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Measuring low work intensity – an analysis of the indicator

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ABSTRACT

This paper is a critical assessment of the indicator which has been developed to measure the relative number of people living in households with low, or very low, work intensity which is part of the Europe 2020 target set to reduce poverty and social exclusion in the European Union. It considers the way the indicator is defined and calculated, in particular, the age group taken to be of working-age, the treatment of students, the threshold defined to denote low work intensity and the extent of missing cases. It also examines how far the source of data used – the EU-SILC – correctly distinguishes those of working age who were not employed, or at least very little, over the year to which the indicator applies. It assesses, in addition, whether it is possible to use the Labour Force Survey (LFS) to estimate low household work intensity in advance of the EU-SILC data becoming available, given that that there is a lengthy delay between the year to which the EU-SILC relates and the publication of the data. It considers as well whether it is possible to estimate a measure of persistently low work intensity from the EU-SILC longitudinal data to complement the indicator and add a further level of detail relevant for policy. Finally, it assesses the reliability of the indicator from a statistical perspective by estimating the confidence intervals surrounding the point-estimates both for low work intensity in a particular year and for persistently low work intensity over a 4-year period.

Keywords: Work intensity, workless households, poverty, social exclusion, Europe 2020, employment

1 INTRODUCTION

As part of the Europe 2020 strategy, the target was adopted of reducing the number of people in or at risk of poverty or exclusion by 20 million by 2020. The target is defined in terms of those with income below 60% of the media, being severely materially deprived or living in households with low work intensity, Member States being free to decide on the indicator actually set as a national target from among these[1]. The focus here is on the third of these indicators, the number of people living in households with very low work intensity and, more specifically, on the definition and measurement of the work intensity indicator.

A number of issues are examined in this regard with the aim of assessing the robustness of the indicator and suggesting potential improvements and extensions. These are:

- The way the indicator is at present defined and measured, particularly as regards the age group defined to be of working age and the treatment of students
- The scale of missing data and its potential effect on the results
- The threshold defined as denoting low work intensity
- The case of workless households with income from employment
- A comparison of the EU-SILC and LFS as a basis for calculating the indicator and assessing its reliability as usually measured as well as considering the possible use of the LFS to estimate the value of the indicator well in advance of the EU-SILC data becoming available, so reducing the importance of a serious weakness of the indicator – its lack of timeliness;
- The potential development of an indicator of persistent low work intensity to supplement the indicator of the situation in a single year

2 MEASUREMENT OF WORK INTENSITY

The household work intensity indicator included as part of the Europe 2020 poverty target is measured on the basis of information in the EU-SILC. The indicator is defined, according to Eurostat, as '*the ratio of the total number of months that all working-age household members have worked during the income reference year and the total number of months the same household members theoretically could have worked in the same period*', defining a working-age member to be '*a person aged 18-59 years, with the exclusion of students in the age group between 18 and 24 years*.' In addition, '*households composed only of children, of students aged less than 25 and/or people aged 60 or more are completely excluded from the indicator calculation*[2]'.

Very low work intensity is, in turn, defined as being '*below a threshold set at 0.20*'. Much the same definition is repeated in the Methodological Notes to relevant *Statistics in Focus* publications[3].

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1 Member States were also free to adopt an indicator outside of these three, such as in the case of Germany which selected reducing long-term unemployment as a target.

2 From the *Statistics explained* Eurostat website: http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:Persons_living_in_households_with_low_work_intensity

3 See, for example, Eurostat (2012a).

This definition, however, omits to include an essential element of work intensity which is the extent to which people are employed part-time rather than full-time. This element, as much as people working less than 12 months during the year, is a major reason why households can have people in work – i.e. not be workless households – but be measured as having very low work intensity.

The neglect of part-time working in the published definition echoes the way that work intensity was initially measured when the EU-SILC was first introduced and for some years after[4], though to be fair to Eurostat, the text of the *Statistics in Focus*, referred to above, does acknowledge that an adjustment is made to the indicator for part-time working. This is done as follows: '*For persons who declared that they worked part-time (*at some time during the previous year*), the number of months in terms of full time equivalents is estimated on the basis of the number of hours usually worked at the time of the interview*'[5].

The indicator used to measure very low work intensity, therefore, takes account of part-time employment as well as partial working – such as in the case of those with seasonal jobs or having a spell of unemployment – during the preceding year. Moreover, those living in such households are defined to cover all those aged under 60, so including the children dependent on those of working-age, though not those aged 60 and over who of course might be in work.

