



Income Poverty in the EU Situation in 2007 and Trends (based on EU-SILC 2005-2008)

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Policy Briefs are a publication series providing a synthesis of topics of research and policy advice on which European Centre researchers have been working recently.

The aim of this Brief is to analyse the level of poverty and the trends of poverty across the European Union.¹

The rate of poverty varies between 9% and 26% across EU Member States. Rates are lowest in the Czech Republic, Slovakia, the Netherlands, Denmark and Sweden, and above average in Bulgaria, Romania, the Baltic States, and the Southern countries: Greece, Italy, Portugal and Spain. As the generally accepted EU definition of poverty is based on national standards, people can be poor with rather different incomes in various countries. We show the different monetary values of the poverty threshold across countries.

We find that poverty is deeper in countries with higher rates of poverty, in other words, the poor tend to have lower incomes compared to the poverty threshold value.

In the period between 2004 and 2007, overall poverty has declined in Ireland, Poland, and Slovakia, and is likely to have declined in the Czech Republic and Hungary. In contrast, at-risk-of-poverty rates have increased in Germany, Finland, Latvia, and Sweden. In the majority of countries there has been no statistically significant change in the at-risk-of-poverty rate over the past four years.

We explored the robustness of our results by the estimation of confidence intervals for the poverty rates, and the use of alternative threshold values.

Data and definition of poverty

The measure of financial poverty used here is the main indicator of poverty of the European Union. This so-called “at-risk-of-poverty” rate is a relative measure in the sense of using national poverty thresholds, as it

counts the number of people in each country with (equivalised²) disposable income below 60% of the national median.

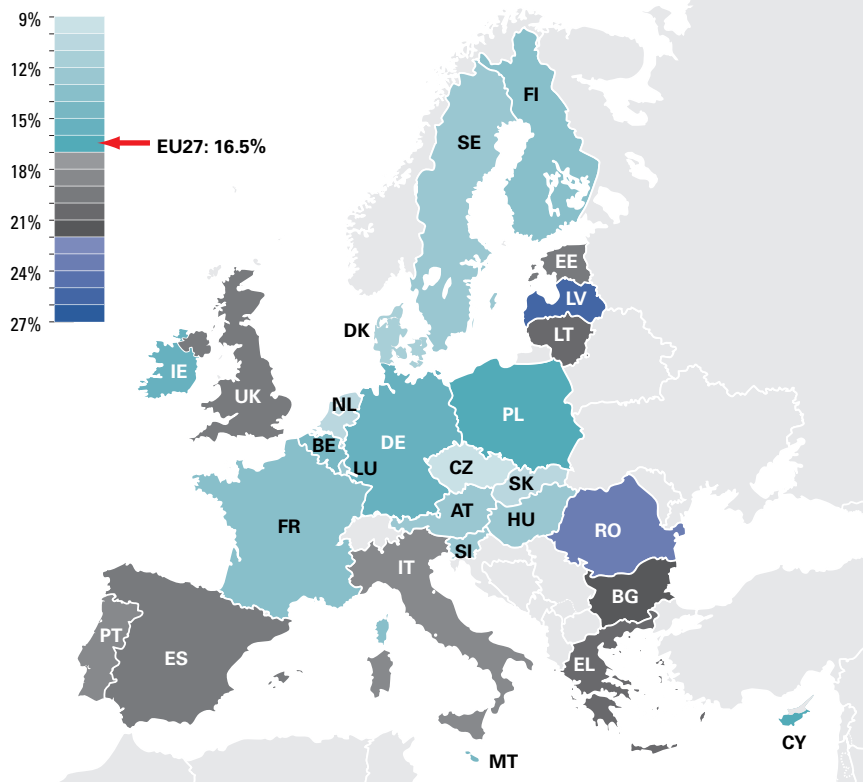
The analysis is based on data from the EU-SILC (Statistics on Income and Living Conditions), with various waves of the survey from 2005 to 2008, which refer to incomes from the years between 2004 and 2007. The survey covers 27 EU Member States³, with nationally representative samples of the population in each of them. The total sample size for each year is around 500 thousand observations, with a minimum of 10 thousand observations per country.

Risk of poverty in EU Member States

17% of the population were at risk of poverty across the European Union according to the EU-SILC survey carried out in 2008. In the sense of having income below 60% of the median of the country in which they live, this amounts to a total number of 81 million people. The proportion concerned varied between 9% and 26% across EU Member States. It was lowest in the Czech Republic, the Netherlands, Slovakia, Denmark and Sweden, and above average in the Baltic States, Bulgaria, Romania and the Southern countries: Greece, Italy, Portugal and Spain.

