Accounting for growth

Research note 6/2013

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ACCOUNTING FOR GROWTH

RESEARCH NOTE NO 6/2013

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Abstract

This research note considers two recommendations made by the Stiglitz, Sen and Fitoussi report for improving the measurement of social progress. One is that people's living standards are better approximated by measures of household income than by measures of a country's economic performance, such as GDP. The other is to take account of the distribution of income in the measurement of social progress. This research note describes growth in household income and distributional patterns of income change during 2006–2008 and 2008–2010, based on micro-data from household surveys.

The research note first compares estimates of household disposable income growth obtained from household micro-data with macroeconomic estimates obtained from National Accounts. Income growth rates from these two sources show important differences that are related to differences in income concepts and methodological differences between the two approaches. The research note then explores distributional patterns of change in income in EU countries and the variations in these between people in different age groups, with different education levels and living in households with different structure, work intensity and income level. In addition, indicators of income growth are examined, taking account of changes in the distribution of income. By comparing the change in the Sen-index of distributionally adjusted income to changes in average household income, a difference is found between the two in countries where inequality has changed considerably. In 2006–2008, therefore, the significant increase in income inequality in France, Latvia and Lithuania led to the Sen-index rising by less than (unadjusted) average income.

1. Introduction

This research note describes growth in household income on the basis of micro-data and distributional patterns of income change during 2006–2008 and 2008–2010. The Stiglitz report (Stiglitz et al. 2009) stresses that measuring social progress in terms of an increase in gross domestic product (GDP) is problematic in many respects. The report proposes several ways in which the measurement of social progress could be improved. Here we take up only a few of the issues raised there. One issue that the report underlines is that the measurement of social progress needs to focus on citizens' material living standards, which are better followed through measures of household income and consumption than through measures that track the performance of economies as a whole, such as GDP (Stiglitz et al. 2009). Another issue concerns the distribution of economic growth. Measures of average income do not take account of changes in the distribution of income. If inequality in the distribution of income is increasing, it might be the case that – even with increasing average income – the majority of the population experiences a decline in living standards. For this reason, median income should be considered alongside average income, and the relationship between the two should be monitored.

This research note first compares estimates of income growth obtained from macro-data (National Accounts) with estimates from household surveys (Section 2). Then, taking advantage of micro-data, it describes income growth patterns by socio-economic background and position in the income distribution (Section 3). Finally, it explores indicators of social progress that take account of changes in the distribution of household income (Section 4).

2. Income growth in the EU: macro and micro estimates

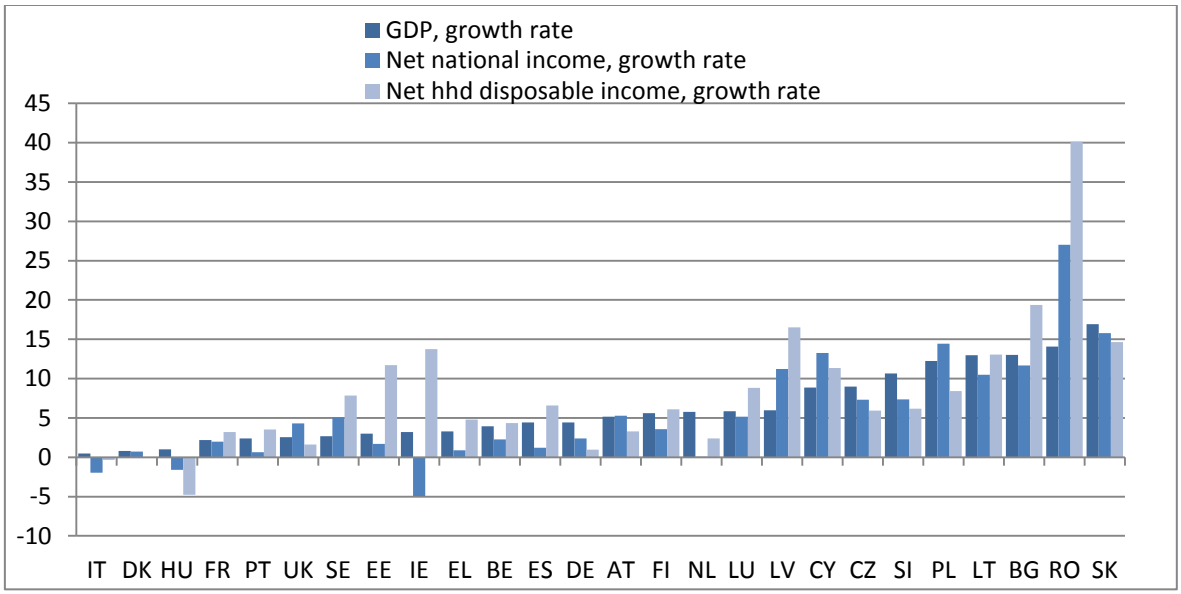
2.1. Growth in living standards: indicators from National Accounts

GDP per capita is often used to compare the living standards of different countries, and GDP growth is the most frequently used indicator of a country's economic progress. The report by Stiglitz, Sen and Fitoussi (Stiglitz et al. 2009) argues that the practice of relying on GDP as an indicator of average living standards in a country is questionable on several grounds. First, GDP is an indicator of market production taking place in a country, and thus provides information related to the supply side of the economy. The authors argue that, instead of GDP, an indicator of income or consumption might more closely measure the living standards of citizens. Moreover, it can be argued that to assess the living standards of a country's citizens, a "national" indicator is more meaningful than a "domestic" one, since some of the income generated by residents (included in the domestic indicator) is sent abroad, and some residents receive income from abroad. These considerations would lead us to consider an indicator of net national income, which is an indicator present in the National Accounts.

Another criticism made by the Stiglitz report concerning the use of GDP as an indicator of average living standards is that it is an indicator related to the whole economy, and measures economic activity in all its sectors (non-financial corporations, financial corporations, general government, households and non-profit institutions). If the purpose is to assess the living standards of citizens living in a country, one should focus on households and use an indicator of their income. As living standards are influenced by consumption, the income concept most relevant for its assessment is disposable income – i.e. income including government transfers, net of taxes.

The following figures (Figures 1a–1c) compare growth in GDP, net national income and the net disposable income of households in 2006–2008, 2008–2010 and 2010–2012.

Figure 1a Growth indicators from National Accounts (% increase at constant prices over the two years), 2006–2008

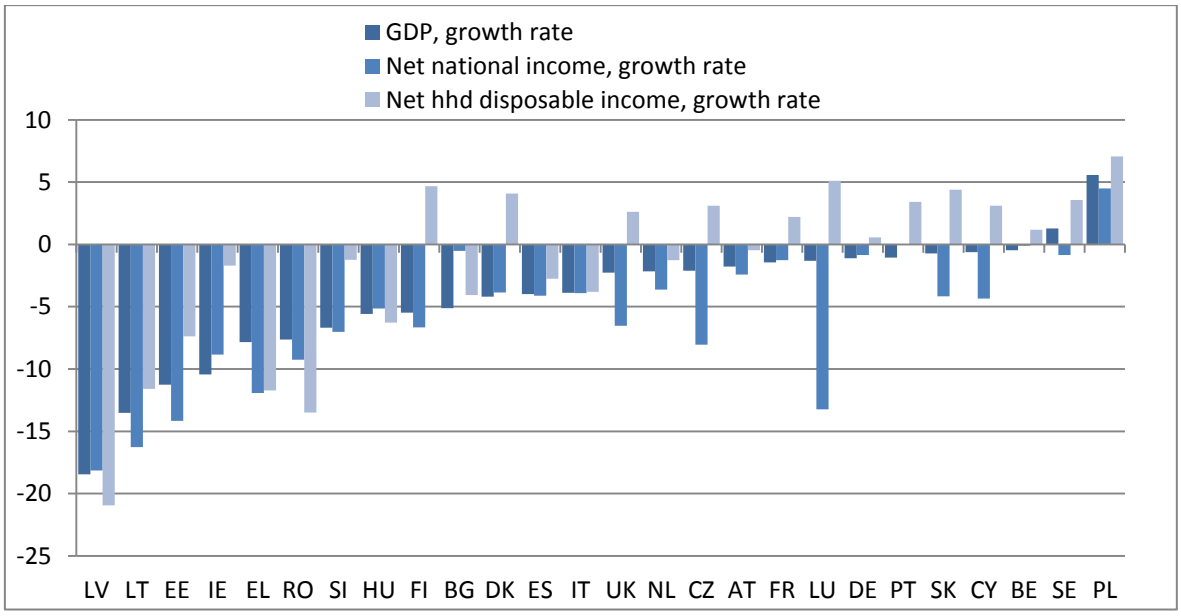


Source: Eurostat database table tec00115 (GDP growth), table nama_inc (net national income), table nasa_nf_tr (net household disposable income).

In the years preceding the financial crisis, the three indicators were similar in terms of the direction of change in the majority of countries. In these years, all the countries recorded positive GDP growth, with the highest growth rates observed in Slovakia (17% in two years), Romania (14%), Bulgaria (13%), Lithuania (13%) and Poland (12%). The lowest GDP growth rates were recorded in Italy, Denmark and Hungary, where GDP increased by 1% between 2006 and 2008. Countries where net national income indicators changed at approximately the same rate as GDP were Slovakia, the Czech Republic, Lithuania, Finland, Belgium, France and Austria. In other countries, net national income changed in the same direction as GDP, but there were considerable differences in the growth rates. Net national income grew faster than GDP in Romania (where it is almost certain that the income data is not comparable between these years), Latvia, Cyprus, Poland and the UK, while countries where the opposite pattern was found included Slovenia and the Netherlands. The net disposable income of households shows the highest rate of growth of the three indicators in Romania (see above), Bulgaria, Latvia, Estonia, Ireland and Sweden.

In 2008–2010, GDP growth was negative in all countries except Poland, where GDP increased by 6% during this two-year period, and Sweden, where 1% GDP growth was recorded. The largest decline in GDP was seen in Latvia (-18%), Lithuania (-14%), Estonia (-11%) and Ireland (-10%). As with GDP, net disposable income in the economy declined in all countries except Poland. In countries like Denmark, Slovenia, Latvia, Italy, Spain and Hungary, net disposable income declined at more or less the same rate as GDP. In Luxembourg, the Czech Republic, Cyprus, the UK, Lithuania and Estonia, the drop in net disposable income was more pronounced than the decline in GDP. The change in net disposable income of households differs in sign from the other two indicators in a series of countries. In Luxembourg, Finland, Slovakia and Denmark, the net disposable income of households increased despite the decline in GDP and total net disposable income in the economy.