There are a number of issues raised by the way the indicator is defined (in practice rather than in Eurostat publications). These relate, in particular, to the treatment of missing cases, the age group defined a being of working age, the treatment of students and the year to which the indicator is held to refer. These are considered in reverse order below.

2.1 YEAR OF INDICATOR

The work intensity indicator, as reported, refers to the year in which the data are collected, i.e. the year of the survey, rather than to the year to which the data – or more precisely the data on the employment situation of people in households – in fact relate. This is the same as for income, and the risk of poverty indicator which is based on income, which at least lends an element of consistency to the practice. The rationale in both cases is that the size and composition of households refer to the situation at the time of the survey, which may be different from that which prevailed during the preceding year. The income or work intensity during the latter is, therefore, taken as a proxy for the current situation at the time of the survey. During 'normal' times, such as in the pre-crisis period in most countries, when neither income nor employment tends to change very rapidly, this practice – and the underlying assumption it embodies – is defensible, though not necessarily for all countries. In the crisis period, however, it is much less so. Indeed, it can lead to confusion and misinterpretation of the data, since those unfamiliar with the practice unsurprisingly assume that the indicator relates to the situation in the year which it is labelled as.

The 2009 indicator of those living in low intensity households, therefore, relates, in practice, to the employment situation in the 12 months of 2008, which in fact were very different for many households in most countries than in 2009 when the global recession led to large-scale job losses and rising unemployment. In reality, therefore, since the crisis began, and even before in many of the EU12 countries in particular, the employment – and income – situation has been much less stable

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4 Up until the publication of the Tarki-Applica study (Tarki, 2010) on *child poverty,* which first proposed the inclusion of part-time working in the measure and produced a means of doing so which is essentially the same as that which was adopted. Details of the method used and a discussion of the case for including part-time working in the measure are set out in Ozdemir and Ward (2009).

5 Eurostat (2012a)*, op cit.*

from year to year than the composition of households. This argues for labelling the indicator as referring to the year to which work intensity – or income – relates rather than when the survey was carried out. While the misleading nature of the present convention can, in principle, be overcome by always noting the employment or income year to which the data relate – e.g. the 2010 work intensity indicator (relating to the situation in 2009) – this, in practice, is rarely done.

In the remainder of this paper, the year reported for the indicator is the year to which work intensity actually relates. The same applies to the other indicators referred to, the risk of poverty in particular. (It is relevant to note in this regard that the other indicator included in the Europe 2020 poverty target, the relative number of those experiencing severe material deprivation, actual relates to the year it is reported for, in that it refers to the situation at the time of the survey. Because of this, however, it is out of line with the other two indicators included, so that there is an inherent inconsistency in the overall poverty target. To resolve this inconsistency, the material deprivation indicator used as part of the composite target should really be defined to relate to the same year as the other two indicators, and certainly any analysis of the relationship between the respective indicators should take the time difference explicitly into account.)

2.2 TREATMENT OF STUDENTS

Students aged under 25, those in full-time education or training, are excluded from the Eurostat measure of wok intensity. Households consisting solely of students are omitted entirely, while those living in households with others in the 18-59 age group are not counted in the measure. The rationale for their exclusion is that they can be assumed not to be available for work if they are studying or training and so should not be included in the indicator. Those defined as students are those reporting to be such at the time of the survey, irrespective of whether they were studying throughout the year over which household work intensity is being measured. Indeed, some of them may have been in employment, at least for part of the time.

In order to take explicit account of this possibility and to focus on the extent to which household members were employed during the year to which the measure relates, an alternative approach is to exclude students on a month-by-month basis – i.e. to not count in the measure the months in which household members aged 18-24 report that they were studying but to count the months they report they were working or unemployed. This has the advantage over the Eurostat procedure of allowing for the non-availability for work of those in education or training but also allowing for the possibility of someone's situation at the time of the survey not reflecting their situation in the preceding year. As such, it is consistent with the treatment of all those not reported to be students at the time of the survey, in that their status at this time is ignored (except if they work part-time in which case their usual hours of work is used in the calculation) and the only relevant data relate to their employment situation over the course of the preceding year.

