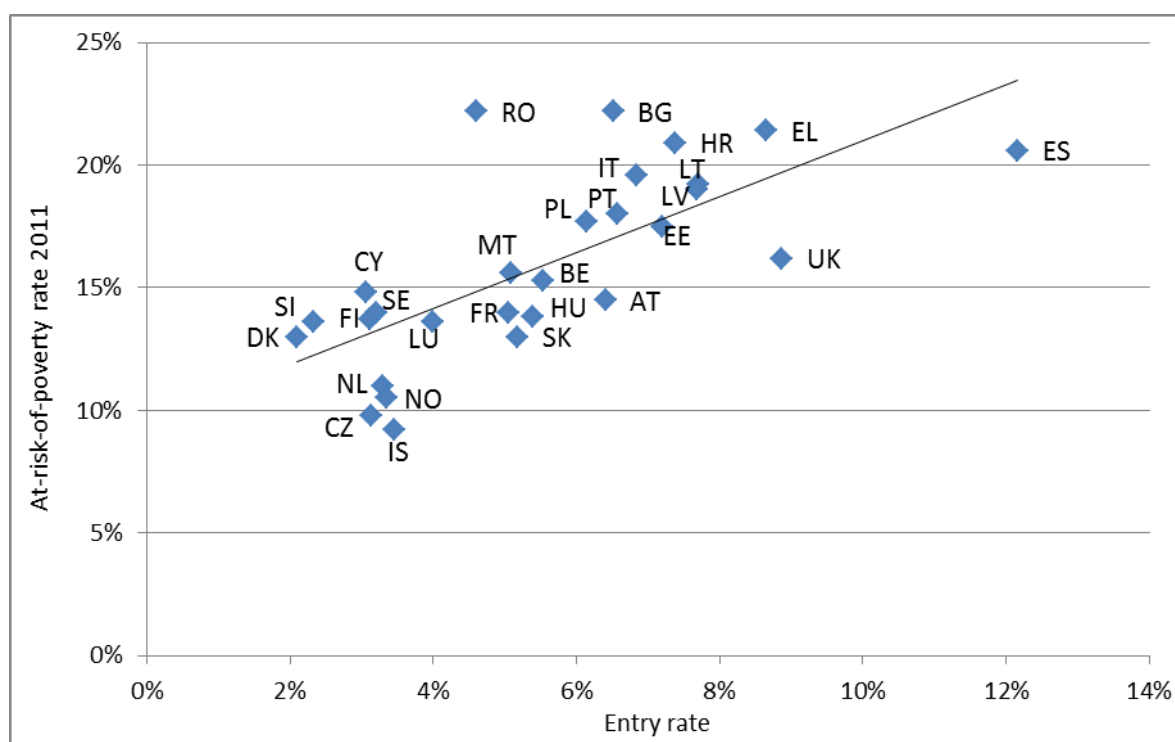
Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB] and Eurostat [ils_li02].

Figure A.3. Share children and seniors entering poverty (% of total entries).

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Figure A.4. Share children and seniors exiting poverty (% of total exits).

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

Table A.5. Change in deprivation for people experiencing 4 years of poverty.

Decrease in deprivation				
	1st year	**2nd year**	**3rd year**	**4th year**	**Change**
AT	2.72	2.73	2.11	2.25	-17%
FR	2.48	2.28	2.27	2.17	-13%
LU	1.98	1.63	1.64	1.76	-11%
PL	3.41	3.25	3.34	3.13	-8%
NO	1.02	0.81	0.55	0.94	-8%
SE	1.04	0.83	0.75	0.98	-6%
CY	2.25	2.23	2.19	2.12	-6%
SK	3.87	3.31	3.56	3.68	-5%
PT	2.82	2.82	2.83	2.70	-4%
FI	1.51	1.44	1.50	1.50	-1%
RO	4.18	4.26	4.18	4.15	-1%
SI	2.63	2.84	2.72	2.62	0%
LT	3.33	3.06	3.26	3.33	0%

Increase in deprivation				
	1st year	**2nd year**	**3rd year**	**4th year**	**Change**
BE	2.50	2.43	2.25	2.52	1%
UK	1.39	1.29	1.27	1.41	1%
CZ	2.82	2.53	3.05	2.99	6%
LV	3.91	3.87	4.40	4.18	7%
MT	1.64	1.88	1.89	1.82	11%
BG	4.85	5.69	5.72	5.42	12%
NL	1.29	1.56	1.58	1.47	14%
EE	2.92	2.97	3.36	3.33	14%
ES	1.47	1.80	1.80	1.75	19%
EL	2.75	3.02	3.17	3.28	19%
IT	2.18	2.33	2.41	2.63	20%
HU	3.19	3.61	4.20	4.29	34%
DK	0.70	0.51	0.76	1.09	55%

Source: Author's calculations [Eurostat, EU-SILC 2011, 2012 UDB].

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