In 2008, 81 million people were at-risk-of-poverty in the EU

Figure 1:
At-risk-of-poverty rates across the EU, 2007 income year



Source:
Own calculations based on EU-SILC 2008 – version 2 of August 2010

Notes:
Data for France, Malta and EU27 average retrieved from EUROSTAT database. Data for France is provisional.

Since the risk of poverty is a relative measure which is country-specific, the poverty thresholds differ greatly across countries in terms of the purchasing power they represent. The average poverty threshold in the 12 countries which have entered the EU since 2004 was only around half the average in the other 15 Member States in purchasing power terms and much less in terms of Euro.

Margins of error of the risk of poverty figures

Robustness of our estimates: The figures for the risk of poverty are normally presented as single values. But since they are based on the information collected from only a sample of households, they are inevitably subject to a margin of error, even if the sample concerned is intended to be representative of the population of the country. The size of these margins of error depends to a large extent on the size of the sample, i.e. the number of people surveyed relative to the population of the country. It is important to take explicit account of these margins of error when assessing differences between countries or changes over time, otherwise there is a danger of reaching misleading conclusions. In particular, differences arising from these margins of error can be confused with real differences in the figures. To avoid this, “confidence intervals”, representing the margin of error, can be calculated around the risk of poverty figure, which indicate the range within which the true figure is likely to lie.

Calculating a conventional 95% confidence interval for each country⁴ (meaning that there is a 95% probability of the true figure being within the calculated range) indicates an average range of about 1 percentage point around the at-risk-of-poverty figure within which the true figure is likely to lie (Figure 2). There is, however, some variation across countries. For example, in the Czech Republic 8.7-9.4% of the population are likely to be at risk at poverty. In Latvia, the range is between 24.9% and 26.4%.

Point estimates of poverty may differ, but often the difference is not statistically significant Albeit the estimated means may differ, the extent of poverty is not necessarily statistically different between countries. For example, the at-risk-of-poverty rate in Austria, with its estimated value of 12.4%, is statistically not significantly different (at 5% level) from the rate in Luxembourg, with its value of 13.4%.

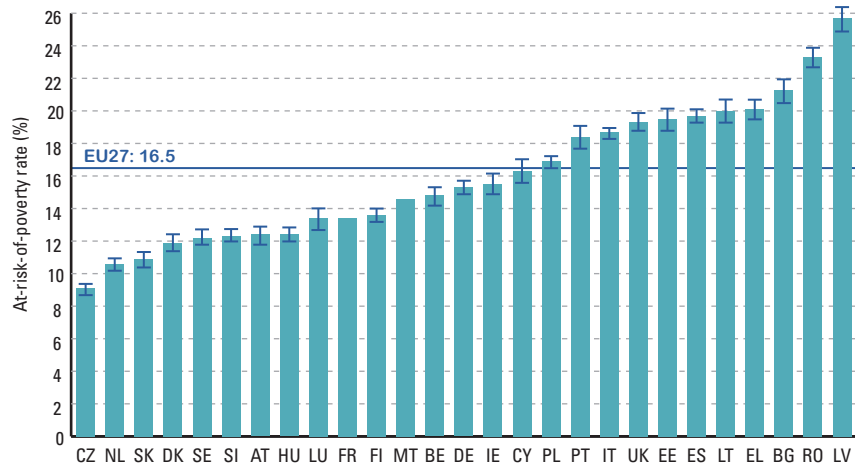
On the other hand, the proportion of the population at risk of poverty in the Czech Republic, which is the lowest in the EU, is lower than that in the Netherlands, the second-lowest, even taking account of confidence intervals, and the same is true for Romania, which has the second-highest proportion, as compared with Latvia, which has the highest.

Figure 2:

Proportion of population at risk of poverty across the EU, 2007 income year

Source: Own calculations based on EU-SILC 2008 – version 2 of August 2010

Notes: Data for France, Malta and EU27-average retrieved from EUROSTAT database. Data for France is provisional.



Values of the risk of poverty threshold (in EUR and PPS)

The average poverty threshold for the EU12 Member States is only about half of the average for the EU15 (in PPS)

The at-risk-of-poverty threshold is by definition relative and country-specific. The actual level of income represented by the threshold differs substantially across Member States. Accordingly, many of the people calculated to be at risk of poverty in a prosperous country may have income well above the poverty threshold in a less prosperous one. There is a particularly large gap between most of the EU15 Member States and the EU12 countries which entered the EU in 2004 and 2007. The average poverty threshold of 60% of median income for the EU12 Member States is only about half of the average for the EU15, if measured in purchasing power terms. The disparity is even wider in terms of Euros.