The counter-argument is that the rationale for the present procedure is to exclude those who are 'long-term' students and not necessarily those who might be studying or in training only temporarily. However, the variable in the EU-SILC which is used to identify students covers both groups, the temporary as well as the long-term, and makes no distinction between them. Accordingly, there is a real possibility that a number of those recorded as students at the time of the survey might be on a short-term training course and might have been employed, or perhaps unemployed, during the

previous year or at least during part of it[6]. More importantly in practice, those recorded as being a 'non-student' at the time of the survey – whether employed, unemployed or inactive – may have been studying or undertaking training in some months during the year before, or even most months.

The effect on the indicator, however, of changing the way that students are counted is relatively small, at least in respect of the number living in low work intensity households. In nearly all cases, counting students in terms of the monthly record of economic status during the year rather than that reported at the time of the interview either reduces slightly the proportion of those aged under 60 living in low work intensity households or leaves it unchanged. This reflects the fact that, in the main, those aged 18-24 who reported being students at the time of the survey were also studying throughout the previous year. It also reflects the fact that a number of those who were not studying at the time of the survey were studying at some time during the year, which in itself has the effect of reducing the relative number living in low work intensity households since the young people concerned are excluded from the measure instead of being counted as not working (see Box for more details)

2.2.1 TREATMENT OF STUDENTS

The two methods of allowing for young people in education or training in the calculation of the work intensity indicator, that of excluding them on the basis of their reported status at the time of the survey or on the basis of the months in which they were studying or training, produce slightly different results. The latter method can lead to an increase in the number of low work intensity households – and therefore the number living in them – as compared with the former if those aged 18-24 recorded as students at the time of the survey were unemployed or inactive but not studying during the course of the previous year. If they were employed during the year, it is just possible that it might reduce the number, if the households concerned were counted as being of low work intensity on the alternative method. If those not recorded as students at the time of the survey were studying or in training during the year – i.e. there were months in which they are excluded from the measure of work intensity because of this –then this could reduce the number living in low work intensity households since on the alternative method, they would be counted as not working. How much it reduces it by in practice depends on the employment status of others in the household. Both effects are likely to be small, though on balance the latter seems likely to outweigh the former, which is the case in practice.

In the four years 2006-2009 ('years' being those to which the measure relates rather than those in which the survey was conducted), therefore, only in Ireland and Austria in 2008 and Sweden in 2009 does moving from the time-of-survey method for allowing for students to the monthly basis result in the proportion living in low working intensity households increasing, though by very little (by less than 0.2 of a percentage point in each case) (see Annex Table A.1). The Ireland case is interesting because the difference between the two methods moves from being a relatively large negative in 2006 (i.e. less people were living in low work intensity households if months are counted) to a positive in 2008, which might reflect of the effect of the recession which struck during the year in encouraging more young people to return to education from being unemployed or inactive (so pushing up the number reporting being students at the time of the survey as compared with during the preceding year).

[6] The variable in the EU-SILC by which students are identified (PL031) relates to the self-defined status of the person surveyed at the time of the interview, the relevant option being 'pupil, student, further training, unpaid work experience'.

The reduction in the indicator from moving from a time-of-survey to a monthly basis is largest in Denmark and the Netherlands in both 2008 and 2009, if still relatively small (though reaching 0.6 of a percentage point in the Netherlands in 2008), suggesting that in these two countries a relatively large number of non-students at the time of the survey were studying or in training in some months during the year.

Although it makes relatively little difference to the results, in the calculations reported here from this point on, the method used to allow for student is that based on the reported status of respondent in each month of the year to which the indicator relates, since this seems more satisfactory, in principle, than the alternative, especially given the impossibility in the data of distinguishing between temporary and long-term students.

2.3 DEFINITION OF WORKING-AGE

The definition of working age in the calculation of the indicator of 18-59 is also open to question. It can be defended by reference to the fact that in many countries, a substantial proportion of people – and in some countries, most – have retired from working before they reach 60. Nevertheless, at a time when an increasing number of people are remaining in employment after the age of 59 and, indeed, are being encouraged to do so across the EU by Governments, including through changes in the regulations governing pension arrangements, there is a strong case for extending the upper age limit to 64. This would bring it into line with the usual definition of working age and, indeed, with the employment target adopted by the Europe 2020 strategy – i.e. 20-64 (though admittedly this also adopts a higher lower age limit).

