

## Chapter 2

# The Factors Affecting the Risk of Poverty and Inequalities in Income Distribution

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This chapter seeks to examine in more detail the risk of poverty and inequalities in the distribution of income in different parts of the EU and to consider the factors that underlie the findings presented in the previous chapter. It is divided into two parts. The first part considers the variation in the risk of poverty among people of different ages and living in different types of household, as well as the way in which it is affected by employment — or more specifically, by the lack of earnings from employment — among household members. The second part examines the extent to which these and other factors — in particular, the education level of the household head and whether or not the household is in an urban or a more rural environment — provide an explanation for both the risk of poverty and the degree of inequality in income distribution across the EU.

### The risk of poverty by age, household structure and employment status<sup>1</sup>

The risk-of-poverty rates described in the previous chapter conceal marked differences within countries between different sections of the population. In particular, the overall rate, averaged over the population as a whole, masks the way in which this varies between people of different ages — and, accordingly, at different stages of the life cycle — and between different types of household, as well as the way in which it is affected by whether or not people are in paid employment. These variations are examined in turn below.

#### The risk of poverty in different age groups

The variation in the risk of poverty between different age groups indicates a life-cycle effect in many countries. Children and the elderly are, therefore, more likely to have income below the poverty line than are people of working age, although the extent to which this is the case varies from country to country (Figure 2.1). In most Member States, either children or the elderly aged 65 and over (or both) are at greater risk of poverty than are those people of working age, though in Germany, exceptionally, there is no significant difference across age groups in the proportion with income below the poverty threshold.

<sup>1</sup> Based on work by Orsolya Lelkes, assisted by Eszter Zólyomi.

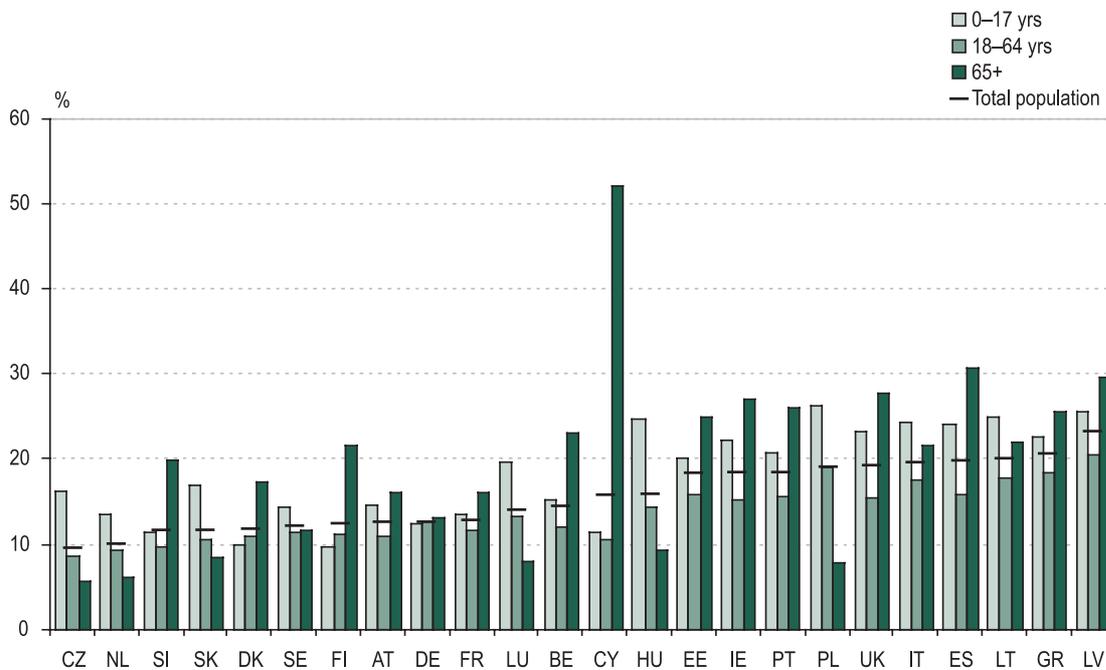
These differences in the age-specific risk of poverty reflect two factors in particular: the structure of households and the extent to which children and the elderly live in the same household as people of working age who are in employment; and the nature of the social protection system and the extent to which income is redistributed to those without adequate (or any) income from employment by means of taxes and benefits. The latter factor is explored in Chapter 7 below.

In the majority of EU Member States (16 of the 24 covered here), children, defined as those aged under 18, face a relatively high risk of poverty, compared to the total population. In 10 of the 16 countries, moreover, the risk of poverty is higher among children than among the elderly. Accordingly, they represent a particular focus of social policy in many countries.

The scale of the risk, or the proportion of children with income below the poverty line, varies markedly across the EU. It is lowest in Finland and Denmark (where only 9–10% of children have income this low), considerably higher in Spain, Hungary, Italy, Lithuania and the UK (where the figure is 24–25%), and highest of all in Poland and Latvia (where it reaches 26%). In Finland and Denmark, alone among EU Member States, the risk of poverty faced by children is lower than for other age groups, suggesting either that the household structure is particularly favourable among families with children, or that the income levels of the households in which they live are especially well supported by the social protection system.

In most of the Member States, the risk of poverty among people of working age (here defined as 18–64) is lower than among children or among those aged 65 and over. It is affected mainly by the extent of unemployment or inactivity and by the way that these two factors are distributed across households, and also, though to a lesser extent, by the relative number of households with large families — i.e. with children who need to be supported.

Figure 2.1: Risk of poverty of specific age groups



Source: Own calculations based on EU-SILC 2006

Among those aged 65 and over, the risk of poverty ranges from 6% in the Czech Republic and the Netherlands to 27–28% in Ireland and the UK, 30–31% in Latvia and Spain, to as high as 52% in Cyprus (a figure that is in line with other data sources, as well as with the EU-SILC for 2005).<sup>2</sup>

There are a number of countries where the risk of poverty among the elderly is much lower than among younger age groups, including four of the new Member States — the Czech Republic, Slovakia, Hungary and Poland — as well as the Netherlands and Luxembourg. In addition, the poverty risk is much the same as for other sections of the population in Sweden and Germany.

These marked differences in the risk of poverty among the elderly across the EU reflect differences in national pension systems, particularly in terms of the link between retirement pensions and earnings when in work, the relative importance of state versus private (or occupational) pensions and the extent to which the state pension is intended to provide a basic level of support, rather than a replacement income. These differences have, *inter alia*, important implications for any future harmonisation of pension entitlements across the EU within the context of encouraging labour mobility between Member States and establishing a truly unified labour market.

From a comparison of the risk of poverty among children, on the one hand, and among the elderly, on the other, the question arises: is there a trade-off in policy terms between the two? Do Member States tend to give priority to one rather than the other in the design and implementation of social protection systems? In practice, there are a number of countries where there is a marked difference in the risk of poverty between the two age groups. One group of countries, therefore, is characterised by a relatively low risk of poverty among children (compared to other age groups) and a relatively high risk among the elderly. This group includes Cyprus, Denmark and Finland. In another group of countries, the reverse is the case: child poverty is much higher than the poverty of the elderly population. This group includes the Czech Republic, Slovakia, Hungary, Luxembourg and Poland. On the other hand, there is no clear age-specific pattern of variation in the risk of poverty in the Baltic states, in the four Mediterranean countries, or in Ireland and the UK. In all of these countries, the risk of poverty among both children and the elderly is high, compared to the population of working age. In these countries, earnings from employment play a dominant role in the income of households, and the social protection system plays a relatively limited role in reducing income inequality (see the calculations based on EUROMOD<sup>3</sup> in Chapter 7).