Wider disparities in euro terms

Measuring in terms of purchasing power is intended to allow for differences in price levels across Member States, or in what a Euro can buy. Since price levels tend to be lower in the EU12 countries than in the EU15, a Euro is worth more in terms of the goods and services it can buy and therefore thresholds adjusted for the purchasing power of the Euro (PPS terms) tend to be higher than the unadjusted figure while the opposite is the case for EU15 countries.

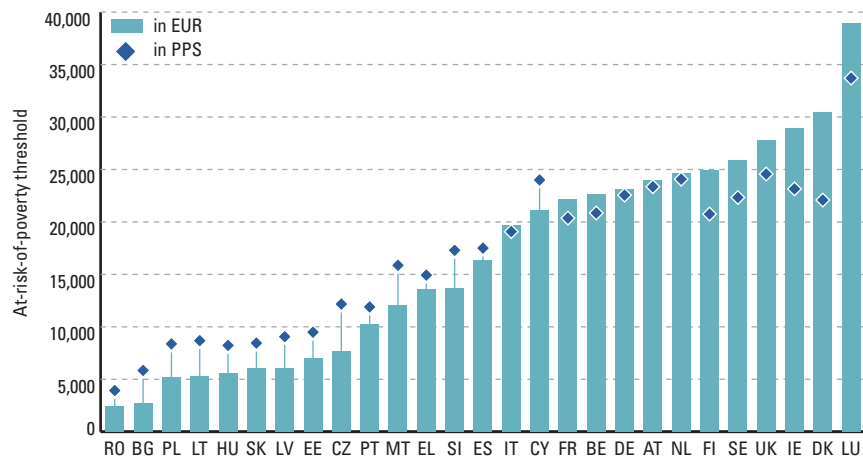
The threshold for a 2-adult, 2-child family in Luxembourg is 8 times higher in PPS terms than in Romania, and in the UK, which has the second-highest threshold, 6 times higher.

Figure 3:

Monetary value of the at-risk-of-poverty threshold for households of two adults with two children under 14, in EUR and PPS, 2007 income year

Source: EU-SILC 2008 – version 2 of August 2010, retrieved from EUROSTAT database

Notes: Data for France and UK are provisional. Extracted on 24-08-2010.



Risk of poverty on basis of different thresholds

The threshold set to measure the risk of poverty is largely arbitrary. Thresholds set at 40%, 50% and 60% of the national median income are the ones most commonly used. The variation in the rates calculated by using these different thresholds gives an indication of the distribution of income at the lower end of the income scale – whether, for example, it is concentrated just below the 60% threshold or more widely dispersed with many people having very low income levels. The 50% threshold is most used by the OECD and in the Luxembourg Income Study literature. “[...] the 40% threshold is often used to capture what is referred to as ‘severe poverty’, while the 60% threshold is used as the main EU indicator of poverty and is sometimes termed ‘near poverty’ ” (Gornick and Jantti, 2009)⁵.

Poverty rates range between 2% and 11% with a 40% threshold (severe poverty), between 5% and 19% with a 50% one, and between 17% and 32% with a threshold of 70%

The choice of a particular threshold, of course, determines the proportion of population calculated to be at risk of poverty (Figure 4). Poverty rates range between 2% and 11% with a 40% threshold, between 5% and 19% with a 50% one, and between 17% and 32% with a threshold of 70%. The ranking of countries is broadly similar whichever threshold is used, though there are differences. Latvia stands out as the country with the largest proportion of the population at risk of poverty in the case of all the alternative thresholds. In Latvia and Romania, more than 10% of the population are at risk of “severe poverty” (i.e. those with incomes below 40% of the national median), double the EU27 average of 5%.

The difference between the rates at 50% and 70% shows how many people are concentrated just below or just above the EU indicator of 60%. In Germany, for example, relatively few people are clustered around