As such, it would mean that the work intensity indicator and employment target were consistent with each other and that measures taken to achieve the latter (especially those aimed at delaying the age of retirement, assuming of course that sufficient jobs are available to avoid this reducing employment of other age groups) would also tend to help to achieve the poverty and social exclusion target. Accordingly, it seems more appropriate to take an upper age limit of 64 rather than 59 when calculating the indicator and in the remainder of the analysis, the work intensity of households is calculated on the basis of defining working-age as 18-64 and examining those aged under 65 living in low work intensity households.

This alternative definition of working age, as might be expected, increases the number of people living in low work intensity households, though by varying amounts across countries reflecting the extent to which those aged 60-64 are in employment, or, conversely, the extent to which men and women tend to retire before reaching 65. Overall in the EU27, the proportion of those aged under 65 living in households with zero work intensity (i.e. with no-one in employment) amounted to 10.8% in 2009 (i.e. according to the 2010 survey) with a further 1.7% living in households with work intensity of less than 0.2 but more than zero (i.e. with someone in work but only employed part-time or part of the year[7]). This compares with figures of 8.4% and 1.5%, respectively, if working-age is defined as 18-59, an overall difference of 2.6 percentage points (Table 1).

[7] In principle, in the case of households with 5 or more people of working age, it might be possible for someone to be in full-time work, but such households are rare. Typically, low work intensity households consist of one person in a two or three-person household working part-time or someone living alone working just a few hours a week.

TABLE 1 PROPORTION OF THOSE OF WORKING-AGE LIVING IN LOW WORK INTENSITY HOUSEHOLDS ON ALTERNATIVE DEFINITIONS OF WORKING AGE, 2009

	% 0-64			% 0-59			Percentage point difference		
	Zero	0.01-0.19	<0.20	Zero	0.01-0.19	<0.20	Zero	0.01-0.19	<0.20
Belgium	14.3	2.0	16.3	10.6	1.7	12.3	3.7	0.3	4.0
Bulgaria	7.5	2.1	9.6	5.9	1.9	7.8	1.6	0.2	1.8
Czech Republic	8.7	0.7	9.5	5.5	0.6	6.2	3.2	0.1	3.3
Denmark	11.8	0.9	12.7	9.8	0.7	10.5	2.0	0.2	2.2
Germany	11.8	1.4	13.3	9.7	1.3	11.0	2.1	0.2	2.3
Estonia	7.9	2.6	10.5	6.6	2.5	9.1	1.3	0.1	1.4
Ireland	23.1	2.9	26.0	22.5	2.8	25.4	0.6	0.1	0.7
Greece	7.6	1.5	9.1	6.1	1.3	7.3	1.5	0.2	1.7
Spain	8.2	2.9	11.1	7.0	2.8	9.8	1.2	0.1	1.3
France	11.5	2.2	13.6	7.5	2.0	9.4	4.0	0.2	4.2
Italy	11.1	1.4	12.4	8.6	1.2	9.8	2.5	0.1	2.6
Cyprus	4.9	1.0	5.9	3.5	0.9	4.4	1.4	0.1	1.5
Latvia	9.4	3.8	13.2	8.3	3.6	11.9	1.1	0.2	1.3
Lithuania	9.2	1.5	10.7	7.6	1.5	9.1	1.6	0.0	1.6
Luxembourg	6.9	1.2	8.1	4.5	0.8	5.3	2.4	0.4	2.8
Hungary	12.7	2.9	15.6	8.9	2.7	11.7	3.7	0.2	3.9
Malta	10.4	1.0	11.5	7.9	1.0	8.9	2.5	0.1	2.6
Netherlands	9.1	1.5	10.6	6.6	1.2	7.8	2.5	0.3	2.9
Austria	9.0	1.9	10.8	5.9	1.6	7.5	3.1	0.2	3.3
Poland	8.6	1.8	10.4	6.1	1.5	7.6	2.5	0.3	2.8
Portugal	8.6	1.6	10.2	7.1	1.4	8.4	1.6	0.2	1.8
Romania	8.7	0.5	9.2	6.0	0.5	6.5	2.7	0.0	2.7
Slovenia	9.0	0.8	9.8	6.1	0.6	6.7	2.9	0.2	3.1
Slovakia	8.6	1.4	10.0	6.1	1.3	7.4	2.5	0.1	2.6
Finland	9.6	2.2	11.9	7.0	2.1	9.1	2.6	0.2	2.8
Sweden	6.0	1.3	7.3	4.9	1.3	6.2	1.0	0.0	1.1
UK	15.3	0.8	16.1	13.1	0.5	13.6	2.2	0.3	2.5
EU12	9.0	1.5	10.5	6.4	1.4	7.8	2.6	0.1	2.8
EU15	11.3	1.7	13.0	8.9	1.5	10.4	2.4	0.2	2.6
EU27	10.8	1.7	12.5	8.4	1.5	9.8	2.4	0.2	2.6