## Household structure

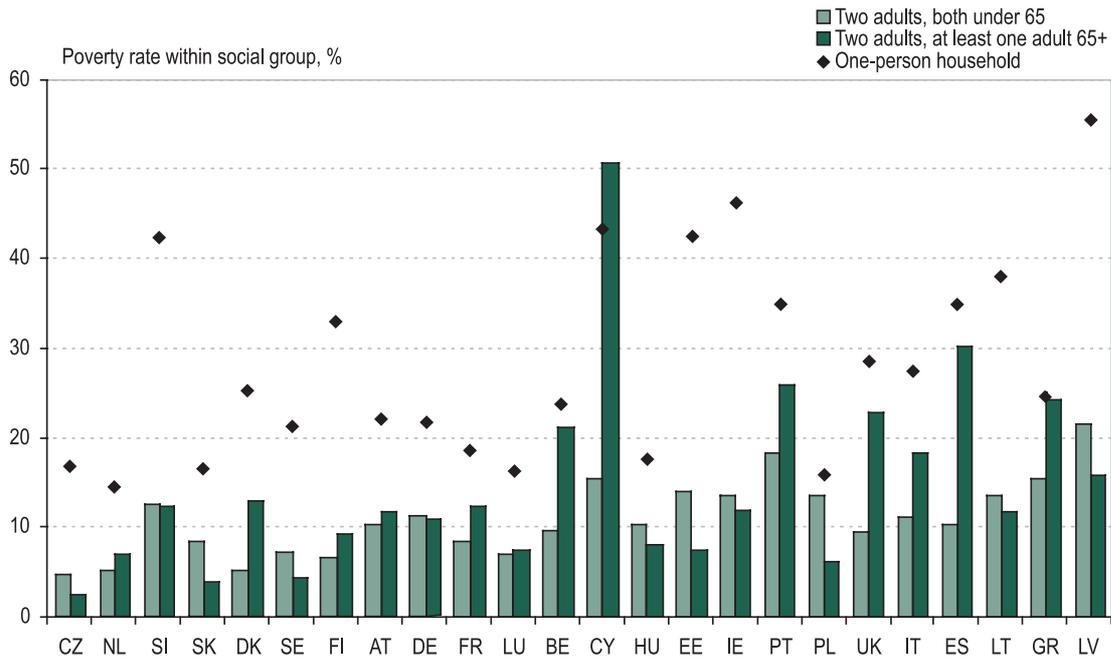
There are two main risks related to the household structure: a greater number of children and, perhaps less intuitively, living in a one-adult household (with or without dependent children).

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<sup>2</sup> See Pashardes (2003), who, on the basis of the Family Expenditure Survey for 1996–97, found that those aged 65 or over had a 58% higher probability of having income below the poverty line than younger age groups, other things being equal.

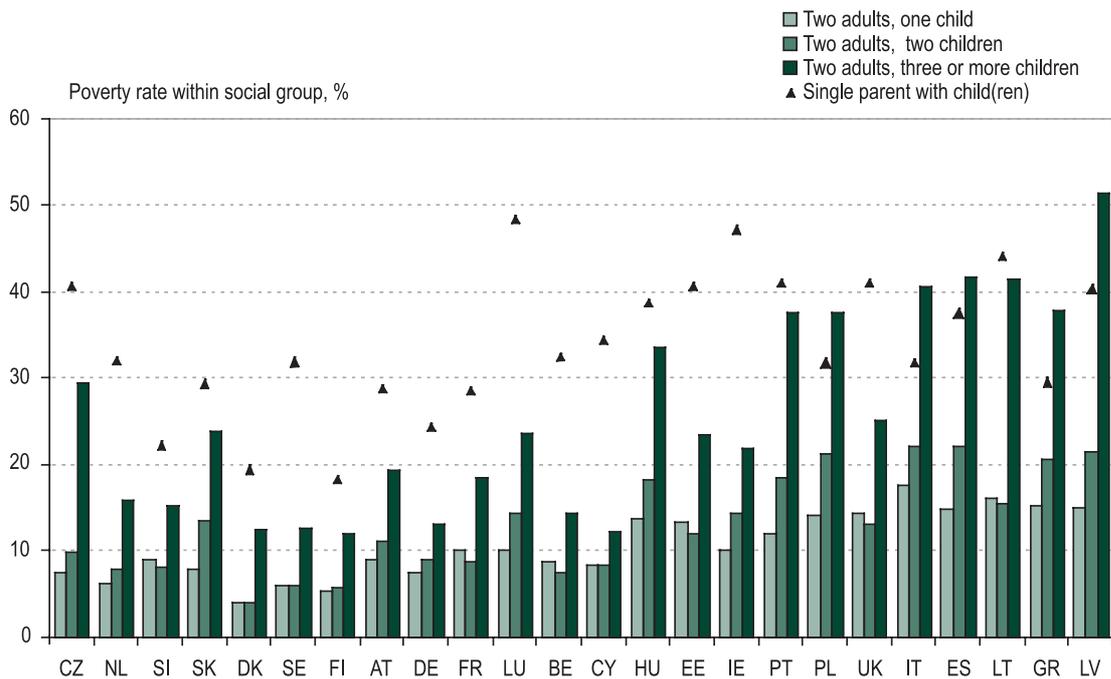
<sup>3</sup> EUROMOD is a multi-country tax-benefit microsimulation model, currently covering 19 EU countries — the 15 pre-2004 Member States and Estonia, Hungary, Poland and Slovenia (see the Appendix to Chapter 7 for further information).

Figure 2.2: Risk of poverty by type of household (households without children)



Source: Own calculations based on EU-SILC 2006

Figure 2.3: Risk of poverty by type of household (households with children)



Source: Own calculations based on EU-SILC 2006

The risk of poverty among one-person households can be much higher than among two-adult households (see Figures 2.2 and 2.3). One reason for this is partly income pooling: in households where two adults cohabit, the impact of

temporary income shocks (such as unemployment or sickness) can be cushioned, since they normally affect one household member at a time. The other reason lies in the characteristics of one-adult households: a large proportion of these consist of young people who are unemployed, or elderly pensioners (predominantly women) — both groups with a higher than average risk of poverty.

Poverty among one-person households tops 40% in Cyprus, Estonia, Ireland, Latvia and Slovenia. In these countries, with the exception of Cyprus, this particular household type is exposed to a risk of poverty that is several times greater than other childless households, including even pensioner aged. The peculiarity of the situation in Cyprus is the outstanding old-age poverty: every second couple where at least one person is over the age of 65 lives in poverty. This is not a novel phenomenon and it cannot be attributed to one-off data-quality problems.

The risk of poverty among lone parents is around 30% or higher in the majority of the 24 Member States covered here, and over 40% of lone parents have incomes below the poverty line in the Czech Republic, Latvia, Lithuania, Luxembourg, Ireland, Portugal and the UK. The position of lone parents is better in Denmark and Finland, where the proportion with income below the poverty line is around 20% or lower, though this is still higher than among other sections of the population.

The risk of poverty rises significantly with the number of dependent children in the household. In around half of the countries, the risk of poverty among families with two children is higher than if the family has only one child. This is the case in the Mediterranean countries and in most of the Central and Eastern European countries. The risk of poverty, however, rises substantially among households with three or more children in these countries especially. In Greece, Italy, Portugal and Spain, therefore, as well as in Hungary, Latvia, Lithuania and Poland, at least a third of those living in households with three or more children have income below the poverty line.

### **Labour market factors**

The focus here is on the link between the risk of poverty of households and employment — or, more precisely, the extent to which those of working age living in households are employed. The approach adopted is based on the Eurostat measure of this, which is defined as the work intensity of households (for a definition, see Glossary). A work intensity index value of 0 corresponds to no one being in employment — i.e. a jobless household. By the same token, a work intensity index value equal to 1 means all the household members of working age have been employed for the entire year.

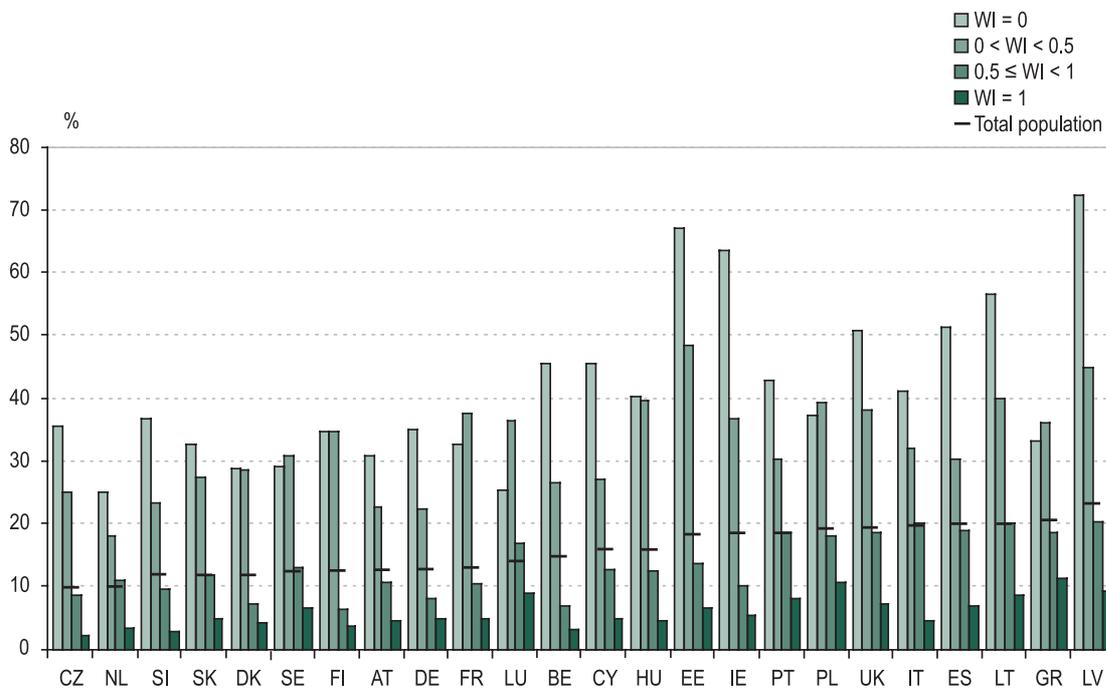
It should be noted that, in practice, the index as defined is only a partial indicator of work intensity, since it takes no account of whether those employed work full time or part time, which clearly affects the income they earn from employment and, therefore, how far they are likely to be at risk of poverty. This should be borne in mind when interpreting the results of the analysis.