Figure 1b Growth indicators from National Accounts (% increase at constant prices over the two years), 2008–2010

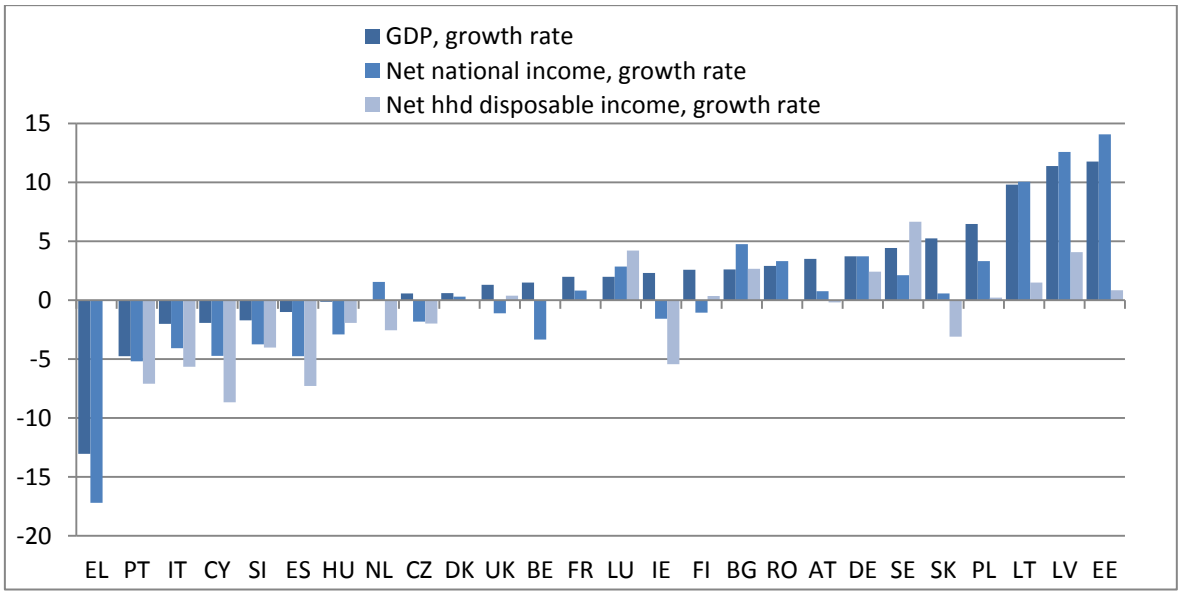


Source: Eurostat database table tec00115 (GDP growth), table nama_inc (net national income), table nasa_nf_tr (net household disposable income).

In 2010–2012, GDP increased in the majority of Member States. The highest growth rates were recorded in the Baltic States and Poland, while GDP declined in the Southern European countries and Slovenia, with the biggest decline being recorded in Greece (-13%) and Portugal (-4.7%). The change in net national income was similar to the change in GDP in terms of direction, but there were some differences in the scale of the change. Net national income tended to decline by more than GDP in countries where GDP fell, while in the Baltic countries it rose by more than GDP. Household disposable income also tended to fall by more than GDP in countries where the latter declined, though it generally rose by less than GDP in those countries where there was GDP growth. In Ireland and Slovakia, household disposable income declined, even though those two countries recorded positive GDP growth. These variations reflect the different changes in the sources of GDP growth, particularly investment and net exports.

It is worth pointing out that, on average across the EU, household income declined by significantly more (almost 5%) in 2010–2012, when GDP was increasing (albeit only slightly), than it did in the preceding two years, when GDP was falling (and when household income declined by 1%). This can be explained by the fact that a major cause of the decline in GDP in 2008–2010 was a large drop in investment, while household income then fell markedly in the subsequent two years as unemployment increased and government austerity packages cut back on social transfers.

Figure 1c Growth indicators from National Accounts (% increase at constant prices over the two years), 2010–2012



Source: Eurostat database table tec00115 (GDP growth), table nama_inc (net national income), table nasa_nf_tr (net household disposable income). In case of net household disposable income data are not available for Denmark, France, Greece and Romania.

2.2. Comparing micro and macro estimates of income growth

Data on household income can be obtained from the National Accounts, as well as from household surveys, which measure income at the micro level. The most important advantage of using household data is that it allows the distribution of income to be examined. Household surveys and the National Accounts use different concepts and statistical methods to measure household income, and consequently there can be differences in the income levels and growth rates calculated from the two.

Some of the most important methodological differences are the following. Household surveys only cover the population living in private households, and exclude people living in institutions (child foster care, elderly care institutions, prisons, etc.). Important differences in the income concepts applied by the two methods relate to in-kind income and social security contributions. Household surveys generally refer to income received in cash, while in-kind income is less accurately recorded; the National Accounts methodology, on the other hand, takes account of such income (e.g. National Accounts take into account imputed rent for owner-occupied housing, whereas in household surveys this is not yet standard practice). National Accounts also include employers' social insurance contributions, while this is generally absent from household surveys. Household surveys are most often limited to regular income flows, while irregular income flows (such as bonuses) are less accurately assessed. Another important difference is that estimates from National Accounts only cover economic activity that is visible to the authorities, while transactions that occur in the informal economy are not included. Survey estimates might be more successful in capturing income from undeclared work, for example.

It is also important to remember that income data from household surveys is subject to recall bias: responses about household income might be inaccurate. Some income types are especially difficult to remember, e.g. income from financial investments or from unincorporated enterprise might be more prone to recall errors. The result is that capital income is less accurately measured in household surveys, and aggregate

estimates for capital income that are obtained from household surveys are typically lower than those obtained from macro-data. Household surveys are subject to sampling and non-sampling error. Sampling error arises from the fact that only some households are surveyed, while non-sampling error includes coverage error, non-response, interviewer error, etc.

Here we examine the extent to which changes in net disposable income in the household sector, as estimated from National Accounts, mirror counterpart changes in household income, as measured in the EU-SILC survey.

2.2.1. The data used

The EU-SILC study is an output-harmonized data collection that is built on a common framework of concepts, procedures and classifications, but that also allows national statistics offices a degree of discretion in implementing the guidelines. As a result, there are considerable differences between participating countries in terms of sample design, data collection and post-collection processing (Wolff et al. 2010). The framework allows many income variables to be based on administrative rather than on survey data, and in some countries (the Nordic countries, the Netherlands and Slovenia) income data and certain demographic information is obtained from administrative registers. This difference might affect comparability, especially for income types that are more susceptible to recall bias (e.g. capital income).

The population surveyed is confined to those living in private households. The two most important income concepts are *annual gross market income* and *total disposable household income*. Gross market income includes all household income before the inclusion of government transfers and the deduction of direct taxes: earnings from employment, self-employment income and capital income, which includes rents, dividends, interest and private transfers. Disposable income is calculated as gross market income plus social transfers and minus direct taxes and social contributions. The income reference year is the calendar year prior to the year of study – i.e. in the case of the 2011 survey, income relates to the 2010 calendar year (except for Ireland and the UK, where it is the 12 months prior to the date of interview). For more details on the EU-SILC survey, see Decancq et al. (2013).

The income of all household members is aggregated, and total household market or disposable income is equivalised for differences in household size and composition, using the so-called modified OECD scale (which assigns a value of 1 to the first adult in the household, 0.5 to additional members aged 14 and over, and 0.3 to children under 14). Equivalised income so calculated is then assigned to each household member.

In order to compute meaningful growth rates, income data employs the national currency. Two countries have joined the Eurozone in the years analysed here: Slovakia and Cyprus. In these cases, we used the conversion rates applied when those countries joined the Eurozone to convert income reported in the "old" currency into euros. Adjustments for inflation were made using the Harmonized Index of Consumer Prices series provided by Eurostat.

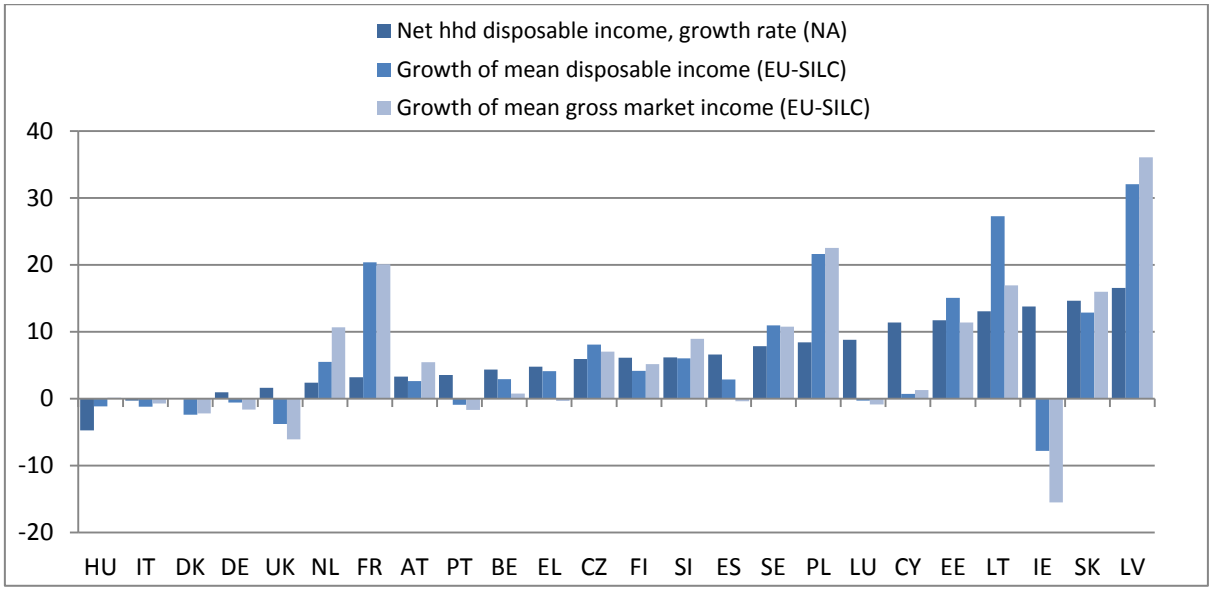
2.2.2. Results

Figures 2a and 2b show the rate of increase in average household disposable income estimated from EU-SILC, together with the rate of growth in net household disposable income from National Accounts (at constant prices). Looking at estimates obtained from EU-SILC, Latvia was clearly the country with the highest rate of growth in disposable household income before the crisis, with an increase of 32% in 2006–2008. The growth in disposable income was also relatively high in the two other Baltic countries, Lithuania and Estonia, together with Poland and France. At the other end of

the scale, there was a decline of 7.8% in Ireland, 3.8% in the UK and 2.4% in Denmark. An increase in household disposable income was recorded in all EU12 Member States, with the exception of Hungary, where it fell by 1.1%.

In the two years preceding the global crisis we see that in a number of countries the increase in household disposable income calculated from the micro-data and from National Accounts is fairly similar. There are, however, some countries where there is a relatively big difference between indicators calculated from the different sources. For example, in Latvia, Lithuania, Poland and France, disposable income calculated from the EU-SILC study shows a higher growth rate than that calculated from National Accounts. In the case of Ireland, average income estimated from the micro-data of the EU-SILC study fell, while the macro-data shows a significant increase in net household disposable income.

Figure 2a Comparison of household disposable income growth rates from National Accounts and EU-SILC (% increase at constant prices over the two years), 2006–2008



Source: Eurostat database, table nasa_nf_tr (net household disposable income).Growth in mean disposable income, growth in mean market income: own calculations based on EU-SILC UDB 2007, 2009.