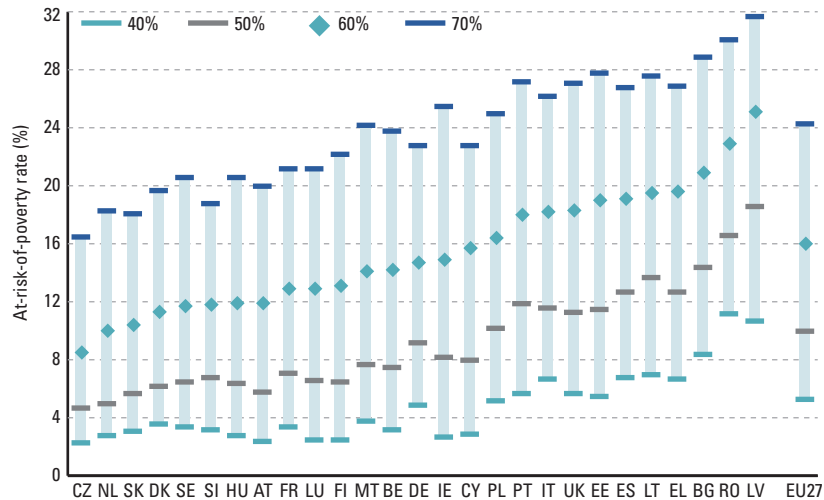
the threshold, in contrast to Ireland, where many more people have an income just above or just below the threshold. As a consequence, while the at-risk-of-poverty rates using the 60% threshold are not significantly different in a statistical sense (just above 15% in both cases), there are differences if a 50% or 70% threshold is used (Germany having a higher rate at 50%, Ireland at 70%).

Like Ireland, there is a particularly large proportion of people concentrated just below the 60% threshold in Cyprus, Estonia, the UK and Greece and just above the threshold in Malta, Belgium and Portugal. In these countries, more so than others, the estimates of the at-risk-of-poverty rates are affected by the threshold adopted.

Figure 4:
At-risk-of-poverty on basis of alternative thresholds (40-50-60-70%), 2007 income year

Source:
EU-SILC 2008 – version 2 of August 2010,
retrieved from EUROSTAT database

Notes:
Data for France and UK are provisional.
Extracted on 24-08-2010.



Risk-of-poverty gap and relationship with the risk of poverty

The “poverty gap” (the Laeken indicator termed the “relative median at-risk-of-poverty gap”) – measured as the difference between the median income of those below the poverty threshold and the threshold itself, expressed as a percentage of the threshold – indicates the extent to which the incomes of those at risk of poverty fall below the threshold on average. In policy terms, it indicates the scale of transfers, which would be necessary to bring the incomes of the people concerned up to the poverty threshold (by redistributing income from those above).

The median incomes of those below the poverty threshold of 60% of median income are in the EU27 on average 22% lower than the threshold, i.e. below the minimum level of income regarded as being necessary to

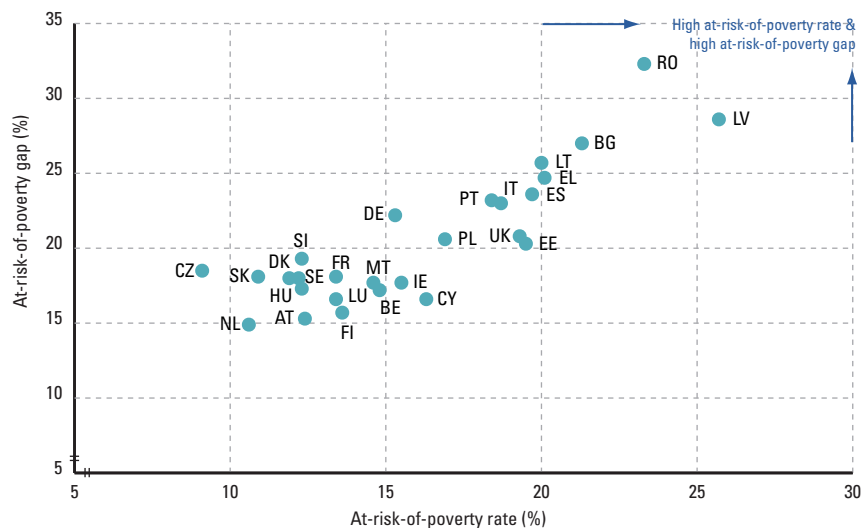
The poverty gap varies between 15% and 32% in the EU, and is positively correlated with the at-risk-of-poverty rate

avoid relative deprivation. The poverty gap in the EU27 countries varies between 15% (in Austria and the Netherlands) and 32% (in Romania) (see Figure 5). These values are positively correlated with the at-risk-of-poverty rate. Those below the poverty line, therefore, tend to have lower median incomes in countries where the proportion of people with income below the line is comparatively large. This suggests that the two indicators might have a common explanation in terms of the shape of the distribution of income, this being more uneven at the bottom end of the scale in countries with a larger proportion of the population below the threshold. In other words, there tend to be proportionately more people with very low income levels in such countries.

Note, however, that the at-risk-of-poverty gap indicates only the average income of those below the threshold but says nothing about the distribution of income between them. Accordingly, the measure would not change if there was a transfer of income from the person with the lowest income level to someone with income just below the threshold, or vice versa.⁶ It can be argued, therefore, that there is a need for an index, which also includes a measure of inequality of the incomes of those below the poverty threshold.⁷

Figure 5:

Those at risk of poverty have lower incomes in countries where there is more of them. At-risk-of-poverty gap and relationship with the at-risk-of-poverty rate, 2007 income year



Source: EU-SILC 2008 – version 2 of August 2010, retrieved from EUROSTAT database

Notes: Data for France and UK are provisional.