As is indicated in Figure 2.4, in most Member States jobless households are at the highest risk of poverty. The risk among such households is particularly high (over 50%) in the three Baltic countries, Ireland, the UK and Spain, while it is only

slightly lower (over 40%) in Belgium, Cyprus, Portugal, Italy and Hungary. In most countries, the risk of poverty declines significantly as the work intensity index increases.

The situation of households where at least one person is employed, but not all members have worked full time during the year (which means a work intensity of between 0 and 1) is more polarised. In Luxembourg, households where work intensity is between 0 and 0.5 show substantially higher risk of poverty than both jobless households and those with higher work intensity, while in Greece, Poland, Sweden, Finland, Hungary and Denmark the difference between the poverty rates of households with work intensity of 0 and below 0.5 is negligible. The risk-of-poverty rates among households with work intensity of between 0 and 0.5 are highest in Estonia (48%) and Latvia (45%), the same two countries that also exhibit the highest risk among jobless households. Although the poverty rates of households with work intensity of between 0.5 and 1 tend to be generally lower than the national average, there are a number of countries, including the Netherlands, Slovakia, Luxembourg, Portugal, Italy and Lithuania, where this is not the case.

Figure 2.4: At-risk-of-poverty rates by work intensity of the household



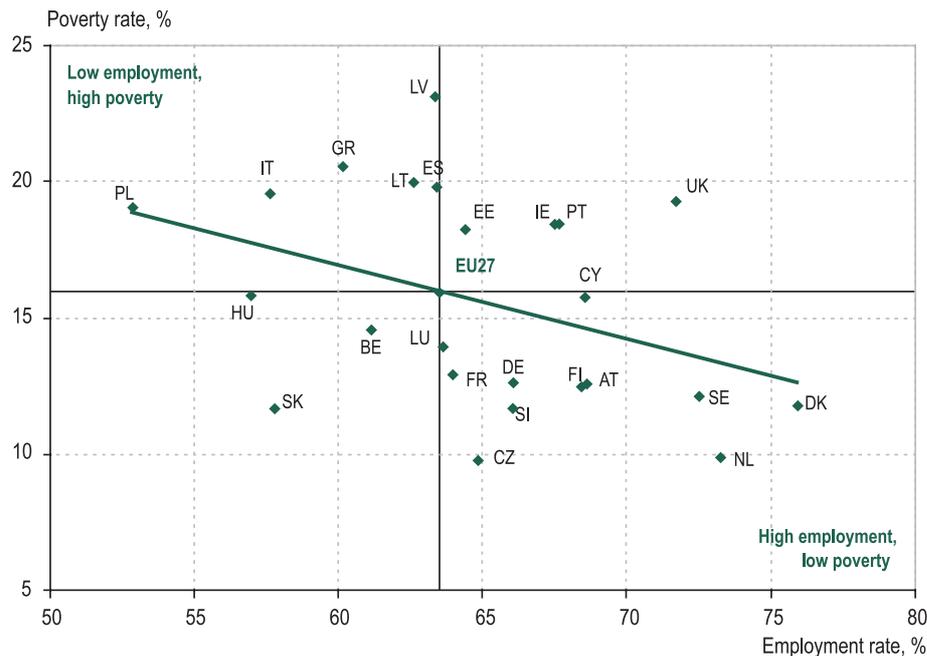
Source: Own calculations based on EU-SILC 2006

Households with work intensity equal to 1 exhibit by far the lowest risk-of-poverty rates, which indicates that full employment (meaning all household members of working age) seems the key condition to protecting people against poverty.

The Lisbon Agenda of the European Union promotes ‘more and better jobs’ and greater social cohesion. Although there is no clear-cut causal relationship between the level of employment and the risk-of-poverty rates, it is clear that an increase

in the latter tends to be associated with a decline in the former. A high level of employment, however, does not necessarily guarantee a low overall risk-of-poverty rate, though a low employment rate makes it difficult to avoid having a relatively large proportion of the population with income below the poverty line. This is illustrated in Figure 2.5, which is divided into four quadrants, according to the EU average of the two rates. The top-left quadrant shows countries with both a high risk of poverty and low employment, while the bottom-right panel shows high employment and low risk of poverty, thus above-average performance in both respects.

**Figure 2.5: Level of employment and poverty**



Source: Own calculations based on EU-SILC 2006

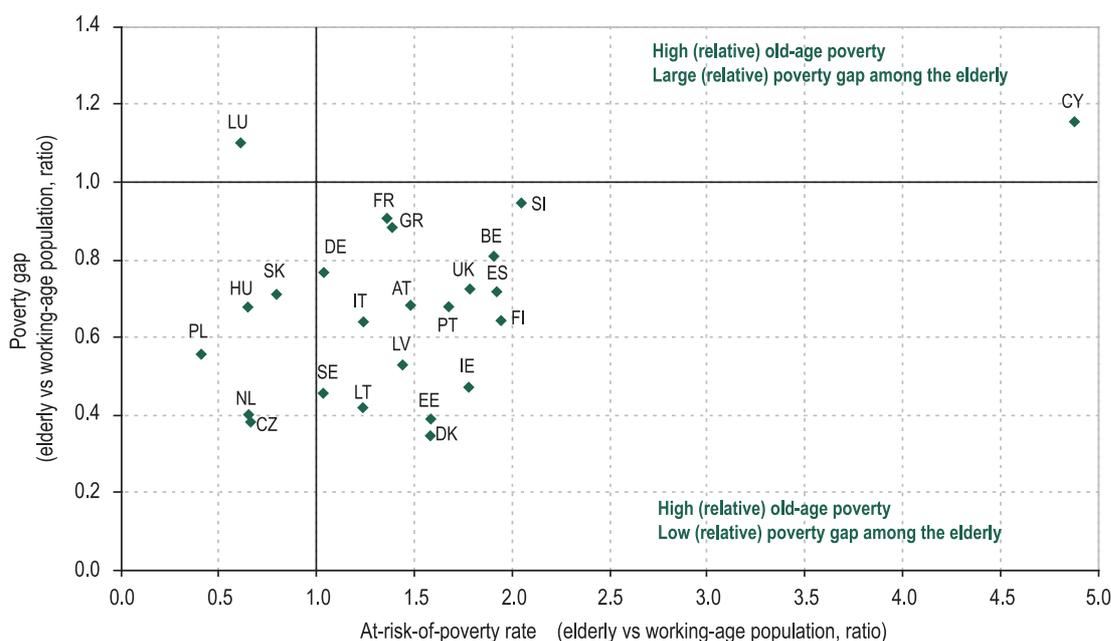
Although there is only a weak correlation between the employment rate and the risk-of-poverty rate, countries with a low employment rate tend to have a high risk of poverty, while countries with a high employment rate tend to have a lower risk. The malaise of a high risk of poverty coupled with low employment is evident in the Mediterranean countries, apart from Portugal, reflecting the relatively low level of unemployment benefits and social assistance in Greece, Spain and Italy.

Low employment, however, does not necessarily go together with a high poverty risk. There is considerable variation among the new Member States, in which employment tends to be relatively low: the risk of poverty is relatively high in Poland, around the EU average in Hungary and below the average in Slovakia. Similarly, while high rates of employment do not necessarily mean a low risk of poverty, there are more countries where this is the case than not. The actual impact of unemployment on poverty is strongly mitigated by the institutional structure of the given country (see e.g. Makovec and Zaidi 2007).

### The poverty gap by age and gender

In the majority of EU Member States, the elderly are more likely to have income below the poverty threshold, but their income tends to be less far below the threshold than the income of those people of working age who are similarly at risk. In other words, the poverty gap for the elderly tends to be relatively small. Figure 2.6 shows the risk-of-poverty rate and the poverty gap for those aged 65 and over, relative to those of working age. The top-right quadrant of the graph indicates that there is only one country, Cyprus, with both a high risk of poverty among the elderly and a relatively large poverty gap (both figures as compared to the working-age population). By contrast, the elderly in the Czech Republic, Slovakia, Hungary, Poland and the Netherlands (in the bottom-left quadrant) have both a low poverty risk and a small poverty gap. The majority of countries, 17 of the 24, are situated in the bottom-right quadrant, with a relatively high poverty rate among those aged 65 and over but a relatively small gap — implying that, while the elderly population is more likely to have income below the poverty line, the extent to which it falls below that line is, on average, less than among the population of working age. This highlights the fact that pension systems tend to provide a safety net, but one that, in most countries, operates below the poverty threshold.