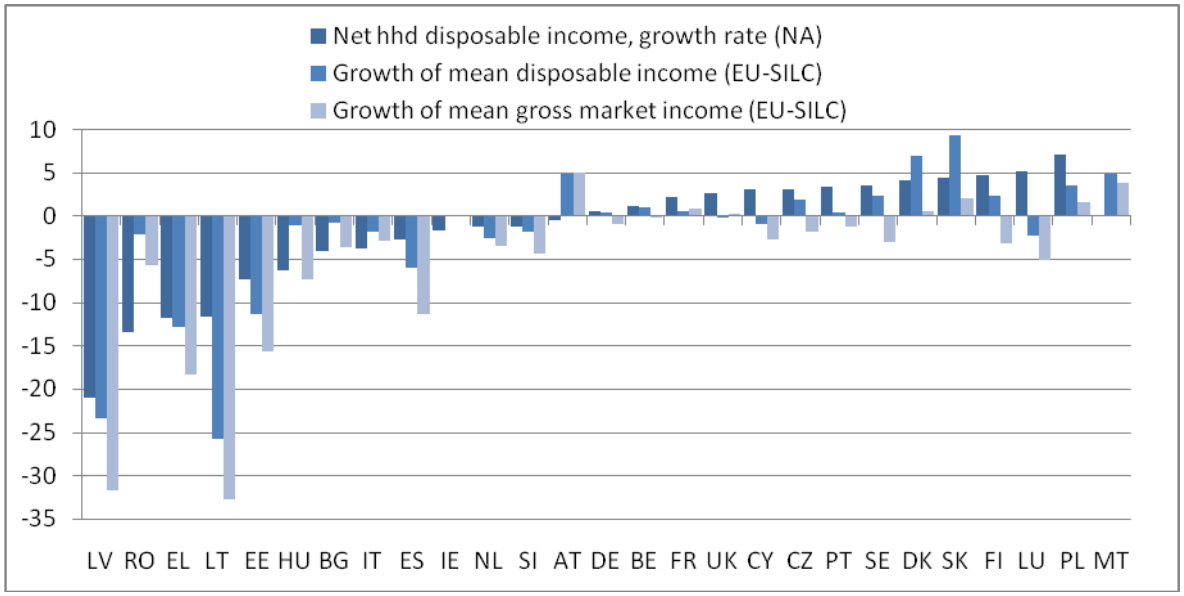
Looking at the estimates from the micro-data, significant differences can be detected in the ranking of countries after the crisis hit. In this period, growth rates were negligible or negative in most countries, and nearly all of them experienced a big decline compared to the preceding period. The Baltic countries and Greece appear now at the other end of the scale (Lithuania -25.8%, Latvia -23.4%, Greece -12.8% and Estonia -11.4%). Slovakia had relatively balanced growth rates in the two periods (12.8% before, and 9.3% after the beginning of the crisis). Poland experienced a big decline in the rate of increase relative to the earlier period, but it was still among the countries with the highest rate of growth. The most eye-catching exceptions are Austria and Denmark, where the growth rates in this period were higher than before the crisis.

During the second period, we again see that the micro estimates of disposable income growth were similar in sign to estimates obtained from the National Accounts, the main exceptions being Luxembourg and Austria. In Luxembourg, on the basis of the micro-data, disposable income declined, whereas on the basis of National Accounts figures it increased. In the case of Austria, the opposite occurred: the EU-SILC data shows an increase in disposable income, while in the macro-data a small decline is

visible in the indicator. The magnitudes of the growth rates, however, are frequently different. In Lithuania, for example, the micro-data shows a far bigger decline in household income than do the National Accounts. In the case of Slovakia and Denmark, the increase in disposable income is higher according to the estimate obtained from the micro-data than from the National Accounts.

The reasons behind the differences in estimates obtained from the micro-data and National Accounts may be manifold. We have already pointed out differences between the two approaches in terms of the income concepts and statistical methodology, which affect the measurement of income levels. When estimating rates of change at constant prices, the price index used to deflate income levels is also a potential source of variation. Here we used the Harmonized Index of Consumer Prices to adjust for inflation in the estimates from the EU-SILC data, while household disposable income from National Accounts was deflated by the price index of household final consumption expenditure (see Table A1 in the Annex).

Figure 2b Comparison of household disposable income growth rates from National Accounts and EU-SILC (% increase at constant prices over the two years), 2008–2010



Source: Eurostat database, table nasa_nf_tr (net household disposable income).Growth in mean disposable income, growth in mean market income: own calculations based on EU-SILC UDB 2009, 2011.

3. The distribution of economic growth

Here our aim is to provide a picture of the distribution of economic growth in EU countries. As already mentioned above, using income data from household surveys allows researchers to study the distribution of economic growth. Income growth patterns will be described in social groups defined on the basis of age, education level, household structure, work intensity, and position in the income distribution. The aim is to uncover patterns of economic growth by social background and to point out social groups that enjoy above-average growth rates or that suffer from below-average income growth. Thus our focus will be on income changes in relative and not absolute terms. It should also be remembered that our comparisons relate to changes in income and not in income levels themselves. Thus a group enjoying above-average growth rates might still have a below-average income level. Two time periods are investigated: a two-year period before the global crisis (2006–2008) and a two-year period after the beginning of the crisis (2008–2010). Relative growth rates of selected

subgroups are shown in the figures and all subgroup income growth rates are given in Tables A3–A7 of the Annex.

3.1. Differences among age groups

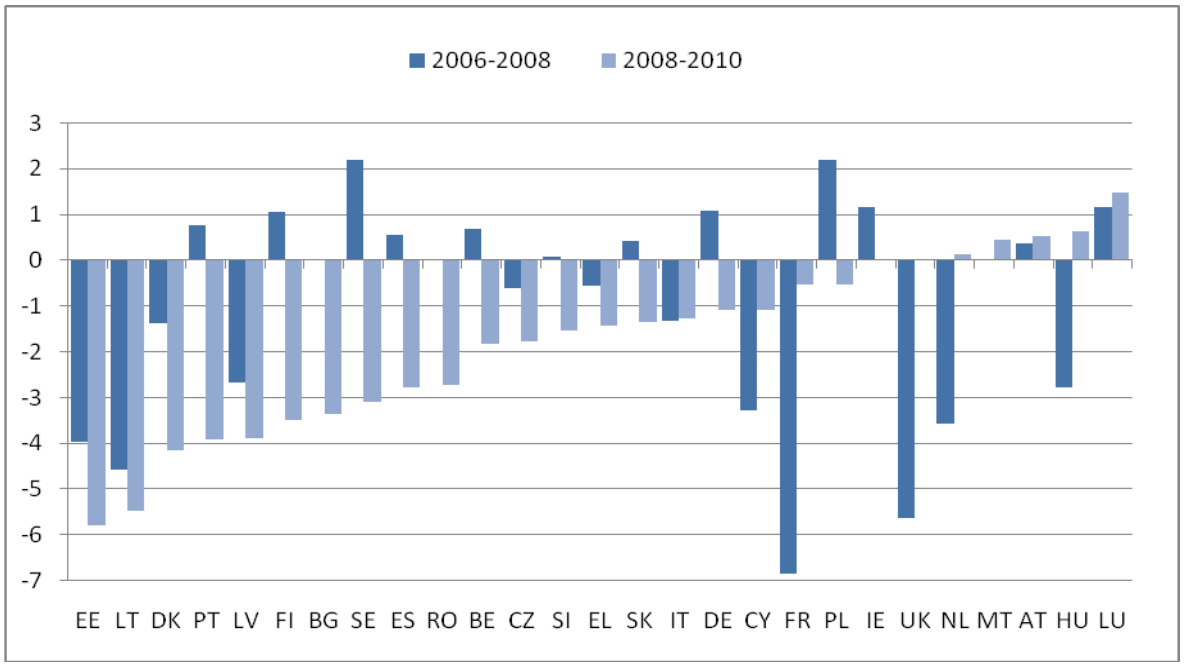
First, income growth rates were studied by age of the respondent. Five age groups were defined: children (0–17 years old), young adults (18–35), middle-age adults (36–49), a close-to-retirement age group (50–64) and the elderly (65 and above). To assess the relative situation of the different age groups, comparison was made with overall income growth rates.

In 2006–2008, children (i.e. below 18) enjoyed above-average income growth in approximately half of all EU countries. Children in Lithuania, for example, experienced a 34.1% increase in household income, compared to 27.3% for the population as a whole. Cyprus, the Czech Republic and Poland show a similar pattern. By contrast, income growth among children was low relative to average income growth in France, Ireland, Belgium and Greece. The change in the income situation of the Irish was the worst of the countries surveyed (-7.8%), and it is even worse if we study only those aged 0–17 (-11.3%).

Children enjoyed above-average income growth rates in both time periods in Estonia, Denmark, the Czech Republic, the UK, Netherlands and Slovenia. In Italy, Slovakia and Spain children had below-average income growth in both periods. In other Member States, the relative position of children changed after the beginning of the economic crisis. In France, for example, children had below-average income growth in the first period, whereas after the crisis hit they experienced an above-average income increase (2.3%, compared to 0.6% average). The opposite is true of Lithuania, Cyprus, Germany and Sweden, where children had above-average income growth in the first period, but below-average income growth in the second period.

Figure 3 shows relative income growth among young adults (18–35) in the two periods. Young adults had below-average income growth in the majority of EU Member States even during 2006–2008. Poland and Sweden were the countries where income change was most favourable for young adults compared to the national average, while the young adult endured income growth far below average in France and the United Kingdom. In 2008–2010, young adults suffered below-average income growth in almost all EU Member States, the main exceptions being Luxembourg, Hungary, Austria and Malta. The relative situation of the young worsened most in the Baltic States, Denmark, Finland and Portugal.

Figure 3 Percentage point difference between income growth of those aged 18–35 and average income growth in the population, 2006–2008 and 2008–2010



Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

If we look at the other end of the age distribution, we find that the growth in household income among those aged above 64 years was higher than the national average in most EU Member States both before and after the beginning of the crisis. In 2006–2008, relative income growth was most favourable for the elderly in France. The income situation of the elderly was relatively favourable in Ireland, where an above-average growth rate was observable only in this age group: the elderly had increasing disposable household income (5.2%), whereas the income of all other age groups declined. Portugal, Denmark, Hungary and Italy show a similar pattern. By contrast, income growth among the elderly was relatively low during this period in Poland and Latvia.

In 2008–2010, those aged over 64 suffered a more moderate decline in income than the national average in many countries. For example, in Bulgaria, the elderly even experienced a significant growth of 14.1% in disposable household income, while the income of those aged 50–64 increased only slightly (by 0.7%) and the other age groups experienced declines. Some exceptions, where the changes in the household income of the elderly were below the national average (even if only slightly), were Belgium, Denmark, France and Hungary.

3.2. Differences by educational background

Three categories of educational attainment were differentiated in the analysis: below upper-secondary education, upper-secondary education and tertiary education. The role of educational background in the growth of disposable household income differs greatly among the European countries.