Note: Working age defined as 18-64 in first section, 18-59 in second. The columns relate to levels of work intensity

Source, Eurostat, EU-SILC plus authors' calculations

The proportion living in both zero work intensity households and low work intensity ones (i.e. more than 0 but less than 0.2) was larger in the EU15 than in the EU12 (11.3% as opposed to 9.0% and 1.7% as against 1.5%), reflecting in part the more developed nature of the social security system in the former which makes it more possible for people under the age of retirement to live in households with no income from employment coming in. The difference in the measure on the two different definitions of working age, however, is the same for both the EU15 and EU12.

The proportion living in low work intensity households (including workless ones) n 2009 varied from 26% in Ireland, far large than in any other EU country, and over 16% in both Belgium and the UK to only 7% in Sweden to just 6% in Cyprus (Table 1). The difference between the two measures was also relatively wide in Belgium (4 percentage points) – though this was slightly less than in France, where it was widest of all – and relatively small in Sweden (just over 1 percentage point). Perhaps unexpectedly, it was smallest of all in Ireland (only 0.7 of a percentage point, emphasising the high levels of unemployment among younger age groups.

2.3.1 CHANGES BETWEEN 2008 AND 2009

The relative number of people living in low work intensity households increased between 2008 and 2009 in virtually all EU Member States as the recession hit, the only exceptions being Germany and the Netherlands, where it remained unchanged, and Luxembourg, Malta, Romania and the UK, where it declined. (In the UK, where unlike in the other three countries, unemployment rose sharply, the main effect on household work intensity was a reduction in households with high work intensity and an increase in those with work intensity around 0.5 reflecting a change from both members of couple households being in employment to only one.) The biggest increases were in the three Baltic States and Spain (by around 3 percentage points or above), the countries hit hardest by the recession. In Ireland, which was also hit hard but earlier than most other countries, the increase occurred mainly between 2007 and 2008 (the proportion rising by 9 percentage points).

In most countries, the difference in the proportion measured on the basis of the two different definitions of working-age population narrowed slightly between 2008 and 2009, reflecting the relative concentration of job losses on those under 60 as compared with those of 60-64.

3 TREATMENT OF MISSING CASES

In practice, there are very few cases where the EU-SILC data are missing for the employment status of respondents in the 12 months during the year preceding the survey (see Annex Table A.2). In nearly all countries, therefore, the effect of alternative methods of dealing with missing observations on the relative number of people reported to be living in low work intensity households is marginal. The does not necessarily mean that very few respondents failed to provide the information in question, only that the data are recorded as being almost complete. In particular, in some cases, the information may not have been collected from respondents but imputed instead. There is no way of knowing, however, the number of cases, if any, where this has occurred.

Only in the UK is the number of respondents for whom data are missing on their employment status during the preceding 12 months large enough to have more than a marginal effect on the results. In the 2010 survey, therefore, there were gaps in these data for the UK for some 13% of people, the next largest figures being for Denmark and Sweden at 2.5% and 3.5%, respectively. In the 2009 survey, the figure for the UK was much higher, with data missing for 23% of people respondents, while in 2008 it was similar to that in 2010[8]. Before 2008, the data were complete. A disproportionate number of those concerned were either unemployed or inactive at the time of the survey – 38% in 2010 as opposed to 24% of those for whom the monthly data are complete.

Nevertheless, despite this, the inclusion of the missing cases with the assumption that their employment status at the time of the survey prevailed throughout the preceding year has the effect of reducing the proportion of those aged under 65 living in low work intensity households as compared with excluding them completely from the calculation – the usual way of treating them. The reason is that in most cases, the people concerned share households with other people in work rather than living alone or with people not in employment. Accordingly, the main effect is to reduce the relative number living in households with 'full' work intensity (i.e. everyone of working-age, bar students, in full-time employment throughout the year) and to increase the number living in households with less than full but more than low work intensity.