**Figure 2.6: At-risk-of-poverty rates and poverty gaps by age. Relative ratios of the elderly (65+ years) and the working-age population (18–64 years)**



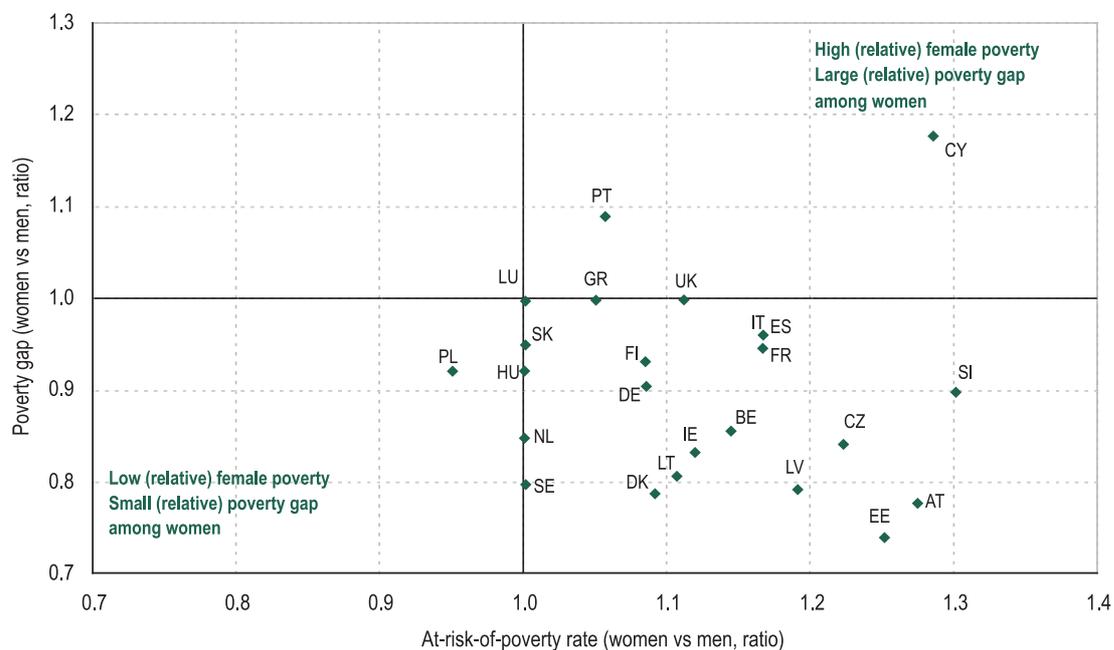
Source: Own calculations based on Eurostat New Cronos database and EU-SILC 2006

The relative situation of women shows a somewhat similar pattern to that of the elderly. Women are more likely to be at risk of poverty in most countries, but their income does not fall as far below the poverty threshold as that of men. In the majority of Member States, 14 of the 24, the risk of poverty is higher among

women, but the poverty gap is smaller (i.e. they are situated in the bottom-right quadrant of Figure 2.7. In only two countries, Cyprus and Portugal, is the poverty gap larger for women than for men (i.e. they appear in the top-right quadrant). At the same time, there are a number of countries where there is no significant difference between men and women in terms of risk-of-poverty rates (Slovakia, Hungary, the Netherlands and Sweden), or the poverty gap (Greece and the UK), or both (Luxembourg).

Gender differences in the risk of poverty, however, are strongly linked to household composition, since, because of the way incomes are measured (i.e. on an equivalised basis and shared between household members equally), any difference arises solely from the situation of men and women living alone. In particular, because of the longer life expectancy of women, there are larger numbers of women aged 65 and over living alone than of men.

**Figure 2.7: At-risk-of-poverty rates and poverty gaps of women relative to men**



Source: Own calculations based on Eurostat New Cronos database and EU-SILC 2006

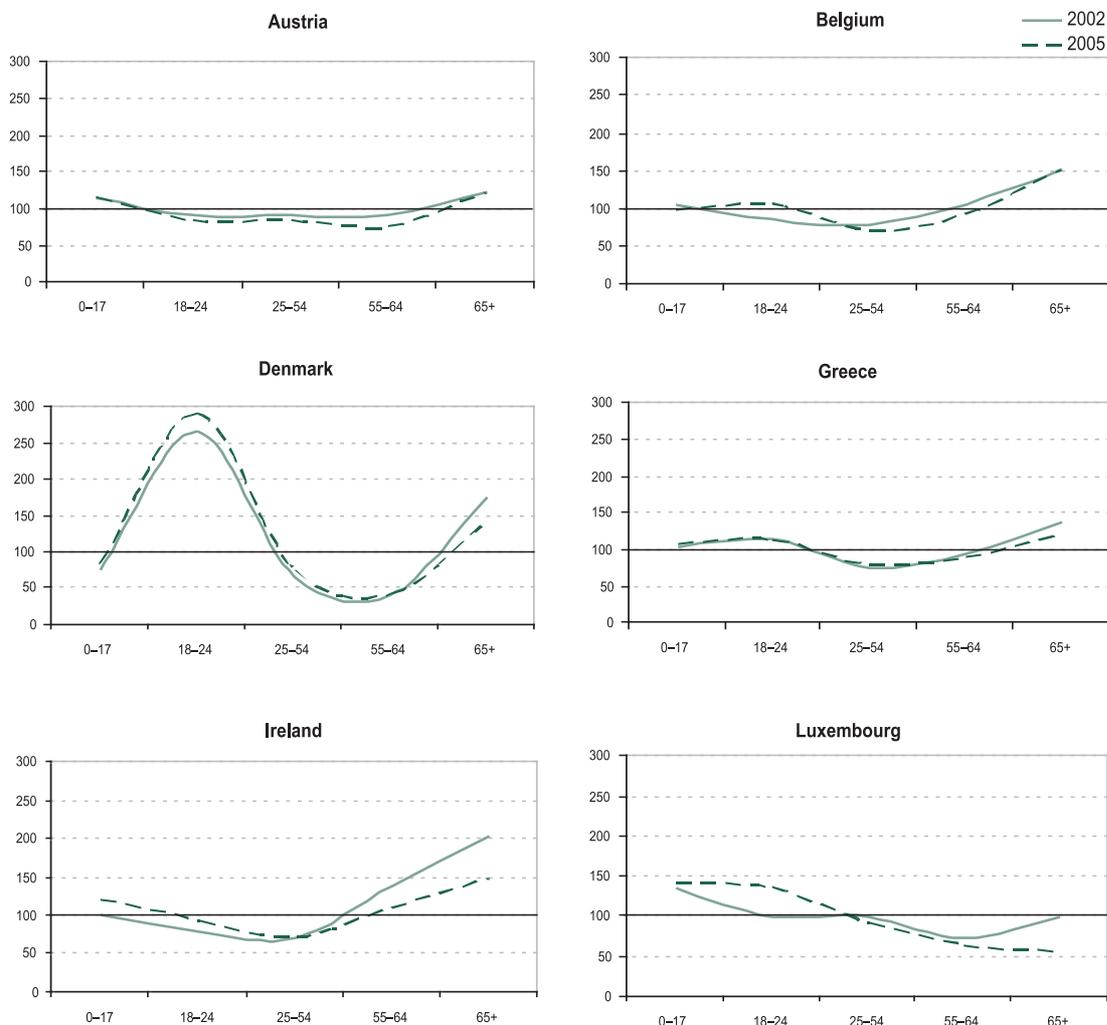
Accordingly, the size of the gender difference in risk-of-poverty rates is much smaller than the difference between age groups across countries. While the difference in the risk-of-poverty rates by age group ranges from 0.4 to 4.9, the difference between men and women only ranges from 0.95 to 1.3.

### Age patterns of poverty trends between 2002 and 2005

The question of how far the risk of poverty among particular age groups has changed in recent years is difficult to answer because of the change in data sources. Nevertheless, some indication can be gained by relating the rates of different age groups to the national average. However, for only six countries — Belgium,

Denmark, Ireland, Greece, Luxembourg and Austria — are the data available to do this for a period of more than two years. The results are shown in Figure 2.8, curves above the 100% line indicating an above-average risk of poverty, and those below a below-average risk. Two data points are compared: 2002 and 2005.

**Figure 2.8: Relative poverty risk by age group in six EU countries, 2002–05 (poverty rate of the entire population in each year = 100%)**



Source: Own calculations based on the Eurostat New Cronos database

Note: Relative poverty risk = poverty rate of a specific age group divided by the poverty rate for the entire population x 100.