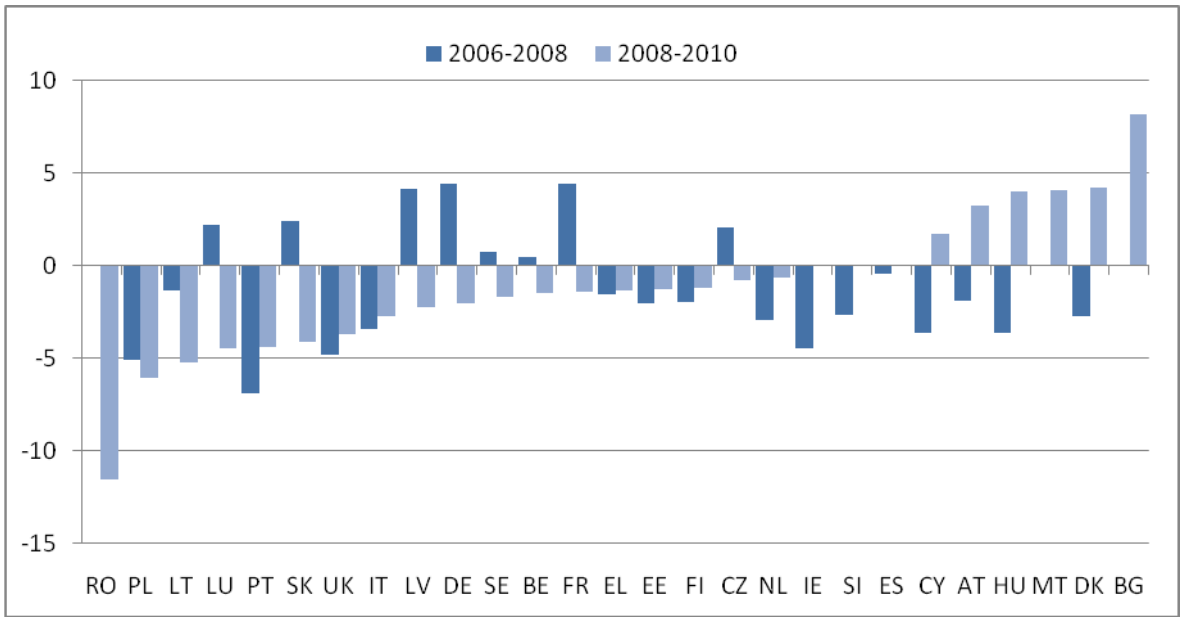
In 2006–2008, people with below upper-secondary education experienced above-average income growth in Slovakia, Slovenia, Cyprus, Ireland and the UK. By contrast, the changes in the household income of those with this level of education were far below the national average in other countries, e.g. France, Sweden, Poland and Latvia. In 2008–2010, the poorly educated had below-average income growth in

approximately half of the countries, with the most important differences in Bulgaria, Hungary, Belgium, Slovenia and the UK; above-average income growth was detected in Lithuania, Latvia, Luxembourg and Poland.

Generally, those who had upper-secondary education had below-average income growth in most Member States during 2006–2008. The biggest relative differences were detected in Latvia (26.2% compared to an average of 32.0%), Cyprus (-4.1% compared to an average of 0.7%), Portugal (-5.1% compared to an average of -0.9%) and the UK (-8.6% compared to -3.8%). Exceptions included Ireland, Finland and Belgium. In Ireland and Finland, those with upper-secondary education experienced a slightly higher increase in household income than the national average. In Belgium, the rate of income growth among those with upper-secondary education was significantly higher than average (5.1% compared to 2.9%). After the crisis hit, those with upper-secondary education had income growth close to the average in most of the countries, with the exception of Bulgaria, Denmark, Estonia, Greece, France and Portugal, where this group recorded below-average growth in income.

During 2006–2008, in most countries those with tertiary education experienced slower growth or bigger losses in their disposable household income than the national average (see Figure 4). However, in Germany, France, Belgium, Luxembourg and Sweden in the EU15 and in the Czech Republic, Latvia and Slovakia in the EU12, those concerned had above-average income growth.

Figure 4 Percentage point difference between income growth of those with tertiary education and average income growth of the population, 2006–2008 and 2008–2010



Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

In 2008–2010, we again see below-average income growth among those with tertiary education in the majority of countries. In Romania, this group suffered a 13.6% decline in income, while on average income declined by only 2.1%. Those with tertiary education also experienced income growth significantly below average in Poland, Lithuania, Luxembourg and Portugal. Those countries where income growth was higher than average among those with tertiary education were Bulgaria, Denmark, Malta, Hungary, Austria and Cyprus.

This pattern of below-average income growth among those with tertiary education might seem surprising, given the general impression that the better-educated could

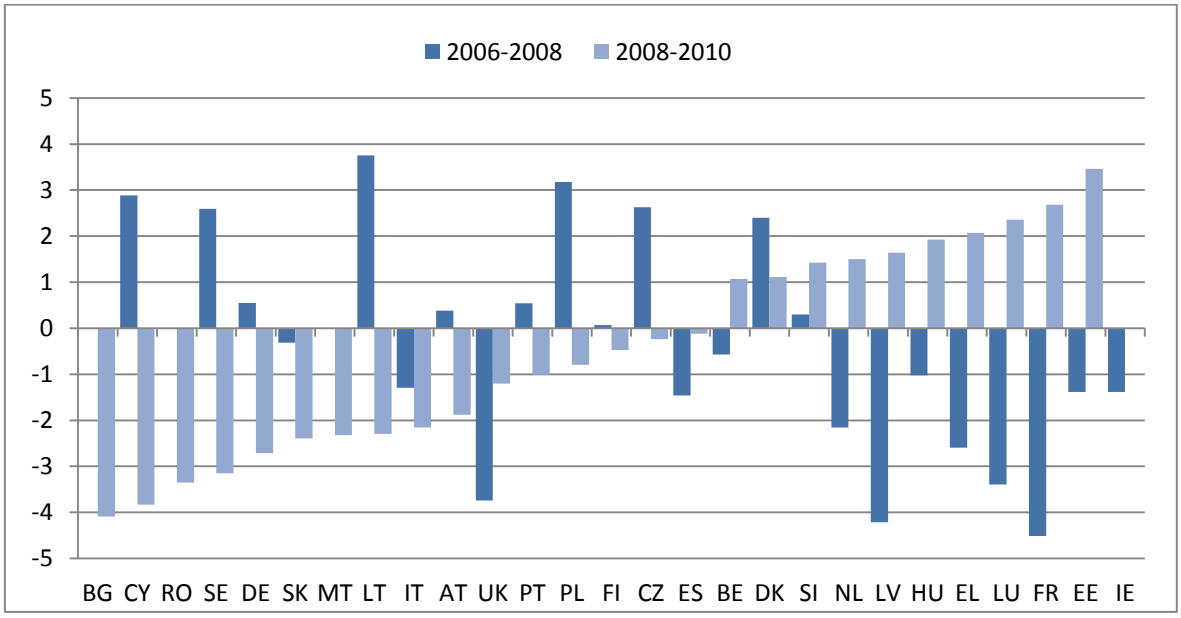
cope more easily during the crisis. Contrary to expectations, according to labour market data, the wage differentials between those with tertiary and those with upper-secondary education did not increase between 2006 and 2010 in the majority of European countries (OECD 2013). It has to be remembered, however, that our results show changes in household income for the total population, so including other sources of income (capital income, social transfers) as well as earnings, and also cover people who were not in employment.

3.3. Differences by household structure

Six categories of household structure were defined: adults without children; single adult with children; two or more adults with one or two children; two or more adults with three or more children; lone elderly; and households with an elderly household head and other adults.

Working-age adults living in childless households had below-average income growth both before and after the beginning of the crisis in most Member States. The relative income situation of single-parent households improved both before and after the crisis hit in Cyprus, the Czech Republic, Estonia and Poland. By contrast, individuals living in this type of household had below-average income growth in both time periods in Italy: a decline of 12.5% in the pre-crisis period (exceeding the national average decline of 1.2%) and a 9.2% decline in 2008–2010 (against a national average decline of 1.8%).

Figure 5 Percentage point difference between income growth of those living in households with 2 or more adults and 1 or 2 children and average income growth in the population, 2006–2008 and 2008–2010



Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

The most important difference between the two time periods is that the relative income growth of lone elderly households improved significantly in many countries. These households had below-average income growth in 2006–2008 but above-average income growth in 2008–2010 in two Nordic countries (Sweden and Finland), in three continental countries (the Netherlands, Germany and Austria) and in many Eastern European countries, such as Slovakia, Slovenia, Poland and Latvia. By contrast, these households lost their favourable position in Hungary and in Denmark.

3.4. Differences by work intensity

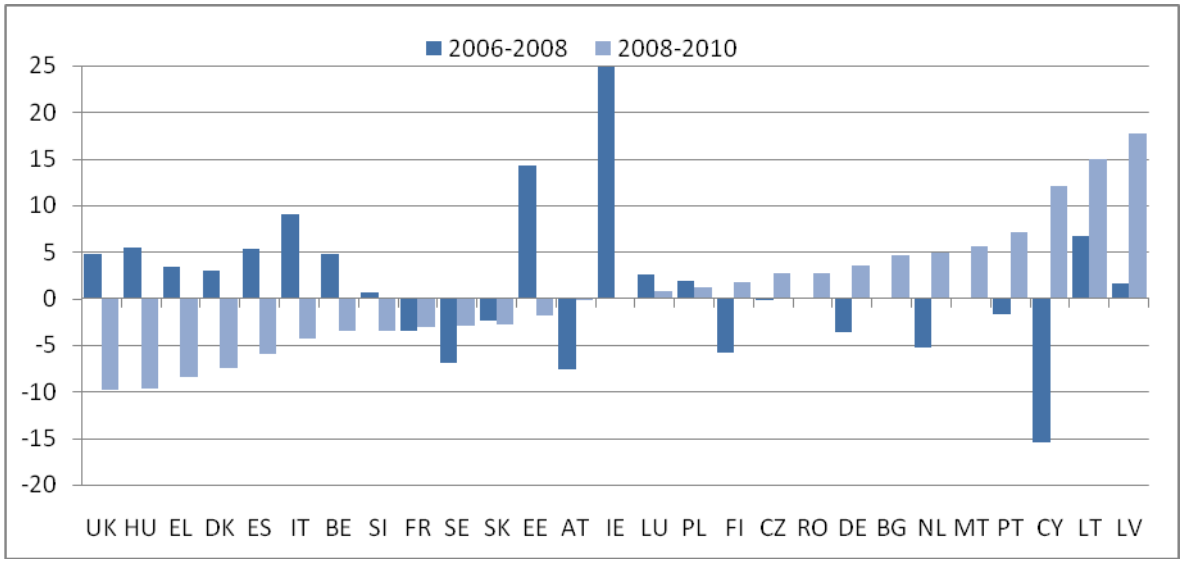
The work intensity of a household is measured here as the ratio obtained by taking the number of months in the year spent in employment by household members of working age (i.e. 16–64) – adjusted for part-time working (i.e. weighted by the number of hours worked per week relative to 35) – and dividing that by the number of months they would work if they were all employed full time (defined as working 35 or more hours a week) throughout the year. Households where everyone of working age is employed full time throughout the year have a work intensity of 1. Those where no one of working age is employed have a work intensity of 0; while those with only one partner of a couple in full-time employment have a work intensity of 0.5. Households are divided into four groups with respect to work intensity: very low (less than 0.2); low (between 0.2 and 0.5); middle (higher than 0.5 but lower than 1); and full work intensity.

There is also considerable variation in the changes in disposable household income by the work intensity of households. The two ends of the distribution show the most interesting differences between the two time periods examined.

As Figure 6 shows, in 2006–2008, those living in households with very low work intensity enjoyed above-average income growth in the majority of countries. The group of countries where households with very low work intensity were in a relatively unfavourable position before the crisis included most continental countries(such as Austria, Germany and France), the two Nordic countries of Finland and Sweden, plus Cyprus, Slovakia and Portugal. By contrast, the growth in the household income of such households was relatively high in Ireland, Estonia, Lithuania and Italy.