Poverty trends across the EU

Change in risk of poverty, 2004-2007, allowing for confidence intervals

The estimation of trends in at-risk-of-poverty rates over the long-term is problematic in the EU because of the absence of a consistent data source.⁸ The use of a single, consistent data source, the EU-SILC, however,

shortens the time period to a maximum of 6 years, and then only for a few countries⁹. For EU25 countries, there are only four years of EU-SILC data available (data for Bulgaria and Romania are available only for the most recent year).

Even for a consistent data set, it is necessary to calculate confidence intervals in order to obtain a meaningful indication of changes in the population at risk of poverty over this period.

No statistically significant change in most countries. Decline in IE, PL and KS, and increase in DE, FI, LV and SE

Between 2004 and 2007, the proportion of population at risk of poverty declined in Ireland, Poland, and Slovakia, and is likely to have declined in the Czech Republic and Hungary. In contrast, the proportion increased in Germany, Finland, Latvia, and Sweden (Figure 6). (There may also be a small increase in Malta over this period, but lack of access to micro-data prevents an assessment of whether the change is statistically significant.) The small increase in Italy from 2004 to 2006 has reversed in 2007. In the majority of countries there was no statistically significant change in the at-risk-of-poverty rate over the four years.

Figure 6: Countries with a relatively low risk of poverty (9-16%)

Change in at-risk-of-poverty rate, 2004-2007 income years, including confidence intervals of estimates

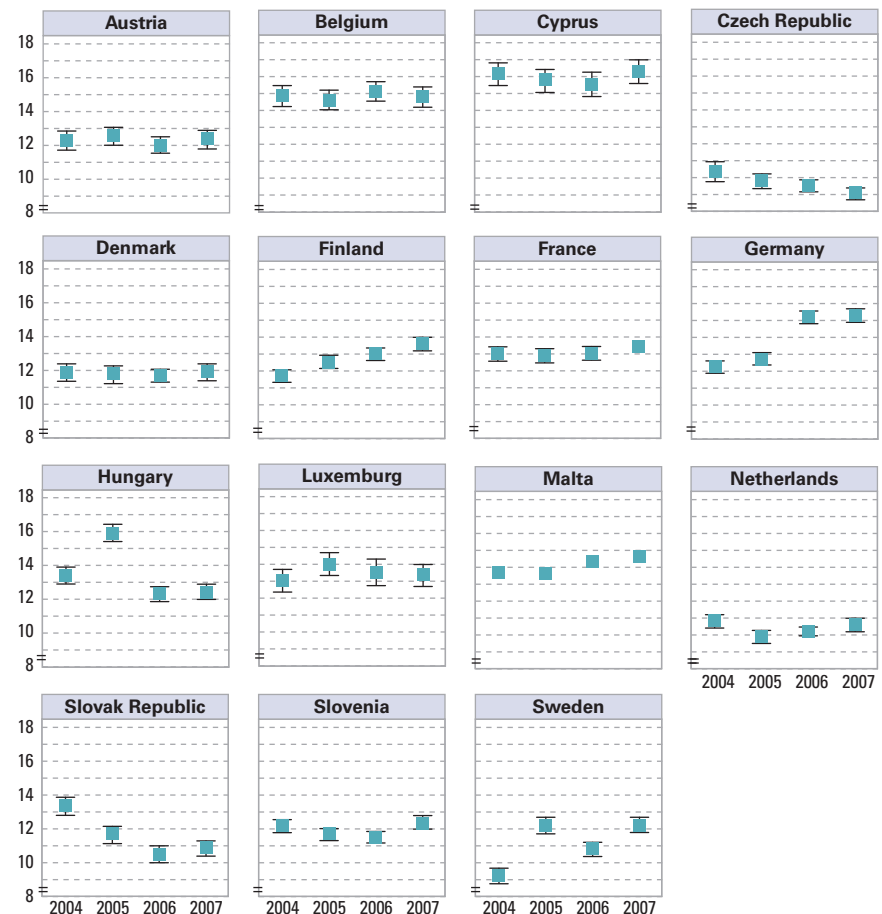
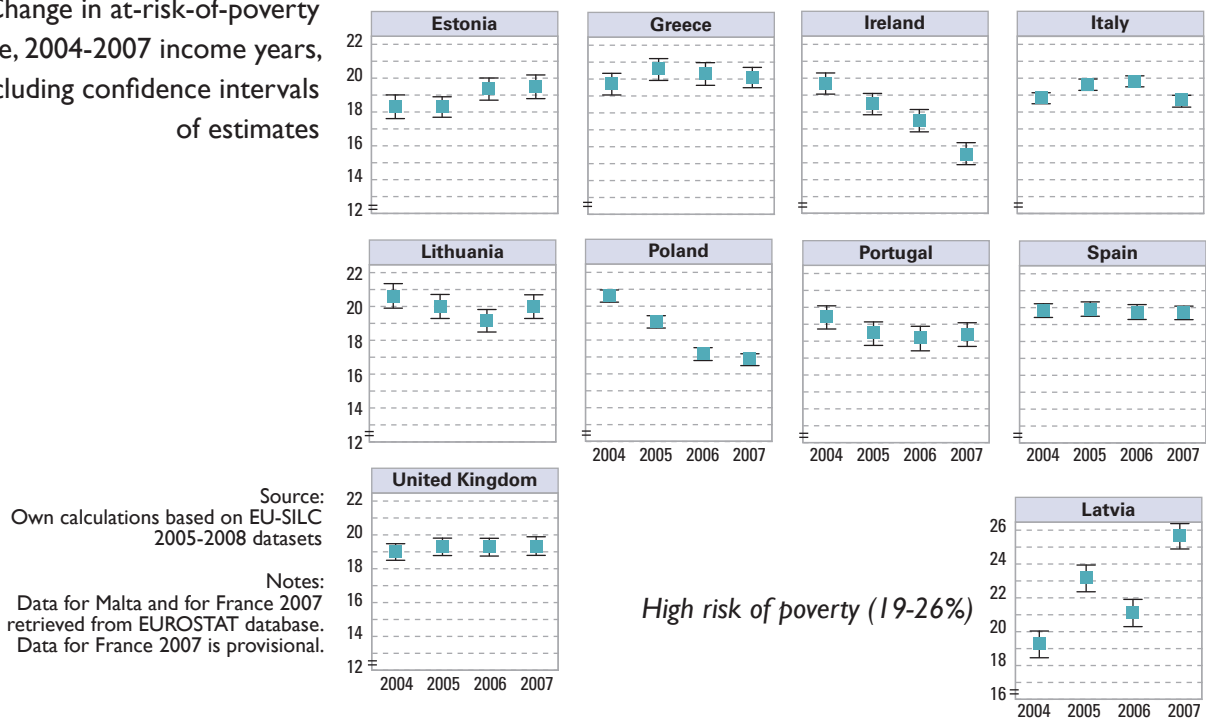