[8] These figures relate to the proportion of 'weighted' respondents (i.e. after adjustment to be representative of the population as a whole). On an unweighted basis, they are much larger.

The proportion in low work intensity households in 2009 (i.e. on the basis of data collected in the 2010 survey) on this assumption is, therefore, 15.3% as opposed to 16.1% if the missing cases are excluded from the calculation (though the proportion living in households with work intensity of less than 0.5 – 0.5 corresponding typically to only one person in a couple being in full-time employment – is slightly larger on the former approach than the latter). In 2008, however, when the number of missing cases was substantially larger, the proportion in low work intensity households is smaller still on the alternative assumption than on the usual one – 15.2% rather than 17.2%, a difference of 2 percentage points. This means that instead of declining between 2008 and 2009 according to the conventional method of calculation, the proportion in low work intensity households increased marginally – or at least remained much the same – which is more in line with the rise in unemployment noted above.

4 DEFINITION OF LOW WORK INTENSITY

The poverty target set as part of the Europe 2020 strategy takes levels below 0.2 as defining low – or very low – work intensity of households. The choice of this particular threshold seems to have been made by reference to the risk of poverty which those living in households with low work intensity tend to experience. The evidence suggests that 0.2 is a reasonable figure to take in that in many countries the risk of poverty associated with a household work intensity of between 0 and 0.2 is more than the risk for zero work intensity. Nevertheless, there is a case for taking a slightly higher figure as a threshold. Given that a major reason for households having a low – rather than zero – work intensity is part-time working[9], it is arguable that the threshold chosen should be linked in some way to this. A figure of 0.3, for example, is a possible candidate, since this corresponds to a situation where one person in a couple household works 20 hours a week or less (taking 35 hours a week as full-time working)[10].

To check the case f for selecting a slightly higher threshold than 0.2 - and at the same time to review the rationale for selecting 0.2 – the analysis below examines the difference in the risk of poverty between those living in households with work intensity of less than 0.2 and those in households where it is less than 0.3, comparing the risk in each case to that for those living in workless households.

In 2009, some 46% of those aged under 65 living in workless households in the EU were at risk of poverty, in the sense of having equivalised net income of less than 60% of the national median (Table 2). This was less than for those in households with work intensity of above zero but less than 0.2 (53%). Indeed, in 20 of the 27 EU Member States, the proportion at risk of poverty was larger for those in households with work intensity of between 0 and 0.2 than for those in workless households, which gives some justification for defining the indicator to include low work intensity households as well as entirely workless ones.

[9] There tend to be fewer people who work only part of the year than work part-time on a regular basis throughout the year. This point is picked up below when assessing the possibility of using the LFS rather than the EU-SILC to define low work intensity households.

[10] 20 hours a week is the average number of weekly hours worked by someone employed part-time in the EU.

TABLE 2 PROPORTION OF THOSE AGED UNDER 65 AT RISK OF POVERTY BY HOUSEHOLD WORK INTENSITY, 2009

	Household work intensity						
	Zero	0-0.2	0.2-0.3	0.3-0.5	0.5	0-5-1.0	1.0
Belgium	45.1	45.4	35.5	22.0	15.4	4.3	2.6
Bulgaria	65.6	70.7	60.7	46.0	18.0	6.8	4.0
Czech Republic	39.3	47.6	35.0	21.4	10.7	4.5	2.8
Denmark	37.3	35.0	19.7	26.9	9.4	7.4	5.8
Germany	62.1	49.5	36.2	25.7	12.8	6.2	5.3
Estonia	67.4	55.2	40.5	31.2	18.0	6.8	5.3
Ireland	37.1	19.2	21.1	17.3	16.3	6.2	4.1
Greece	32.5	40.9	44.1	40.1	28.2	14.2	7.1
Spain	52.0	55.5	39.6	30.2	27.2	12.5	9.0
France	35.0	54.6	30.4	23.9	19.5	7.2	4.4
Italy	45.2	56.1	40.3	31.0	25.2	7.0	4.1
Cyprus	48.6	64.9	46.2	27.2	21.7	6.2	3.9
Latvia	69.9	63.9	54.7	33.9	25.0	9.8	7.0
Lithuania	59.0	70.9	46.2	36.6	38.4	15.0	8.1
Luxembourg	33.1	45.8	35.2	29.7	23.7	10.5	8.5
Hungary	34.8	61.3	38.7	26.4	12.0	6.8	2.1
Malta	52.8	63.1	27.3	21.7	17.9	3.3	1.4
Netherlands	28.9	37.3	16.4	15.7	17.7	5.2	4.8
Austria	39.1	46.7	35.8	22.0	11.9	4.6	3.7
Poland	42.0	58.9	48.0	28.2	25.0	14.5	8.0
Portugal	47.7	65.3	42.2	29.8	25.5	12.0	5.0
Romania	32.2	73.4	41.7	38.1	27.1	22.7	11.0
Slovenia	44.9	44.0	35.1	23.1	20.4	6.2	3.4
Slovakia	42.7	63.6	47.0	20.5	16.7	6.6	5.0
Finland	47.8	49.4	24.9	28.5	10.5	5.2	2.7
Sweden	53.6	56.3	36.4	21.9	14.2	7.1	5.8
UK	48.8	33.5	40.7	20.7	14.9	7.5	4.1
EU12	41.8	61.8	45.6	31.5	21.6	12.9	6.8
EU15	47.3	50.5	36.4	27.0	20.0	7.5	5.1
EU27	46.4	52.7	38.5	28.1	20.4	8.4	5.5