In the second period, the number of countries where this group had below-average income growth increased, resulting in a roughly equal number of countries with below-average and above-average income growth among those with very low work intensity. The relative position of such households changed in a positive way in Cyprus, the Netherlands, Germany, Finland and Portugal after the beginning of the crisis: e.g. in Cyprus, households with very low work intensity experienced an increase of 11.2% in their disposable household income, compared to a national average of -1%.

Figure 6 Percentage point difference between income growth of those living in households with very low work intensity and average income growth in the population, 2006–2008 and 2008–2010



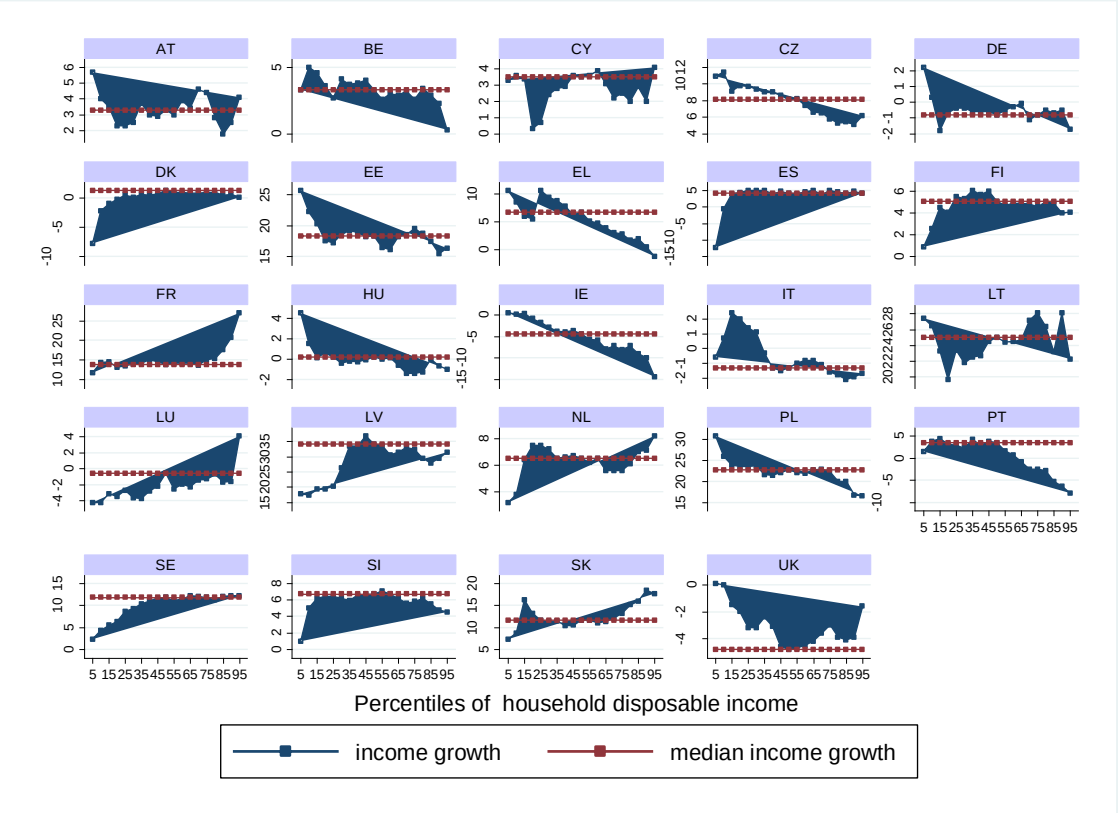
Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

Most commonly, households with full work intensity experienced below-average growth in household income in the first period. This changed in 2008–2010 and full work-intensity households endured below-average income growth in only a few cases after the crisis hit. Interesting exceptions are Luxembourg and Poland, where households with full work intensity had below-average income growth both before and after the start of the crisis.

3.5. Differences by income percentile

The focus here is on how household income changes at different points in the income distribution. It is important to note that the analysis is based on a comparison of cross-sectional data and so shows general changes in the shape of the income distribution, rather than changes in the income of specific individuals at different points of the distribution (which would require longitudinal data).

Figure 7a Income growth at different points of the income distribution (% increase at constant prices over the two years), 2006–2008



Source: own calculations based on EU-SILC UDB 2007, 2009.

Figure 7a shows the typical patterns observable in 2006–2008, comparing income growth at different percentiles of the distribution to growth at the median. In one group of countries, income growth is clearly lowest among the poor. In Spain, Slovenia and Denmark, income growth is lowest at the lower end of the income distribution, while income growth rates are higher and more or less similar at other percentiles. In the case of Spain, income at the 5th percentile declined sharply (-12%), while income in the middle of the distribution increased by 4–5%. In Slovenia, income increased by only 1% at the 5th percentile, while at other percentiles increases of 5–7% were measured. The picture is similar in Sweden, too: only the increase in the growth rate is less sharp before it reaches the mean. Latvia, Finland

and the Netherlands show a similar pattern, although income growth fluctuates more at higher percentiles.

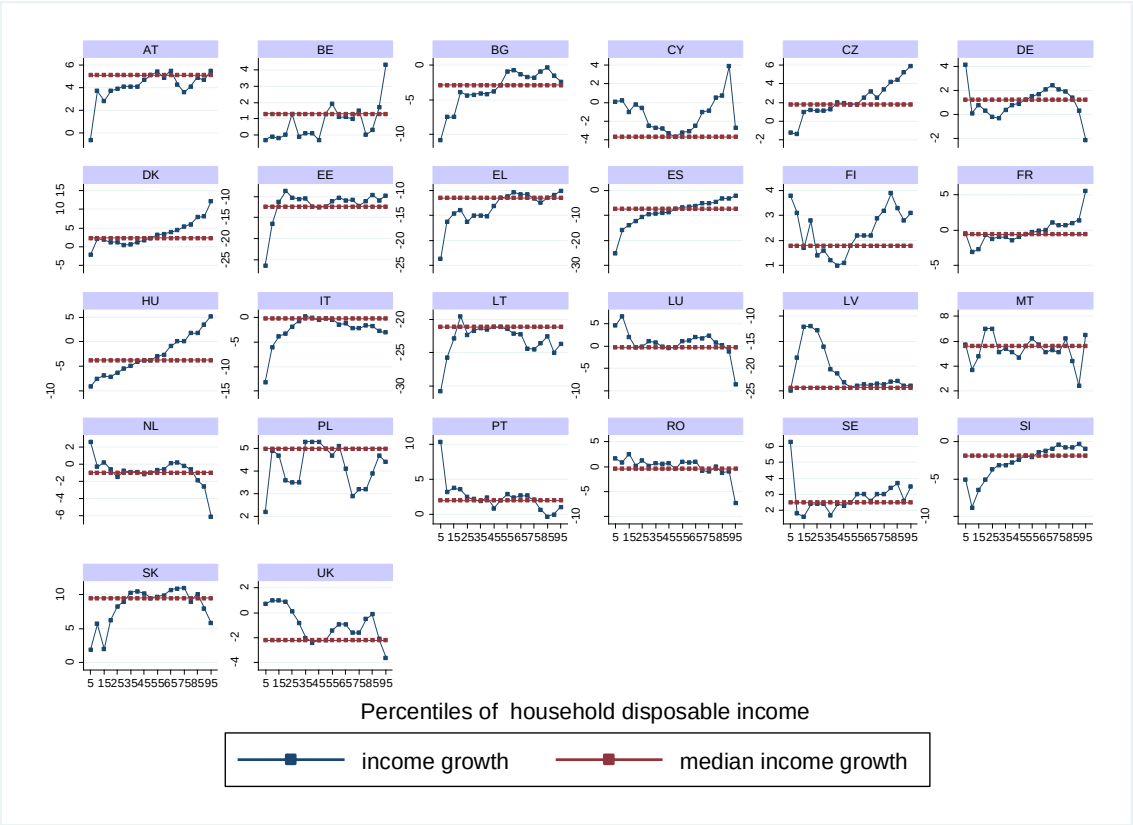
A second characteristic pattern can be observed in France, Slovakia and Luxembourg. The growth rates of household income there are more or less similar for almost the entire population, but growth rates increase sharply among those with the highest income. As a consequence, those with the highest income enjoy the most favourable changes.

In a third group of countries, household income increased most at the lower percentiles, and income increases are lowest in the upper part of the distribution. Greece, Ireland, the Czech Republic, Belgium and Poland belonged to this group in the period 2006–2008. Germany, Hungary and Estonia were similar, to the extent that income growth at lower percentiles was above the median level; but in those countries income increases were close to the median level at the highest percentiles of the distribution. Portugal had below-median income growth at the highest percentiles, but at low percentiles income increased at a level close to the median.

The United Kingdom showed a particular U-shaped pattern: income growth was lowest in the middle of the distribution, and was higher at both the lowest and the highest percentiles.

These typical patterns were also observable in the period 2008–2010 (Figure 7b). Countries where income growth was lowest at the bottom percentiles of the distribution and highest at the upper percentiles included the Czech Republic, Denmark, Spain, France, Hungary and Slovenia. In Estonia, Italy, Austria, Lithuania, Bulgaria, Belgium and Greece, income growth in the bottom percentiles was low, while other percentiles enjoyed similar income growth. Countries where income growth was highest at the low percentiles and declined in the higher percentiles were Germany, Luxembourg, the United Kingdom and the Netherlands. Portugal and Sweden also showed relatively high income growth at lower percentiles. A U-shaped pattern could be observed in Cyprus and Finland, meaning that income growth was higher at the tails of the distribution than in the middle.

Figure 7b Income growth at different points of the income distribution (% increase at constant prices over the two years), 2008–2010



Source: own calculations based on EU-SILC UDB 2009, 2011.

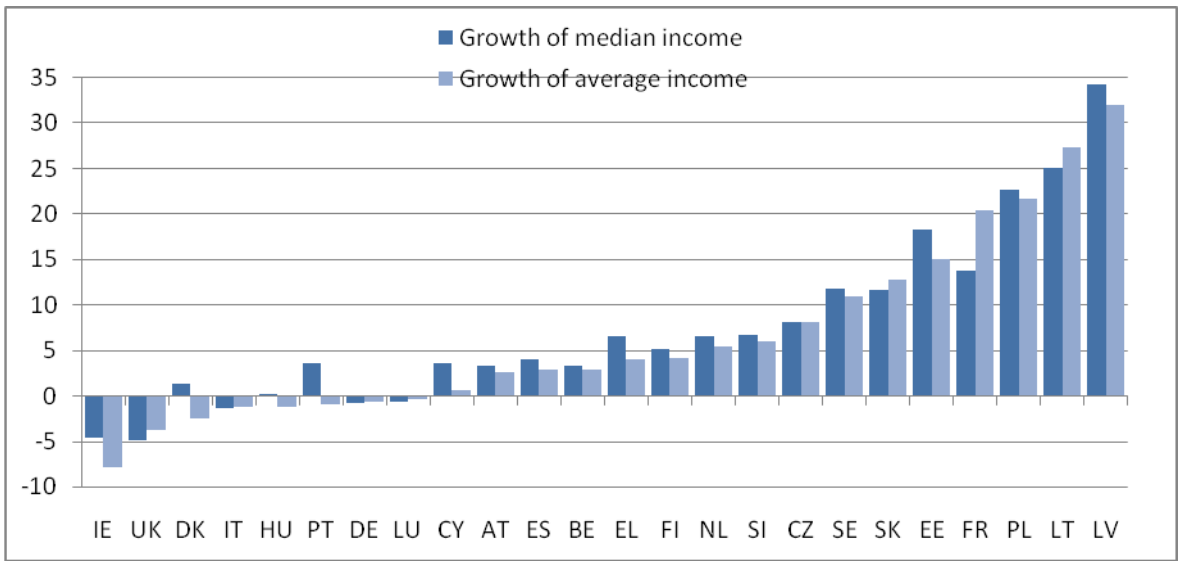
4. Indicators of economic progress: taking into account distributional changes

The report by Stiglitz et al. (2009) also proposes to take into account distributional changes when evaluating social progress. We compare the evolution of average household income with indicators of social progress that are sensitive to the distribution of income as well. One possibility is to track the evolution of median income (instead of the average), because that provides a better measure of what is happening to the "typical" individual or household than does average consumption (income or wealth). Another possibility is to use indicators of distributionally adjusted mean income as a measure of living standards in any given country. Such indices have been proposed by – among others – Amartya Sen and Anthony Atkinson (Jenkins 2012). These indices can be expressed as the product of real mean income and an index of income equality that lies between 0 and 1. In the case of Sen's index, this is 1 minus the Gini coefficient (which means that an increase in income inequality will tend to reduce the growth in the distributionally adjusted mean, while a reduction will increase it). In this section, first we compare the evolution of average and median household income in EU countries. Then, using the indicator defined above, the growth rates of distributionally adjusted mean income will be studied.