There is no uniform pattern of change over the period, though the risk of poverty among the elderly either remained unchanged or declined in the six countries between 2002 and 2005. In contrast, there is evidence of some increase in the risk of poverty among children in Ireland, among the working-age population in Ireland and Denmark, and among young people aged 18–24 in Belgium and Luxembourg. In the latter two countries, this was accompanied by a reduction in the risk among those aged 55–64. This is broadly in line with the findings for OECD countries,<sup>4</sup> for which a decline in the risk of poverty was evident among the

<sup>4</sup> Average of 23 OECD countries.

elderly between ‘around 2000’ and the ‘mid-2000s’, while there was an increase among working-age population during the same period (OECD 2008, p. 132).

## Decomposition analysis of income inequalities<sup>5</sup>

As indicated by the above analysis, various factors underlie income inequalities and the risk of poverty. Earnings from the employment of households depend on the characteristics of the members, as valued by the labour market (like age, gender and education level), which tend to vary between regions (i.e. where the household is situated), as well as on whether household members decide to work or not. Households might have capital or self-employment incomes, which are also influenced by individual and household characteristics. Of course, the well-being of individuals is also dependent on the number of household members living together. Individuals living in households with more dependent members enjoy a lower well-being level for a given level of household income. Thus household structure is also an important determinant of individuals’ income status and inequality of income. Differences in market income might be mitigated by government redistribution that is targeted at low-income groups.

In this part, we study the explanatory factors of income inequality and poverty. First of all, we analyse factors that explain income inequality by a given household characteristic. We then analyse the correlates of poverty.

## Determinants of household income

Here we examine the main driving forces underlying inequalities. As earnings from employment are the most important part of household income, the focus is on the effect of household members being in work, as well as on important determinants of employment and earnings, such as age, education and degree of urbanisation. We also investigate the role of socio-demographic factors (like household structure) on the distribution of income.

According to human capital theory, those with higher levels of educational attainment enjoy higher wages because of their higher productivity. Workers also accumulate know-how while working, which likewise tends to increase their productivity; so experience also tends to lead to higher wages. A common argument is that the increasing inequality of earnings in developed countries is a result of technological change, which tends to increase the productivity of higher-educated workers relative to the lower educated. If, in the short term, the supply of educated people fails to match the increase in demand, the premium on education will tend to increase. Sudden technological changes might also cause a change in the steepness of the age-earnings profile, since, for example, the education of younger people may be better adapted to the requirements of the new technology than the education and skills of older workers. In this case, demand will increase more for the young who are well educated and less for older workers, which will result in a less steep age-earnings profile. The effects of the socio-demographic characteristics

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<sup>5</sup> Based on work by Márton Medgyesi and István György Tóth.

(age, education, household structure and degree of urbanisation) and of the labour market-related characteristics (employment and work intensity) of the household are examined below by applying decomposition of inequality indices.

## Methodology of decomposition analysis

The concern is to investigate the effect of being in employment, of age and of education level on the distribution of income. The relevant question to consider in this regard can be formulated in two ways. The first is: how much inequality would be observed if age (or education or employment) were the only source of income dispersion? The second is: how much would income inequality be diminished if, starting from the actual distribution, income dispersion due to age (or education, employment, etc.) were eliminated by making age-group means identical, while preserving within-group inequality. The Mean Log Deviation (MLD) index<sup>6</sup> is selected here to perform the calculations because, as argued by Shorrocks (1980), in this case the answers to the two formulations coincide. The MLD index is additively decomposable, which means that it can be written as the sum of two components: a weighted sum of within-group inequalities and between-group inequality (that is, inequality that would be observed if the incomes of all individuals were replaced by their respective group means). In the case of the MLD, decomposition weights are simply population shares of different groups; the within-group component is, therefore, the sum of within-group MLD indices, weighted by the population shares of the respective groups.<sup>7</sup> The same methodology has been used by a number of authors to investigate the effect of various individual or household attributes on income inequality (for example, Jenkins 1995). Since the sum of between-group and within-group inequalities equals total measured inequalities, the various components can be expressed in percentage terms. While this method is not suitable for uncovering true, causal relationships, it is a first step and gives intuitive results, which can then be confirmed by more elaborate analysis.

The analysis is carried out on the basis of equivalised household income, using the OECD modified scale. Variables used for grouping in the decomposition analysis are based on the attributes of the (assumed) head of the household in which people live. Since no household head is defined in the EU-SILC, this is taken to be the oldest man of working age (18–64). If there is no man of working age, then the oldest woman of working age is taken as the household head instead. If there are no members of the household of working age, the oldest man of 65 or older is taken as the household head, or the oldest woman if there is no man.

We will be considering socio-demographic attributes: age of the household head, the household structure, the education of the household head and the degree

<sup>6</sup> For a definition of the MLD index, see the Glossary.

<sup>7</sup> Formally,  $v_k$  refers to the share of  $k$  subgroups in total population,  $v_k = n_k/n$ , and  $\lambda_k$  to the ratio of average incomes of a  $k$  subgroup to the average incomes of the total population,  $\lambda_k = \mu_k/\mu$ , and  $\theta_k$  to the share of  $k$  sub-population from total incomes in the population,  $\theta_k = v_k \lambda_k$ . Total inequality, as measured by the MLD index, can be decomposed as the sum of two components:  $MLD = \sum_k v_k MLD_k + \sum_k v_k \log(1/\lambda_k)$ . The first part of the right-hand side of the equation relates to the ‘within-group’ inequalities: it denotes the weighted average of inequalities within the subgroups. The second part of the expression relates to ‘between-group inequalities’: the part of inequalities that would remain if the income of each individual in a subgroup were replaced by the average of the subgroup.

of urbanisation of the household's place of residence. Age of household head is grouped into four categories: 18–35 years old, 36–49 years old, 50–64 years old, and over 65 years of age. Household structure is a five–category variable: households with a working–age head (between 18 and 64 years of age) were grouped according to the number of children (no children, one child, two children, three or more children), and households with a retirement–age head constitute the fifth category. Education of the household head is coded on a three–point scale (lower than upper secondary, upper secondary, tertiary education), employment status is also grouped in three categories (employed, active–age inactive, retired). The degree of urbanisation variable is coded: densely populated area, intermediate area, and thinly populated area.<sup>8</sup> Among the labour market characteristics of the household, we investigate the effect of the employment of the household head and the work intensity of the household. Work intensity of the household is defined on the basis of the total number of months worked by all household members, related to the number of total workable months.<sup>9</sup> In our decomposition analysis, we use a three–category version of the variable: work intensity less than one half; work intensity more than half but less than one; work intensity equal to one.

## Results of the decomposition analysis

The results of the static decomposition analysis are summarised by reviewing the importance of each explanatory factor in turn.

### Socio-demographic attributes

#### *Age of household head*

With the exception of five countries, age differences account for less than 5% of total inequality, as measured by the MLD index. Age differences are most important in the Nordic countries, Cyprus and Estonia. In Denmark, the between–age–group component of inequality amounts to 12% of the total, in Sweden to 8%, and in Finland and Cyprus to 7%, while in Estonia, age accounts for 6% of total inequality. On the other hand, in Poland, Portugal, Hungary and Italy, the age of the household head explains less than 2% of overall inequality (Figure 2.9).

In the countries where the effect of age is relatively important, this arises from income differences both among those of working age and between this group and those aged 65 and over, almost all of whom are retired. In Denmark, the average income of those aged 50–64 is 20% higher than the country mean, while the average income of those aged 18–35, and of those aged 65 and over is 20% lower than the overall mean. The pattern in Sweden is similar. In Cyprus, the effect is mainly due to the low incomes of those aged 65 and over, whose relative income is much less

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<sup>8</sup> 'Densely populated area' is a contiguous set of local areas, each of which has a density of over 500 inhabitants per square kilometre, where the total population for the set is at least 50,000 inhabitants. 'Intermediate area' is a contiguous set of local areas, not belonging to a densely populated area, each of which has a density of more than 100 inhabitants per square kilometre, and either with a total population for the set of at least 50,000 inhabitants or adjacent to a 'densely populated' area. 'Thinly populated area' is a contiguous set of local areas belonging neither to a 'densely populated' nor to an 'intermediate' area.