Source: Eurostat, EU-SILC and authors' calculations

The proportion at risk of poverty of those living in households with work intensity of between 0.2 and 0.3 was less than for those in workless households in2009, but still substantial at almost 39% and over 10 percentage points more than for those with work intensity of above 0.3 but below 0.5. The pattern of difference was similar in the EU15, but somewhat different in the EU12 countries taken together, where the proportion at risk of poverty was larger for those in households with work intensity of between 0.2 and 0.3 – i.e. above the level defined as very low work intensity in respect of the Europe 2020 target – than for those in workless households (46% as opposed to 42%). At the same time, there are only four of the EU12 countries (Hungary, Poland, Romania and Slovakia) where this is the case and in the EU15, only one country (Greece), which lends some support to defining the threshold at 0.2.

However, the evidence for the years before 2009 is much less clear-cut. In 2008, for example, the difference in the EU in the proportion at risk of poverty between those living in households with work intensity of 0.2-0.3 and those in workless households was only 2.5 percentage points (42% as against 44.5%) and there were 11 countries where the proportion was larger in the former than in the latter (6 of them EU12 countries and France, Italy, Denmark and Austria as well as Greece in the

EU15). In 2007, the difference was 5 percentage points, but again there were 11 countries where the proportion at risk of poverty was larger for the former than the latter. The evidence for these years, therefore, suggests that there is a case for adopting a slightly higher threshold for defining low work intensity, which would also give a more rational link with part-time working.

The effect if raising the threshold would, of course, be to increase the relative number of people living in low work intensity households, though to differing extents across countries. On average across the EU, the inclusion of those in households with work intensity of between 0.2 and 0.3 adds just over 2 percentage points to the proportion living in low work intensity households as currently defined (an increase of around 18%), raising the overall proportion concerned to just under 15% (Table 3). In Ireland and Lithuania, however, it adds almost 4 percentage points and in Bulgaria, Spain, Italy, Latvia and Hungary, around 3 percentage points (equivalent to around a third in Lithuania and Bulgaria).

In terms of year-to-year changes, adopting a higher threshold for low work intensity does not alter the overall picture significantly. In 7 Member States, however, it increases the rise between 2008 and 2009 by 0.5 of a percentage point or more and in two of these, Latvia and Lithuania, by around 2 percentage points.

TABLE 3 PROPORTION OF THOSE AGED UNDER 65 LIVING IN LOW WORK INTENSITY HOUSEHOLDS ON ALTERNATIVE DEFINITIONS, 2007-2009 (% OF AGE GROUP AND PERCENTAGE POINT CHANGE)