Figure 8a shows that the changes in average and median income were similar in EU countries in the years immediately preceding the economic crisis (though of course there are some differences). Median income rose by more than average income in several countries, including Latvia, Poland, Estonia, Greece, Cyprus and Portugal. This means that, in those countries, the distance between median and average income is

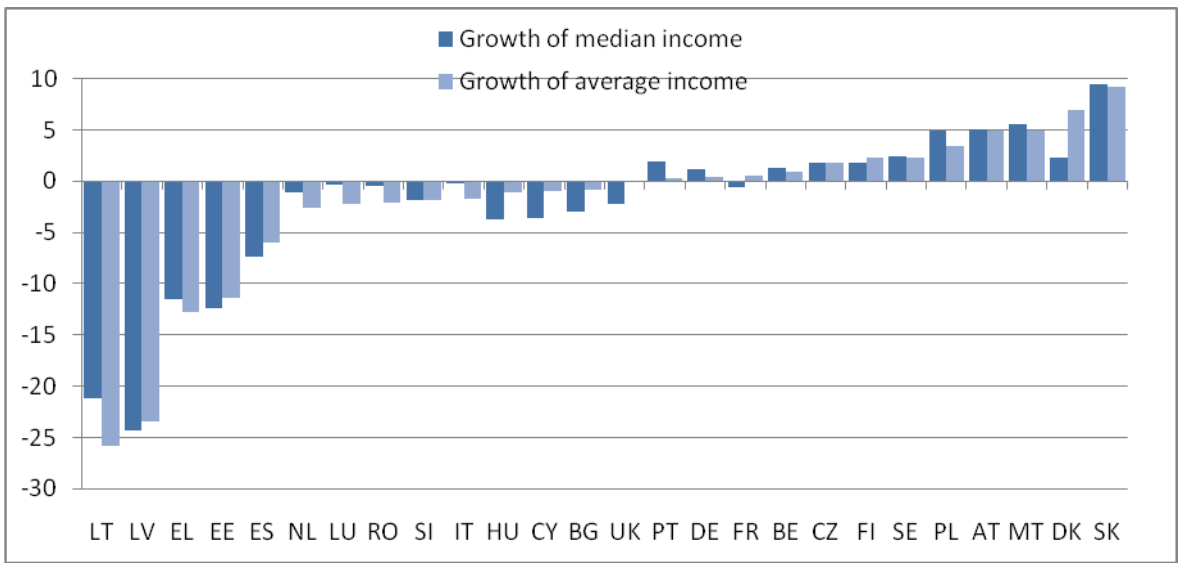
decreasing, which is a sign of declining inequality. The most important exception to this pattern is France, where average income increased much more rapidly than median income.

Figure 8a Growth in average and median income (% increase at constant prices over the two years), 2006–2008



Source: own calculations based on EU-SILC UDB 2007, 2009.

Figure 8b Growth in average and median income (% increase at constant prices over the two years), 2008–2010

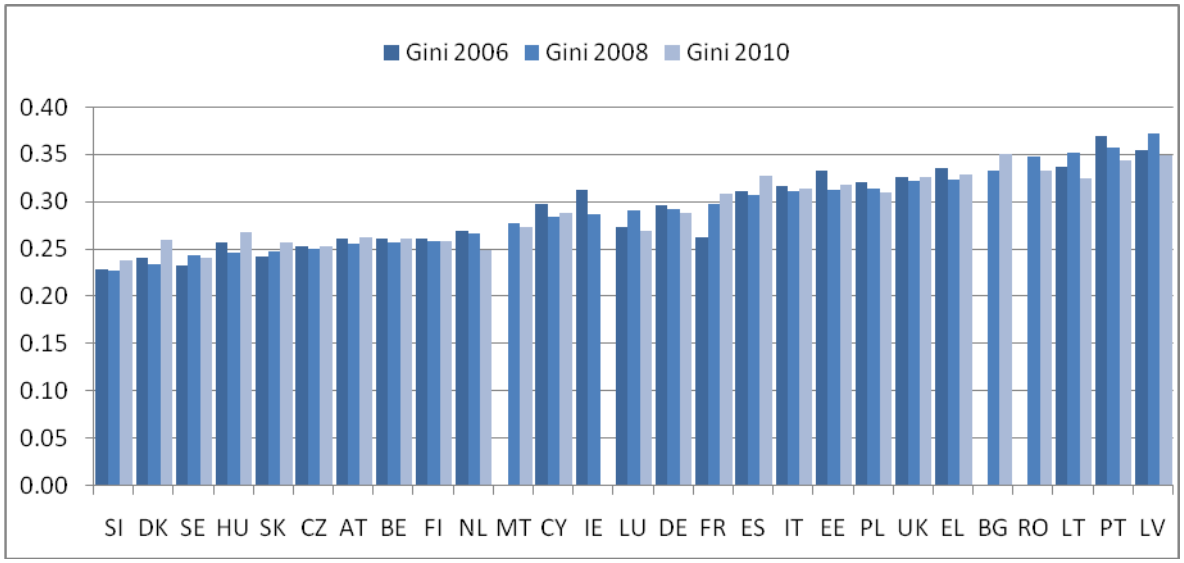


Source: own calculations based on EU-SILC UDB 2009, 2011.

In the period 2008–2010, median income declined by more than average income in Hungary, Cyprus, Bulgaria and the UK; in Denmark it increased by less than average income (see Figure 8b). In these cases, the distance between median and average income rose, which is a sign of increasing inequality. In Lithuania, median income declined by less than average income; in Portugal and Poland, median income increased by more than average income.

Before describing the trends in a distributionally adjusted measure of economic progress, the Sen-index, it is worth taking a closer look at the evolution of income inequality in EU countries (Figure 9). Between 2006 and 2008, income inequality, as measured by the Gini index, declined in Ireland (-2.5 points) and Estonia (-2 points) and, to a lesser extent, in Cyprus, Portugal and Greece (between -1 and -1.5 points). Increases in income inequality were observed most importantly in France (+3.5 points), and also in Lithuania, Latvia and Luxembourg (between 1.5 and 2 points). Between 2008 and 2010, income inequality declined in Lithuania (-2.8 points), Latvia and Luxembourg (-2.2 points), while inequality increased most in Denmark (2.6 points), Hungary (2.2 points) and Spain (2 points).

Figure 9 Inequality of household disposable income (Gini indices), 2006, 2008 and 2010

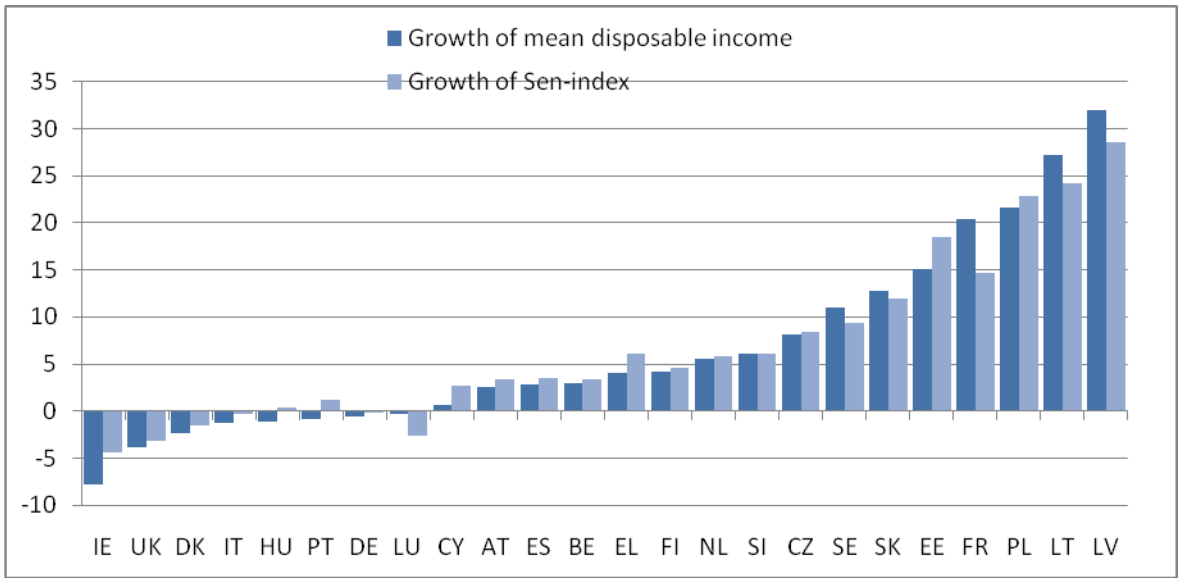


Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

Figures 10a and 10b show the evolution of Sen's distributionally adjusted income indicator,1 together with the growth rates of average household income. The largest discrepancies between the two series can be seen in countries where income inequality changed during the given period. In 2006–2008, in France, Latvia and Lithuania the important rise in income inequality led to lower growth in the Sen-index, compared to the growth in average income. In countries with declining inequality, the Sen-index increased more than average income (e.g. Estonia) or declined less than average income (e.g. Ireland). In the period 2008–2010, the Sen-index increased less than average income in Denmark and Slovakia, and declined by more than average income in Bulgaria, Hungary and Spain. The country where the rise in the Sen-index most exceeded that of average income was Portugal, while in Lithuania and Latvia the Sen-index declined by less than average income.