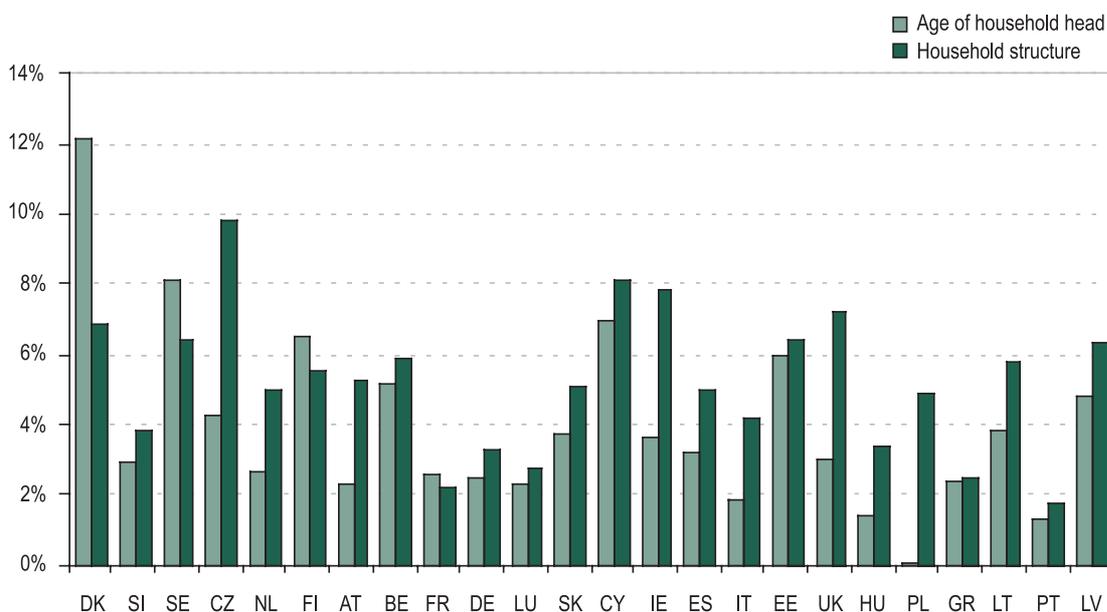
<sup>9</sup> A more detailed definition of work intensity is provided in the Glossary.

than in the other countries covered. The relative incomes of the elderly are also low in the Baltic states, Ireland, Spain and Belgium. By contrast, the elderly enjoy a relatively favourable level of income in Austria, France, the Netherlands, Luxembourg and Poland, where their average income is close to the national average.

### Household structure

Household structure explains 10% of total inequality in the Czech Republic. In Cyprus and Ireland this variable accounts for 8% of inequality as measured by the MLD index, while Denmark and the UK show between-group effects of over 7% (Figure 2.9). Countries where the explanatory role of household structure is low include Luxembourg, Greece, France and Portugal, where differences between average incomes of different groups account for less than 3% of total inequality. Income differences by household structure partly mirror income differences between working-age (18-64 years) and retirement-age (over 65 years) people — something we have discussed already. The other part of income dispersion by household structure is income differences according to the number of children in families with a working-age household head. Average income of households with three or more dependent children is lower than the overall mean income in every country. The relative income situation of these families is worst in the Baltic states, Poland, the Czech Republic and the United Kingdom, where the average income of these families is less than two-thirds of the mean income of childless households. Income differences according to the number of children are least pronounced in Slovenia, Denmark, Finland, Luxembourg, Belgium and Portugal, where the average income of households with three or more children is 10-20% lower than that of childless households.

**Figure 2.9: Fraction of inequality explained by socio-demographic factors: age and household structure**



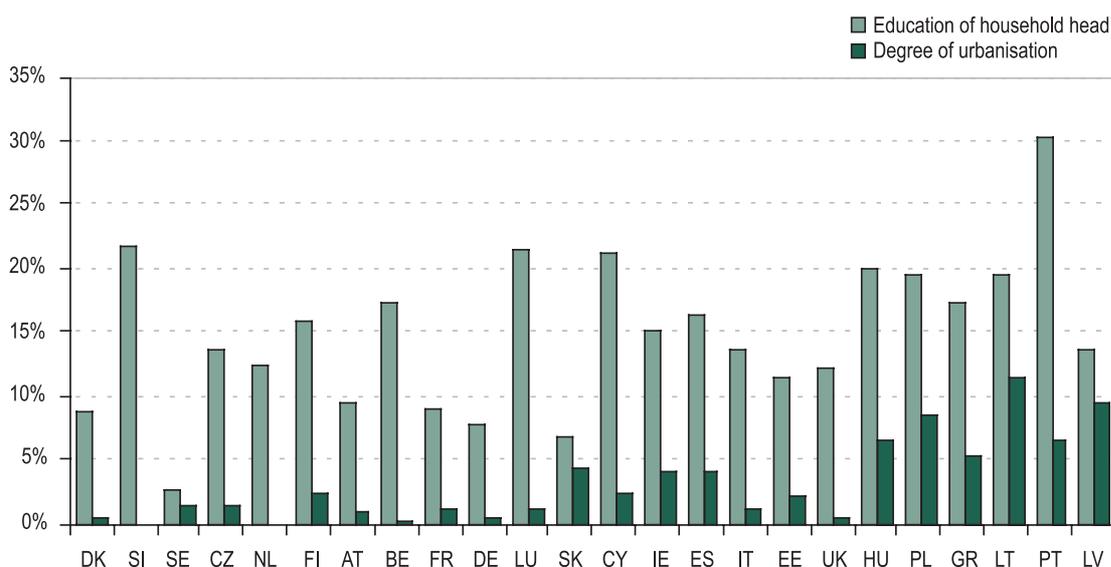
Source: Own calculations based on EU-SILC 2006  
 Note: Countries are ranked according to the MLD index of total inequality.

### The effect of the education level of household head

In general, education is more important than age or household structure in explaining income differences, but the effect differs markedly among the countries covered<sup>10</sup> (Figure 2.10). In some countries — in particular, Sweden, Slovakia, Germany, Denmark and France — education accounts for less than 10% of income inequality, as measured by the MLD index. At the other end of the scale, income differences between education groups in Portugal account for 30% of total inequality, but even in countries like Hungary, Lithuania, Poland, Cyprus, Luxembourg and Slovenia it accounts for around 20% of the MLD index. Countries characterised by a between-group effect of just over 15% include Spain, Finland, Belgium and Greece, while in other countries education explains between 10% and 15% of inequality.

Income differences between those with different education levels can be important at both the lower and the upper ends of the distribution. The relative incomes of those with low education levels are lowest in the UK, Lithuania, Estonia, Latvia, the Czech Republic and Poland. The average incomes of those with tertiary education are highest in relative terms in Portugal, but relative incomes of those with tertiary education are also high in Poland, Latvia, Lithuania, Hungary, Slovenia and Italy.

**Figure 2.10: Fraction of inequality explained by education and degree of urbanisation**



Source: Own calculations based on EU-SILC 2006

Note: Countries are ranked according to the MLD index of total inequality.

<sup>10</sup> In such decompositions, it is generally not recommended to compare between-group effects across variables with different numbers of groups, since a higher number of subgroups obviously leads to more dispersion between groups and less dispersion within groups. In our case, education and labour market variables are all coded on a three-point scale, and thus between-group effects can be safely compared. When comparing the effect of age and household structure with those of labour market variables, it should be kept in mind that age and household structure comprise four and five subgroups. This, however, does not weaken our conclusion that labour market effects are stronger.

### *Degree of urbanisation*

The degree of urbanisation of the settlement where the household resides explains the highest percentage of inequality in Latvia, Lithuania and Poland (see Figure 2.10). The first in the ranking is Lithuania, where this variable accounts for 12% of total inequality. In Latvia, the degree of urbanisation explains 10% of inequality, and in Poland, 9%. By contrast, this variable has a negligible effect in many countries. In Belgium, Denmark, the UK, Germany and Austria, degree of urbanisation accounts for less than 1% of the MLD index, while in another five countries the between-group effect is between 1% and 2% of total inequality.