Figure 6 (continued): Countries with relatively high risks of poverty (15-20%)
 Change in at-risk-of-poverty rate, 2004-2007 income years, including confidence intervals of estimates



Source: Own calculations based on EU-SILC 2005-2008 datasets
 Notes: Data for Malta and for France 2007 retrieved from EUROSTAT database. Data for France 2007 is provisional.

The rates fluctuated upwards and downwards in some countries, most strikingly in Sweden, Latvia and Hungary. In Latvia, the large increase between 2006 and 2007 is partly due to the rise in the threshold¹⁰, which increased by 44% in terms of Euros and by 32% in PPS terms. This was much more than in the other Baltic States (17-22% in PPS terms – see the section on the change in at-risk-of-poverty rate anchored in 2004). The at-risk-of-poverty rates in Hungary and Germany in 2005 are subject to measurement errors (the former being overestimated, the latter underestimated).¹¹

Change in risk-of poverty rate anchored in 2004

Indicator showing changes in the absolute situation of people

The “change in risk-of poverty rate anchored in 2004” is defined as the proportion of the population whose equivalised disposable income is below the “at-risk-of-poverty threshold” in a particular year – the EU indicator currently uses 2004¹² – adjusted for inflation. Comparison of changes in this measure with those in the “standard” at-risk-of-poverty rate gives an indication of changes in the absolute situation of those on low incomes in relation to changes in the relative situation. In other words, the former takes explicit account of the overall change in price levels, so if there is an increase in real incomes, as typically is, this implies that everyone, including those at risk of poverty, becomes better off over

time. In contrast, the standard measure accounts for changes in average income levels (including the price effect and changes in real income).

Because the anchored measure is adjusted for inflation, it can also be considered as indicating the changing proportion of the population that can afford to purchase a fixed basket of goods and services. However, since the basket of goods and services, which is considered to be the minimum acceptable to avoid the risk of social exclusion, itself tends to expand over time as real incomes grow, it can equally be argued that the standard indicator of the at-risk-of-poverty rate, which takes account of such an expansion, is the most relevant one for measuring changes in those at risk of poverty.