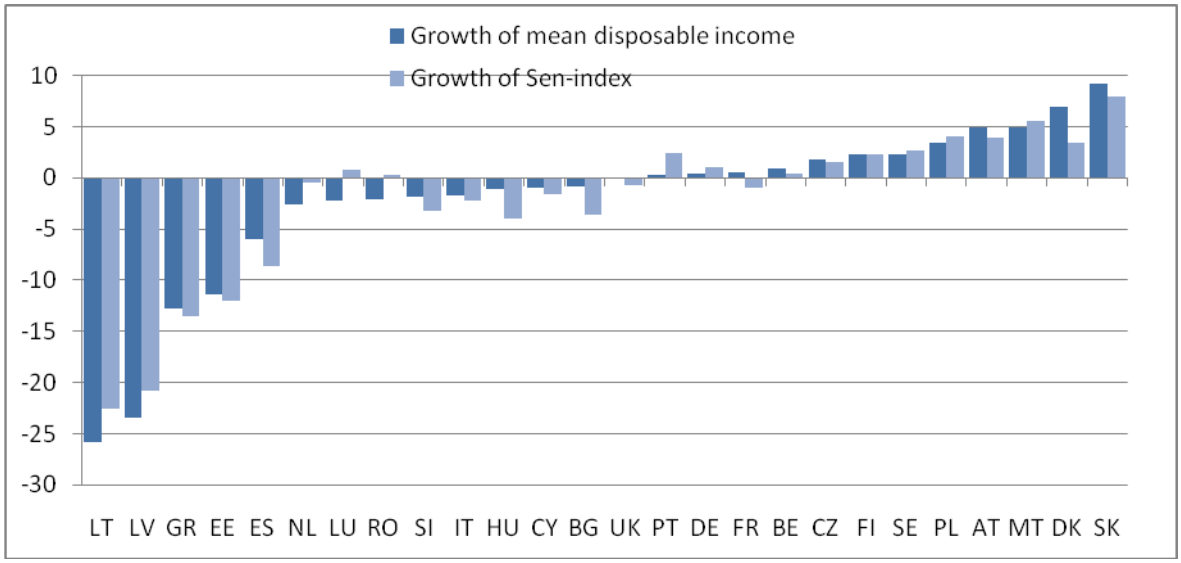
[1]Sen indicator of real national income=Mean*(1-Gini) (Jenkins 2012).

Figure 10a Comparison of distributionally adjusted growth indicator and growth in average income (% increase at constant prices over the two years), 2006–2008



Source: own calculations based on EU-SILC UDB 2007, 2009.

Figure 10b Comparison of distributionally adjusted growth indicator and growth in average income (% increase at constant prices over the two years), 2008–2010



Source: own calculations based on EU-SILC UDB 2009, 2011.

Concluding remarks

This research note has described growth in household income based on micro-data and distributional patterns of income change in the periods 2006–2008 and 2008–2010. The Stiglitz report (Stiglitz et al. 2009) recommended the use of indicators based on the household perspective, taking account of the distribution of income when measuring living standards. These considerations were implemented here by using micro-data from the EU-SILC study.

The research note first compared estimates of household disposable income growth obtained from household micro-data with macroeconomic estimates obtained from National Accounts. Income growth rates from these two sources show important differences, which are related to differences in income concepts and methodological differences between the two approaches.

Next, the research note explored distributional patterns of income change in EU countries. Differences by age group, educational level, household structure, work intensity and income position were studied. The results showed that, during both periods under study, young adults endured below-average income growth in the majority of EU Member States. Interestingly, those with tertiary education experienced below-average growth in their disposable household income in the majority of countries. This result is less surprising if we consider that the wages of people with tertiary education did not generally increase in this period relative to the wages of those with upper-secondary education; factors outside the labour market (e.g. government policy on social transfers and taxes) also contributed to this outcome.

Those living in households with very low work intensity enjoyed above-average income growth in the majority of countries in 2006–2008, but the number of such countries declined in the following period.

Comparing the two periods under study, there is an increase in the number of countries where income growth is lower than average for households at the bottom end of the income scale over the crisis period, and higher than average at the upper end.

The research note also examined indicators of income growth which take account of changes in the distribution of income. The Sen-index of distributionally adjusted income shows a significantly different picture in some countries. In 2006–2008, for example, there was a marked increase in income inequality in France, Latvia and Lithuania, which means a much lower rate of growth in adjusted income than in unadjusted.

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Annex

Table A1 Price indices used for calculating growth rates at constant prices (% increase over the two years), 2006–2008 and 2008–2010

	2006–2008			2008–2010		
	Inflation rate	**Price index Final Consumption Expenditure**	**Price index Household Final Consumption Expenditure**	**Inflation rate**	**Price index Final Consumption Expenditure**	**Price index Household Final Consumption Expenditure**
AT	5.5	4.8	4.8	2.1	2.7	2.2
BE	6.4	6.4	6.2	2.3	2.3	1.3
BG	20.5	18.3	16.8	5.6	4.0	4.0
CY	6.7	7.9	7.8	2.8	3.2	2.8
CZ	9.5	7.8	7.8	1.8	1.1	0.6
DE	5.2	2.8	3.1	1.4	2.3	2.0
DK	5.4	5.0	3.9	3.3	5.3	4.2
EE	18.0	19.4	16.3	2.9	1.1	2.0
EL	7.3	8.6	7.4	6.1	3.9	4.7
ES	7.0	6.9	6.9	1.8	0.8	0.8
FI	5.6	6.9	5.8	3.3	3.9	3.3
FR	4.9	4.7	5.1	1.8	1.1	0.5
HU	14.4	12.8	12.6	8.9	5.9	8.0
IE	6.1	5.7	4.5	-3.3	-7.7	-9.0
IT	5.6	5.2	5.4	2.4	1.9	1.4
LT	17.5	20.6	17.4	5.5	3.0	5.9
LU	6.9	5.9	5.7	2.8	3.8	2.5
LV	26.9	34.5	28.1	2.1	-2.5	1.3
MT	5.4	5.9	5.5	3.8	6.0	5.8
NL	3.8	4.0	2.9	1.9	2.0	1.0
PO	6.9	7.4	6.8	6.8	5.5	5.1
PT	5.2	5.2	5.7	0.5	0.0	-0.9
RO	13.2	19.9	15.3	12.0	9.1	11.7
SE	5.1	5.5	4.5	3.8	3.0	3.6
SI	9.5	9.5	9.8	3.0	2.8	2.1
SK	5.9	7.1	7.2	1.6	1.2	1.1
UK	6.0	6.3	5.9	5.6	5.8	6.0

Source: Eurostat database: table tec00118 (inflation) and table nama_fcs_p (other columns).

Table A2 Growth rate of average household disposable income, average market income and median disposable income (% increase at constant prices over the two years), 2006–2008 and 2008–2010

	Growth rate of average disposable income		Growth rate of average market income		Growth rate of median disposable income	
	2006–2008	2008–2010	2006–2008	2008–2010	2006–2008	2008–2010
AT	2.6	4.9	5.4	5.0	3.3	5.1
BE	2.9	1.0	0.7	-0.1	3.3	1.3
BG		-0.8		-3.7		-2.9
CY	0.7	-1.0	1.3	-2.8	3.5	-3.7
CZ	8.1	1.8	7.0	-1.9	8.1	1.8
DE	-0.6	0.4	-1.7	-0.9	-0.8	1.2
DK	-2.4	7.0	-2.2	0.6	1.3	2.3
EE	15.1	-11.4	11.4	-15.7	18.3	-12.4
EL	4.1	-12.8	-0.4	-18.3	6.6	-11.5
ES	2.9	-6.0	-0.4	-11.4	4.1	-7.3
FI	4.2	2.3	5.2	-3.2	5.1	1.8
FR	20.4	0.6	20.1	0.8	13.8	-0.6
HU	-1.1	-1.1	0.1	-7.4	0.2	-3.7
IE	-7.8		-15.5		-4.5	
IT	-1.2	-1.8	-0.7	-2.8	-1.3	-0.2
LT	27.3	-25.8	16.9	-32.8	25.0	-21.1
LU	-0.3	-2.2	-0.9	-5.1	-0.6	-0.3
LV	32.0	-23.4	36.1	-31.8	34.2	-24.3
MT		4.9		3.8		5.6
NL	5.5	-2.6	10.7	-3.5	6.5	-1.0
PL	21.6	3.5	22.5	1.6	22.7	5.0
PT	-0.9	0.3	-1.7	-1.3	3.5	2.0
RO		-2.1		-5.7		-0.4
SE	11.0	2.3	10.8	-3.0	11.8	2.5
SI	6.0	-1.8	9.0	-4.3	6.7	-1.9
SK	12.8	9.3	16.0	2.0	11.6	9.5
UK	-3.8	0.0	-6.1	0.2	-4.8	-2.2

Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

Table A3 Growth in household disposable income by age group (% increase at constant prices over the two years), 2006–2008 and 2008–2010

	2006–2008						2008–2010					
	0–17 years	18–35 years	36–49 years	50–64 years	65+ years	Total pop.	0–17 years	18–35 years	36–49 years	50–64 years	65+ years	Total pop.
AT	3.5	3.0	3.0	2.4	0.3	2.6	3.7	5.4	2.9	5.6	6.2	4.9
BE	0.0	3.6	3.6	3.2	4.3	2.9	2.2	-0.8	-1.2	5.0	0.5	1.0
BG							-6.4	-4.2	-2.5	0.7	14.1	-0.8
CY	4.0	-2.6	1.3	-0.1	6.2	0.7	-5.6	-2.0	-2.1	2.8	7.1	-1.0
CZ	11.2	7.5	9.3	8.3	5.7	8.1	2.8	0.1	1.8	0.2	7.9	1.8
DE	1.2	0.5	0.4	-4.3	-0.3	-0.6	-2.2	-0.7	-0.1	-0.2	4.8	0.4
DK	-1.6	-3.8	-2.8	-3.4	2.6	-2.4	9.3	2.8	10.2	6.8	4.6	7.0
EE	15.9	11.1	15.0	19.1	18.5	15.1	-7.1	-17.2	-8.4	-14.7	-2.2	-11.4
EL	2.6	3.5	2.1	6.7	5.2	4.1	-10.9	-14.2	-11.5	-14.7	-11.3	-12.8
ES	1.7	3.4	2.9	0.9	6.1	2.9	-6.9	-8.7	-7.6	-3.7	0.0	-6.0
FI	5.0	5.2	2.9	2.8	6.6	4.2	1.5	-1.2	4.2	2.5	6.7	2.3
FR	14.4	13.5	16.5	22.0	36.5	20.4	2.3	0.0	2.0	-1.8	0.2	0.6
HU	-1.7	-3.9	-1.6	-1.5	3.3	-1.1	-0.5	-0.5	0.9	-3.4	-2.4	-1.1
IE	-11.3	-6.6	-10.3	-8.1	5.2	-7.8						
IT	-2.9	-2.5	-3.0	-0.9	2.8	-1.2	-3.4	-3.0	-3.3	-0.6	0.8	-1.8
LT	34.1	22.7	26.8	24.4	32.1	27.3	-26.4	-31.3	-27.1	-21.8	-16.8	-25.8
LU	-1.1	0.9	1.0	-3.6	0.6	-0.3	-1.4	-0.7	-3.4	-8.1	5.6	-2.2
LV	31.2	29.4	30.3	45.0	22.2	32.0	-20.7	-27.3	-24.2	-28.7	-7.2	-23.4
MT							0.6	5.4	3.4	7.8	11.1	4.9
NL	7.3	1.9	6.5	3.7	9.8	5.5	-2.6	-2.5	-2.0	-4.1	-1.2	-2.6
PL	26.5	23.8	26.6	17.1	10.8	21.6	3.4	2.9	1.4	4.3	6.5	3.5
PT	-0.5	-0.1	-1.4	-4.8	3.3	-0.9	-1.5	-3.6	1.6	1.8	4.4	0.3
RO							-0.9	-4.8	-5.3	-3.1	8.3	-2.1
SE	12.6	13.2	11.7	8.0	9.8	11.0	0.8	-0.8	1.9	3.0	9.0	2.3
SI	7.3	6.1	7.1	4.5	5.5	6.0	-1.5	-3.4	-1.4	-1.8	-0.8	-1.8
SK	11.4	13.3	13.4	13.0	12.3	12.8	8.0	7.9	7.0	7.8	20.1	9.3
UK	-3.2	-9.4	-3.6	0.3	-0.1	-3.8	1.0	0.0	-1.8	-2.1	5.7	0.0

Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

Table A4 Growth in household disposable income by education level (% increase at constant prices over the two years), 2006–2008 and 2008–2010

	2006–2008				2008–2010			
	less than upper secondary	upper secondary	tertiary	Total population	less than upper secondary	upper secondary	tertiary	Total population
AT	2.5	2.8	0.7	2.6	2.9	4.4	8.1	4.9
BE	2.6	5.1	3.4	2.9	-2.8	-1.1	-0.5	1.0
BG					-7.2	-3.5	7.4	-0.8
CY	5.6	-4.1	-2.9	0.7	-2.5	1.4	0.7	-1.0
CZ	5.4	6.5	10.2	8.1	1.3	0.1	1.1	1.8
DE	-3.4	-1.9	3.8	-0.6	-0.1	1.8	-1.6	0.4
DK	-2.4	-3.4	-5.1	-2.4	4.6	3.5	11.2	7.0
EE	14.6	13.0	13.1	15.1	-11.2	-14.0	-12.7	-11.4
EL	1.6	0.6	2.6	4.1	-12.3	-15.9	-14.1	-12.8
ES	1.1	3.3	2.5	2.9	-5.9	-6.8	-5.9	-6.0
FI	3.3	5.1	2.2	4.2	2.9	0.9	1.1	2.3
FR	16.3	20.8	24.8	20.4	-0.8	-2.9	-0.8	0.6
HU	-0.5	-1.4	-4.8	-1.1	-7.0	-1.8	2.9	-1.1
IE	-4.0	-6.9	-12.2	-7.8				
IT	-1.1	-1.5	-4.6	-1.2	-1.2	-2.7	-4.5	-1.8
LT	27.3	25.1	25.9	27.3	-20.5	-26.4	-31.0	-25.8
LU	-2.9	-0.7	1.9	-0.3	-0.4	-0.9	-6.7	-2.2
LV	24.6	26.2	36.2	32.0	-19.7	-25.7	-25.6	-23.4
MT					4.9	3.3	9.0	4.9
NL	5.4	4.8	2.6	5.5	-3.8	-3.3	-3.2	-2.6
PL	16.5	20.4	16.6	21.6	4.8	3.4	-2.6	3.5
PT	-0.8	-5.1	-7.8	-0.9	1.3	-6.5	-4.0	0.3
RO					-0.9	-5.0	-13.6	-2.1
SE	3.3	8.5	11.7	11.0	3.0	2.3	0.6	2.3
SI	6.4	5.4	3.4	6.0	-4.8	-3.5	-1.8	-1.8
SK	14.2	10.4	15.3	12.8	10.5	10.1	5.2	9.3
UK	2.9	-8.6	-8.6	-3.8	-2.8	0.6	-3.7	0.0

Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

Table A5 Growth in household disposable income by household structure (% increase at constant prices over the two years), 2006–2008

	1 or more adult, no child	single adult, children	2+ adults, 1 or 2 children	2+ adults, 3+ children	elderly hhd head, one adult	elderly hhd, more adults	Total population
AT	2.3	4.9	3.0	-0.8	-3.1	3.5	2.6
BE	4.3	1.2	2.3	-2.2	4.1	4.8	2.9
BG							
CY	-2.2	5.7	3.6	1.4	10.2	-4.4	0.7
CZ	6.3	19.1	10.7	9.4	3.6	10.2	8.1
DE	-1.2	-1.9	0.0	2.8	-4.5	0.3	-0.6
DK	-4.4	-1.6	0.0	-5.8	2.3	1.0	-2.4
EE	14.8	32.3	13.7	8.6	15.3	23.3	15.1
EL	4.1	18.5	1.5	2.2	7.2	13.9	4.1
ES	3.0	19.3	1.4	3.6	5.9	7.8	2.9
FI	3.2	19.4	4.2	2.2	2.5	10.0	4.2
FR	20.0	6.5	15.9	15.2	29.4	41.7	20.4
HU	-2.8	-0.6	-2.2	-2.6	2.4	4.1	-1.1
IE	-6.4	-4.7	-9.2	-14.2	5.5	5.9	-7.8
IT	-1.2	-12.5	-2.5	-1.9	0.1	5.5	-1.2
LT	20.7	24.5	31.0	69.4	44.2	22.4	27.3
LU	0.9	-11.3	-3.7	10.0	1.0	0.6	-0.3
LV	37.0	16.8	27.8	54.0	24.3	21.5	32.0
MT							
NL	3.5	18.6	3.3	12.2	3.3	16.1	5.5
PL	20.0	32.0	24.8	21.5	7.4	10.4	21.6
PT	-0.7	-11.7	-0.4	-3.2	8.3	-3.3	-0.9
RO							
SE	8.9	8.3	13.6	9.4	6.9	10.7	11.0
SI	5.7	6.2	6.3	10.5	1.4	4.9	6.0
SK	12.6	9.6	12.5	11.6	7.3	16.0	12.8
UK	-2.8	3.1	-7.5	0.7	2.3	-1.1	-3.8

Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

Table A6 Growth in household disposable income by household structure (% increase at constant prices over the two years), 2008–2010

	1 or more adult, no child	single adult, children	2+ adults, 1 or 2 children	2+ adults, 3+ children	elderly hhd head, one adult	elderly hhd, more adults	Total population
AT	5.0	5.2	3.0	9.6	6.2	5.9	4.9
BE	0.5	1.5	2.0	1.4	2.9	-1.1	1.0
BG	1.2	-3.5	-4.9	-24.0	12.9	20.7	-0.8
CY	2.2	7.6	-4.8	-1.9	10.6	16.9	-1.0
CZ	0.3	3.0	1.6	9.7	8.2	6.8	1.8
DE	0.5	0.5	-2.3	-2.6	7.6	4.9	0.4
DK	6.5	1.4	8.1	15.2	5.0	3.8	7.0
EE	-17.0	-6.1	-7.9	-5.6	6.6	-2.7	-11.4
EL	-13.4	-33.7	-10.7	-13.7	-12.2	-14.0	-12.8
ES	-6.8	-16.3	-6.1	-3.1	2.5	1.8	-6.0
FI	2.1	-3.1	1.8	2.9	7.6	4.0	2.3
FR	-1.6	4.6	3.2	-0.4	4.4	-2.1	0.6
HU	-2.0	8.3	0.8	-9.5	-3.4	-1.2	-1.1
IE							
IT	-1.7	-9.2	-3.9	3.2	5.3	1.3	-1.8
LT	-26.8	-12.8	-28.1	-29.9	-14.7	-6.5	-25.8
LU	-6.6	6.5	0.1	-0.5	4.0	8.6	-2.2
LV	-28.8	-15.5	-21.8	-16.5	12.1	2.7	-23.4
MT	8.5	21.1	2.6	-0.2	10.8	18.8	4.9
NL	-3.4	-8.2	-1.1	-3.5	1.8	-3.6	-2.6
PL	3.0	9.1	2.7	8.2	4.6	2.6	3.5
PT	0.2	20.1	-0.7	-7.7	4.1	2.5	0.3
RO	-3.5	-12.7	-5.4	1.3	6.5	13.5	-2.1
SE	2.7	-1.4	-0.9	5.0	4.2	9.7	2.3
SI	-2.7	-7.3	-0.4	-0.9	3.5	3.5	-1.8
SK	7.6	37.5	6.9	8.9	41.2	12.5	9.3
UK	-1.6	-5.2	-1.2	10.0	0.4	8.7	0.0

Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.

Table A7 Growth in household disposable income by work-intensity group (% increase at constant prices over the two years), 2006–2008 and 2008–2010

	2006–2008					2008–2010				
	very low WI	low WI	middle WI	full WI	Total popul.	very low WI	low WI	middle WI	full WI	Total popul.
AT	-5.0	7.1	3.9	1.1	2.6	4.7	3.4	5.9	7.7	4.9
BE	7.7	0.9	3.4	1.4	2.9	-2.5	3.4	-0.2	5.4	1.0
BG						3.9	6.0	-2.3	1.1	-0.8
CY	-14.7	2.7	0.7	0.6	0.7	11.2	-3.6	-0.4	-1.8	-1.0
CZ	8.0	9.2	6.6	5.0	8.1	4.5	-0.4	2.9	4.9	1.8
DE	-4.2	2.6	-2.0	0.1	-0.6	3.9	-0.6	-1.0	-3.5	0.4
DK	0.6	0.2	-4.7	-3.8	-2.4	-0.5	7.1	11.3	10.2	7.0
EE	29.4	4.6	15.1	19.5	15.1	-13.2	-7.3	-6.4	-6.4	-11.4
EL	7.6	2.1	5.0	0.9	4.1	-21.3	-7.7	-12.0	-4.5	-12.8
ES	8.2	5.4	-0.1	4.0	2.9	-11.9	-0.4	2.6	-4.9	-6.0
FI	-1.6	6.6	3.2	5.8	4.2	4.1	3.1	6.9	2.2	2.3
FR	16.9	23.1	15.4	14.0	20.4	-2.5	-0.5	3.0	1.8	0.6
HU	4.4	3.0	-3.8	-1.9	-1.1	-10.8	-1.5	1.0	4.8	-1.1
IE	17.1	-5.9	-3.6	-6.5	-7.8					
IT	7.8	-1.8	-3.4	-6.2	-1.2	-6.0	-0.2	-0.8	0.9	-1.8
LT	33.9	18.7	33.5	24.3	27.3	-10.9	-18.5	-25.9	-21.8	-25.8
LU	2.2	1.4	1.2	-3.0	-0.3	-1.3	-6.3	-2.2	-4.2	-2.2
LV	33.6	33.0	42.2	31.5	32.0	-5.7	-17.5	-21.4	-16.6	-23.4
MT						10.6	-1.5	7.3	2.0	4.9
NL	0.3	5.2	5.6	0.3	5.5	2.3	0.6	-4.7	5.1	-2.6
PL	23.6	26.5	17.6	19.2	21.6	4.7	2.7	3.6	2.6	3.5
PT	-2.5	-7.1	-6.8	6.2	-0.9	7.4	4.1	2.6	-3.1	0.3
RO						0.7	-0.9	-8.1	-2.2	-2.1
SE	4.0	11.9	15.9	13.7	11.0	-0.6	0.2	-0.3	3.4	2.3
SI	6.7	4.6	5.8	4.2	6.0	-5.3	-1.4	-2.5	2.1	-1.8
SK	10.5	8.5	13.3	13.3	12.8	6.4	9.9	9.7	14.5	9.3
UK	1.0	-0.5	-0.6	-3.0	-3.8	-9.8	-1.8	-1.3	2.4	0.0

Source: own calculations based on EU-SILC UDB 2007, 2009, 2011.
Note: very low work intensity (WI): WI<0.2; low WI: 0.2<=WI<=0.5; middle level WI: 0.5<WI<1; full WI: WI=1.