### **Labour market status**

#### *Employment status of household head*

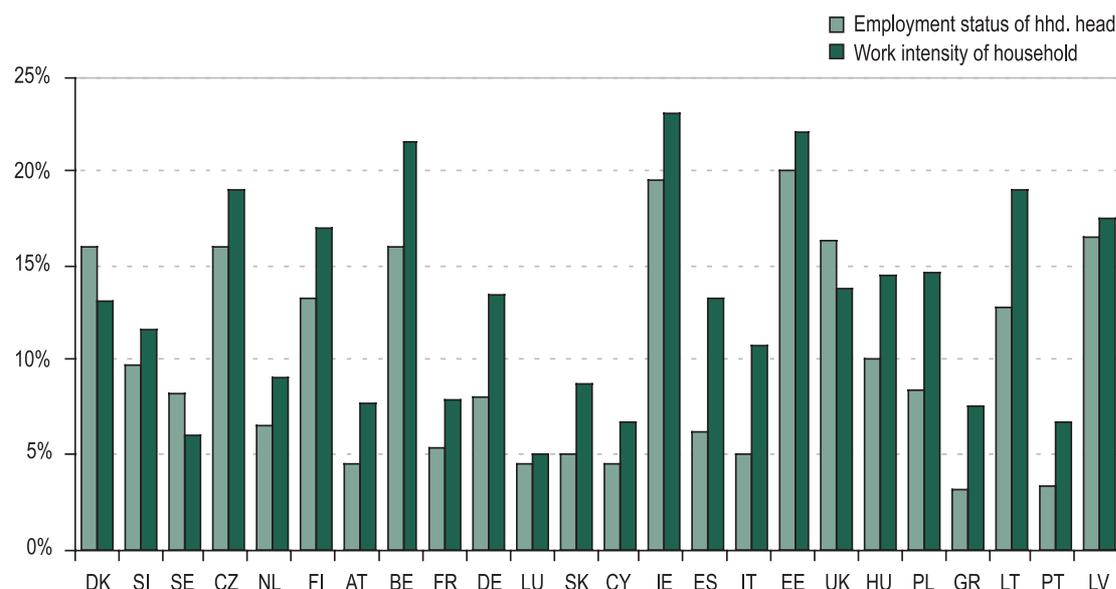
There is also great variability in the effect on inequality of the employment status of the household head. In some countries, income differences as regards employment status account for less than 5% of income inequality (see Figure 2.11). These are Austria, Luxembourg, Italy, Greece, Portugal and Cyprus. In Estonia, Latvia, Ireland, the UK, Denmark, Belgium and the Czech Republic, income differences according to employment status account for over 15% of total inequality, while Hungary, Lithuania and Finland also show a between-group effect of over 10%.

The biggest difference between the average income of those employed and those not employed can be found in Ireland, the UK and the three Baltic states. The incomes of those employed are also relatively high in the Czech Republic, Germany, Denmark, Finland and Poland, while the incomes of those not in work are also low in the Czech Republic, Belgium and Denmark.

#### *Work intensity*

Although the actual employment status of the household head can be a good proxy for the household's labour market involvement, we can use a more precise measure, which is based on the employment situation of all household members over the year preceding the survey. This work intensity variable is based on the ratio of the total number of months worked by all household members to the total number of workable months. The value of the work intensity variable is 1 if all household members were working for the whole year, while its value is 0 if none of the household members worked during the year.

Income differences according to work intensity explain the largest fraction of total inequality in Ireland, Estonia and Belgium, where this variable accounts for more than 20% of total inequality. (Figure 2.11) Finland, Latvia, Lithuania and the Czech Republic also show relatively high between-group effects, in the 17–19% range. The countries where the work intensity of the household explains the lowest fraction of total inequality are Luxembourg, Sweden, Portugal, Cyprus, Greece and Austria. In these countries, the differences in the average income of subgroups account for between 5% and 8% of total inequality.

**Figure 2.11: Fraction of inequality explained by employment status and work intensity**

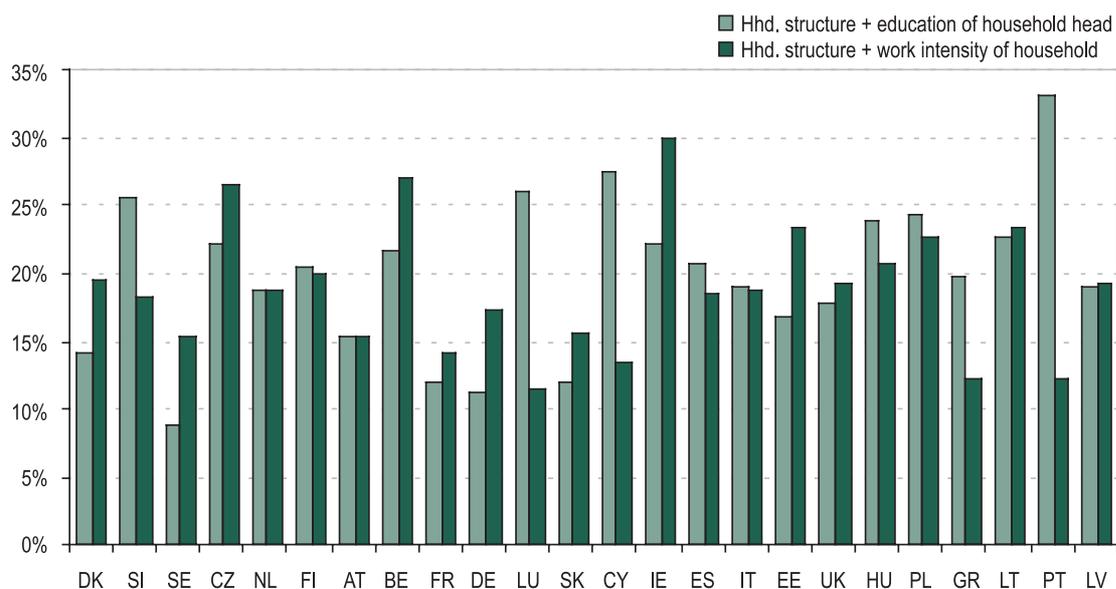
Source: Own calculations based on EU-SILC 2006

Note: Countries are ranked according to the MLD index of total inequality.

### Joint effect of socio-demographic variables and labour market status

We also investigated the joint effect of socio-demographic and labour market variables on inequality. We combine household structure with the education level of the household head and with the work intensity of the household (see Figure 2.12). Education seems to have a stronger effect on the ranking of countries when we examine the combined effect of household structure and education. Household structure and education jointly explain the highest proportion of total inequality in countries where the effect of education was the strongest (see Figure 2.10). At the top of the country ranking we find Portugal, where these two variables account for a third of overall inequality, as measured by the MLD index. In Cyprus, Luxembourg, Slovenia, Poland and Hungary, the two variables explain around a quarter of total inequality. At the other end of the country ranking is Sweden, where these two variables account for less than 10% of total inequality. The combined effect of these two variables is also relatively low in Denmark, Germany, France and Slovakia, where the two variables explain between 11% and 15% of total inequality.

When examining the joint effect of household structure and work intensity, we see a country ranking that is similar to the ranking according to the work intensity variable (see Figure 2.11). Ireland is the country where these two variables explain the highest fraction of inequality (30%), but Belgium, Lithuania, Estonia, the Czech Republic and Poland also record relatively high between-group effects (22–27%). On the other hand, in Luxembourg, Portugal and Greece this variable accounts for only 11–12% of total inequality.

**Figure 2.12: The joint effect of household structure and labour market status on inequality**

Source: Own calculations based on EU-SILC 2006

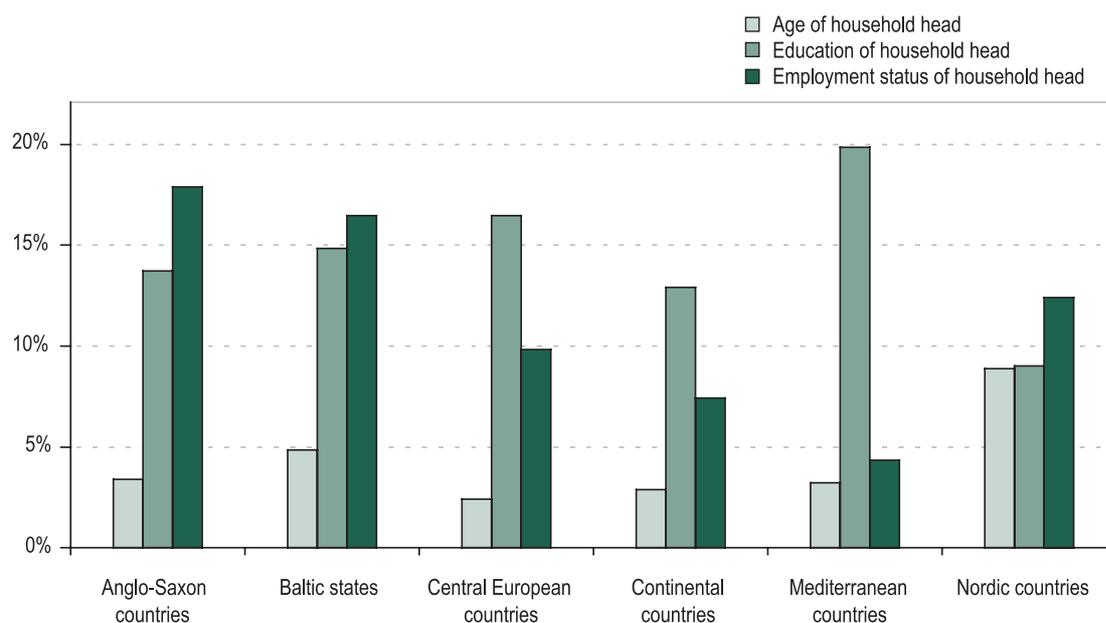
Note: Countries are ranked according to the MLD index of total inequality.