Declining number of poor according to 2004 standards (adjusted for inflation)

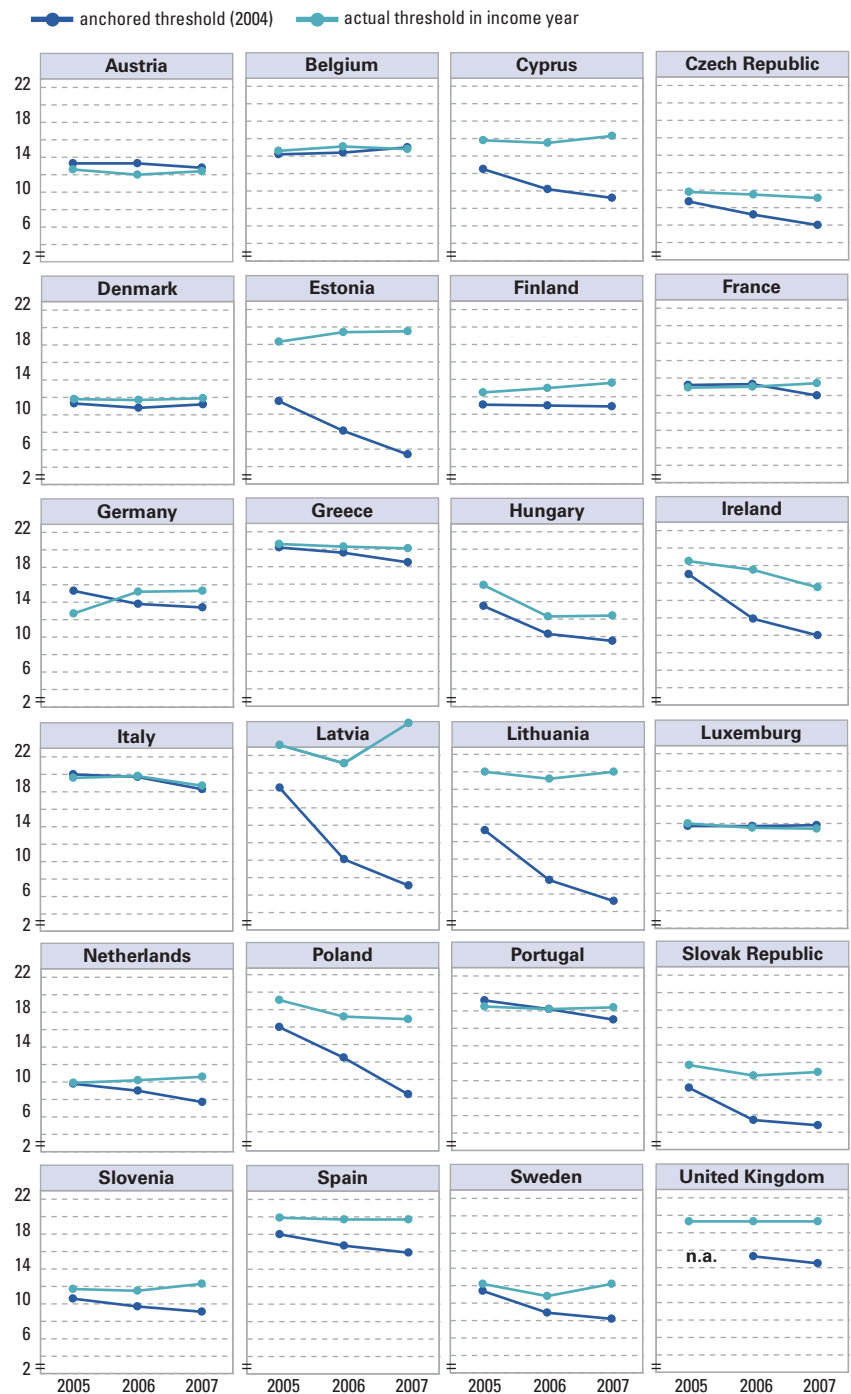
The proportion of people at risk of poverty, with the threshold anchored in 2004, declined between 2004 and 2007 across most of the EU25. The exceptions are Belgium, Denmark, Luxembourg and Malta where there was no significant change. Accordingly, this suggests that an increasing number of people in most parts of the EU could afford to buy a fixed basket of goods and services over the period.