## Results of static decomposition analysis by country groups

The results of the static decomposition analysis can be summarised by creating six country groups and calculating the averages of the between-group effects for each of these. The groups in question are: the Nordic countries (Sweden, Denmark and Finland), the Mediterranean countries (Portugal, Spain, Italy, Greece and Cyprus), the Continental countries (France, Germany, Belgium, the Netherlands, Luxembourg and Austria), the Anglo-Saxon countries (the UK and Ireland), the Central European countries (Poland, the Czech Republic, Slovakia, Slovenia and Hungary) and the three Baltic states (Lithuania, Estonia and Latvia). The average of the between-group components of inequality according to age, education and employment status of the household head are shown for each of these country groups in Figure 2.13.

The Anglo-Saxon and the Baltic states have a similar structure of inequality. In these countries, both education and employment explain around 15% of total inequality, and this effect is stronger than the effect of age (around 5%). The Nordic countries show a different structure of inequality, since age, education and employment all have broadly similar effects on income inequality. In the Continental, Central European and Mediterranean countries, education is the most important factor among the variables considered in this analysis. Employment also has an important effect in the Continental and Central European countries, but among the Mediterranean countries the effect of employment status has a similarly small effect to that of age.

Figure 2.13: Percentage of inequalities explained by different factors in the country groups, 2005



Source: Own calculations based on EU-SILC 2006

Note: Percentages are simple country averages.

## Concluding remarks

Children are exposed to a relatively high risk of poverty in the majority of EU Member States (16 of the 24 covered here). In 10 of the 16 countries, moreover, the risk of poverty is higher among children than among the elderly. The occurrence of child poverty increases among households with more dependent children, but it is also high among single parents, reaching 30% in most EU countries. Note, however, that one-person households are also at high risk of poverty, and often face poverty rates that are several times higher than for two-adult households.

Employment tends to provide a route out of poverty for the overall majority of households. Jobless households, on the other hand, are at high risk: in some countries (including the Baltic States, Ireland, the UK and Spain), over half of this group have incomes below the poverty thresholds.

In recent years, we can find modest evidence for declining poverty among the elderly in Denmark, Greece, Ireland and Luxembourg, although the data series (with consistent data) is currently too short to allow sound trends to be established.

With respect to the situation of the elderly, in the majority of countries there is a high occurrence of old-age poverty (compared to the working-age population), but at the same time a relatively low poverty gap. The elderly may thus have incomes below the poverty threshold, but the *extent* to which their income falls below the poverty line is often less than among their working-age compatriots.

Women are more likely to be poor, but in most countries their poverty gap tends to be smaller than that of men. Thus, women are more likely to fall below the threshold, but, once poor, men tend to fall deeper.

On a country level, a high level of employment seems to yield low levels of poverty in most countries, but not all. The exceptions include Ireland, Portugal and the UK, where high levels of employment coincide with above-average levels of poverty. In a number of countries, low employment is coupled with high poverty, including Poland, Italy and Greece.

In the second part of this chapter, we compared the role of different factors in explaining income inequality across countries. We investigated the effect on the distribution of income of socio-demographic factors (age, household structure, and education), as well as labour market status, such as employment status and work intensity of the household.

Our analysis showed that, for a majority of countries, labour market-related factors (employment status and work intensity) and education are more important in explaining inequalities than are age or household structure. Income differences between education groups account for the largest share of total inequality in Southern European countries — e.g. Portugal or Cyprus — and new Member States, especially Hungary, Lithuania, Poland and Slovenia. Income differences according to work intensity of the household explain the largest fraction of total inequality in Ireland, Belgium and Estonia, but this variable is also important in explaining inequality in the other Baltic states, Finland and the Czech Republic.

In most of the countries, age differences account for only a relatively small part of total inequality (less than 5%). The role of age-related income differences is comparable to that of labour market-related variables only in the case of the Nordic countries. Household structure is the most important in the Czech Republic, Cyprus, Ireland, Denmark and the UK, but even in these countries the percentage of inequality explained by this variable is lower than in the case of labour market-related variables.

## Appendix

Table A2.1: At-risk-of-poverty rates by household type

Country	One-person household	Two adults, no dep. children, both under 65 years	Two adults, no dep. children, at least one adult 65 +	Other households without dependent children	Single-parent household, one or more dep. children	Two adults, one dependent child	Two adults, two dependent children	Two adults, three or more dependent children	Other households with dependent children	N
AT	22.1	10.3	11.8	6.3	28.8	9.0	11.2	19.4	5.3	14,883
BE	23.7	9.8	21.2	8.5	32.5	8.9	7.6	14.4	14.6	14,292
CY	43.4	15.6	50.8	10.6	34.4	8.3	8.4	12.3	6.7	11,069
CZ	17.0	4.9	2.5	2.8	40.8	7.5	9.8	29.5	8.5	17,830
DE	21.8	11.5	10.9	6.5	24.4	7.6	9.0	13.1	8.0	31,717
DK	25.3	5.3	13.1	3.2	19.5	4.1	4.1	12.4	10.0	14,549
EE	42.5	14.0	7.6	7.0	40.8	13.4	12.0	23.5	11.3	15,741
ES	34.9	10.3	30.2	12.1	37.6	14.9	22.1	41.8	20.4	34,183
FI	33.0	6.6	9.4	4.9	18.3	5.3	5.7	12.1	7.4	28,039
FR	18.6	8.5	12.5	11.5	28.6	10.1	8.9	18.6	17.7	24,726
GR	24.6	15.5	24.3	14.9	29.6	15.2	20.7	38.0	29.6	15,112
HU	17.6	10.3	8.1	5.8	38.8	13.8	18.4	33.6	13.9	19,902

Table A2.1: At-risk-of-poverty rates by household type

Country	One-person household	Two adults, no dep. children, both under 65 years	Two adults, no dep. children, at least one adult 65+	Other households without dep. children	Single-parent household, one or more dep. children			Two adults, one dependent child	Two adults, two dependent children	Two adults, three or more dependent children	Other households with dependent children	N
IE	46.3	13.6	12.0	6.7	47.3	10.2	14.5	21.9	11.8	14,634		
IT	27.5	11.3	18.3	8.9	31.9	17.7	22.1	40.8	23.0	54,512		
LT	38.0	13.7	11.9	9.5	44.2	16.1	15.4	41.5	13.2	12,134		
LU	16.3	7.2	7.5	7.6	48.5	10.1	14.4	23.6	18.3	10,242		
LV	55.4	21.6	15.9	11.3	40.4	15.1	21.6	51.6	16.2	10,892		
NL	14.6	5.2	7.1	5.8	32.1	6.2	8.0	15.9	6.3	23,092		
PL	16.0	13.7	6.2	11.7	31.6	14.2	21.4	37.7	23.6	44,157		
PT	34.9	18.3	25.9	9.5	41.2	12.1	18.6	37.8	15.8	12,042		
SE	21.3	7.3	4.5	4.7	32.0	6.0	5.9	12.7	16.3	17,043		
SI	42.5	12.6	12.4	6.4	22.3	9.0	8.2	15.2	6.9	31,276		
SK	16.6	8.5	4.1	4.7	29.4	8.0	13.6	23.9	12.1	15,138		
UK	28.6	9.5	22.8	13.1	41.2	14.4	13.2	25.3	18.3	22,542		

Source: Own calculations based on EU-SILC 2006

Table A2.2: Poverty in specific age groups and total national poverty rate

Country	Total population	0–15 years	16–64 years	65 years or more
AT	12.6	14.8	11.1	16.2
BE	14.6	15.0	12.4	23.2
CY	15.8	11.0	10.9	52.1
CZ	9.8	16.7	9.0	5.8
DE	12.7	12.1	12.8	13.1
DK	11.8	9.9	11.0	17.4
EE	18.3	19.8	16.2	25.1
ES	19.9	23.8	16.4	30.7
FI	12.5	9.1	11.3	21.7
FR	12.9	13.2	12.0	16.1
GR	20.6	21.6	18.9	25.6
HU	15.9	25.1	14.9	9.4
IE	18.5	20.9	16.2	27.2
IT	19.6	24.5	17.8	21.7
LT	20.0	24.1	18.4	22.0
LU	14.0	19.5	13.6	8.1
LV	23.2	25.5	21.0	29.8
NL	9.9	13.8	9.5	6.1
PL	19.1	26.0	19.5	7.8
PT	18.5	19.8	16.1	26.2
SE	12.2	13.9	11.7	11.8
SI	11.7	11.8	9.8	20.0
SK	11.7	16.6	11.1	8.5
UK	19.3	23.9	15.8	27.8

Source: Own calculations based on EU-SILC 2006