Divergence between the trends of the at-risk-of-poverty rates using “anchored” values and those using values based on current incomes: the low income groups may be better off in absolute terms, but can still lag behind relative to contemporary standards

This trend, however, is coupled in many countries with an increasing proportion of people with income below the poverty threshold as measured in the standard way in relation to the median income of the current year. The difference between the changes in the two indicators is particularly striking in Latvia and Lithuania, but it is also evident in other countries – Estonia, Germany, Spain, Cyprus, the Netherlands, Slovenia, Finland and Sweden. Why do the two trends differ? The main reason is a shift in the shape of the income distribution curve, with incomes of those towards the upper end of the scale increasing more than for those towards the lower end. This, accordingly, pushes up the median and the number of people with income below the poverty threshold calculated as 60% of this median.

On the other hand, the two indicators moved in the same direction in a number of other countries: Belgium, Denmark, Italy, Luxembourg and Austria. In these cases, therefore, the incomes of those at the lower end of the scale tended to change broadly in line with the median, which is not necessarily a result of labour markets behaving differently in these countries compared to the others and earnings differentials remaining broadly similar, but perhaps a consequence of governments preserving the relative incomes of those at the bottom end of the scale via tax and benefit policy.

Figure 7:
Change in at-risk-of-poverty
rate anchored in
income year 2004, %



Source: EU-SILC 2008 – version 2 of August 2010, retrieved from EUROSTAT database

Notes: Data for France and UK are provisional. Extracted on 24-08-2010. The indicator is defined as the percentage of the population whose equivalised disposable income is below the “at-risk-of-poverty threshold” calculated in relation to a base year of 2004 (i.e. the income year), and then adjusted for inflation.

Notes

- 1 The results presented here are based on a research project called European Observatory on the Social Situation, financed by the European Commission (DG Employment, Social Affairs and Equal Opportunities). We are grateful for comments received from Terry Ward.
- 2 It is an adjustment for household size. Calculation of equivalised household size: the first member of the household is weighted by 1, following adults receive a weight of 0.5 each, and children (defined as those aged 13 or less) receive the weight of 0.3 each.
- 3 There are no individual-level data for Malta. As there are no individual-level data for France in 2008, we relied on the Eurostat online statistical database.
- 4 This is not possible for France and Malta, as there are no individual data available for these.
- 5 Gornick, J. C. / Jäntti, M. (2009) *Child Poverty in Upper-Income Countries: Lessons from the Luxembourg Income Study*. Luxembourg Income Study Working Paper Series, WP No. 509.
- 6 Sen, A. K. / Foster, J. E. (1997) *On Economic Inequality*. Oxford: Clarendon Press.
- 7 This is the Sen-Index. The properties of the index are discussed in Xu and Osberg (2002) – Xu, K. / Osberg, L. (2002) ‘The Social Welfare Implications, Decomposability, and Geometry of the Sen Family of Poverty Indices’, *The Canadian Journal of Economics* 35 (1): 138-152. The Sen-Index has been used to analyse poverty effects of taxes and transfers in OECD countries by e.g. Förster (1994) – Förster, M. (1994) *The Effects of Net Transfers on Low Incomes among Non-Elderly Families*. OECD Economic Studies No. 22. Paris: OECD.
- 8 Poverty trends for the period since 1995 were set out and discussed in Ward et al. (2009).
- 9 These countries include: BE, DK, IE, EL, LU, and AT.
- 10 Threshold value for households with two adults with two children younger than 14 years.
- 11 See Ward et al. (2009, p. 44). For Germany, see Frick and Krell (2009) who point out differences between the EU-SILC and the German panel study (SOEP), both in terms of the level and trend in at-risk-of-poverty rates. They argue that the EU-SILC is affected by sample bias and methodological problems (e.g. rather than face-to-face interviews, it was conducted as a postal survey), and that it underrepresents the migrant population due to the exclusive use of German as a language in the questionnaire.
- 12 Note that Eurostat defines the base year as “2005”. As, however, the 2005 survey year refers to incomes in 2004, we refer here to 2004 as the base year.

Further evidence

- Information on the Social Situation Observatory network on “Income Distribution and Living Conditions” (including Annual Monitoring Reports, Research Notes and Seminars) can be found under: <http://www.socialsituation.eu> and on the website of the European Commission: <http://ec.europa.eu/social/main.jsp?catId=676&langId=en>
- *European Inequalities: Social Inclusion and Income Distribution in the European Union* (2009. Edited by Terry Ward, Orsolya Lelkes, Holly Sutherland, István György Tóth; ISBN 978-963-7869-40-2; Budapest: TÁRKI Social Research Institute Inc.)
This book summarises four years of research. It gives an overview of the comparative information that is available for the EU Member States on income distribution, poverty and its causes, access to benefits and social services and material deprivation.



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