	Low work intensity (<0.2)			Low work intensity (<0.3)			Change 2008-09	
	2007	2008	2009	2007	2008	2009	<0.2	<0.3
Belgium	14.9	15.5	16.3	16.6	17.4	19.0	0.8	1.6
Bulgaria	10.1	8.6	9.6	14.0	11.8	12.8	1.0	0.9
Czech Republic	10.3	8.9	9.5	11.4	10.0	10.8	0.5	0.8
Denmark	11.5	11.3	12.7	12.3	12.5	13.7	1.4	1.2
Germany	14.5	13.3	13.3	16.2	15.1	15.1	0.0	0.0
Estonia	6.5	7.1	10.5	7.5	8.1	12.7	3.5	4.6
Ireland	15.0	24.6	26.0	18.0	28.1	29.8	1.4	1.7
Greece	8.8	8.8	9.1	11.5	11.3	11.8	0.3	0.6
Spain	7.2	8.3	11.1	8.8	10.7	14.1	2.8	3.4
France	12.4	12.0	13.6	14.1	13.8	15.7	1.7	1.9
Italy	11.6	10.6	12.4	14.6	13.5	15.4	1.8	2.0
Cyprus	5.0	5.1	5.9	6.7	6.2	7.4	0.8	1.2
Latvia	6.5	7.7	13.2	8.1	8.7	16.3	5.6	7.5
Lithuania	6.5	8.1	10.7	8.2	10.0	14.5	2.6	4.5
Luxembourg	7.0	8.7	8.1	8.8	10.1	9.9	-0.6	-0.2
Hungary	15.3	14.9	15.6	17.7	18.1	18.5	0.7	0.4
Malta		11.8	11.5		14.4	14.2	-0.3	-0.2
Netherlands	10.7	10.7	10.6	11.9	12.2	12.0	0.0	-0.1
Austria	10.6	10.1	10.8	12.4	11.8	12.8	0.7	1.0
Poland	10.9	9.9	10.4	13.0	12.1	12.8	0.6	0.7
Portugal	7.7	8.5	10.2	10.0	10.6	13.0	1.7	2.4
Romania	10.2	9.8	9.2	12.4	12.1	11.7	-0.6	-0.5
Slovenia	9.4	8.1	9.8	10.8	9.0	10.8	1.7	1.8
Slovakia	7.7	8.0	10.0	9.2	9.5	12.0	2.0	2.5
Finland	9.8	10.7	11.9	12.0	12.8	14.3	1.2	1.5
Sweden	6.6	7.0	7.3	8.7	9.3	9.5	0.2	0.2
UK	13.8	17.2	16.1	15.1	18.7	17.5	-1.2	-1.2
EU12	10.5	9.8	10.5	12.6	12.0	12.9	0.7	0.9
EU15	11.8	11.9	13.0	13.7	14.0	15.2	1.1	1.2
EU27	11.5	11.5	12.5	13.5	13.6	14.7	1.0	1.2

Note: No data for MT in 2007

Source: Eurostat, EU-SILC and authors' calculations

5 WORKLESS HOUSEHOLDS WITH INCOME FROM EMPLOYMENT

It is evident from the above, that most of the people living in households with low work intensity, whether the latter is defined as below 0.2 or below 0.3, live in households where no-one is recorded as being in employment according to the way the indicator is measured. This, however, can exclude some people who work relatively little, perhaps for only a week or two in a few months of the year, such as possibly students or those in casual work. The reason is that the data which report employment status in each of the months during the preceding year relate to the main activity only. Though respondents are asked to give priority to employment, or at least to economic activity, it is uncertain how far they comply with this request or how prevalent working for less than half the month is, especially if they work very few hours or if they think of some activity other than working, such as studying or training, as being what they predominantly did[11].

Accordingly, some of those living in households recorded as being workless report having income from employment. Indeed, in many Member States, the number is significant. In 2009, around 17% of all those aged 18-64 in the EU living in workless households (i.e. where no-one reported being in employment during any of the months in the year), and accordingly recorded as being in work throughout the year, reported receiving some income from employment (Table 4).

[11] According to the EU-SILC Guidelines (Eurostat, 2012b), '*if more than one type of activities occur in the same month, priority should be given to economic activity … over non-economic activity and over inactivity. On the basis of this principle, the following rules may be used:*

- *If the respondent worked, at least during 2 weeks of the month*, (then they should be coded as employed)
- *If more than one of the other codes apply in the same month, the respondent will select one on the basis of self-assessment. The criterion of most time spent may be useful where applicable'*.

TABLE 4 PROPORTION OF THOSE AGED 18-64 LIVING IN WORKLESS HOUSEHOLDS WITH INCOME FROM EMPLOYMENT, 2006-2009 (% OF TOTAL)

	2006	2007	2008	2009
Belgium	4.6	3.8	5.5	5.5
Bulgaria	21.0	23.5	13.3	33.6
Czech Republic	6.3	9.4	8.0	10.7
Denmark	47.7	44.8	47.0	42.7
Germany	16.6	13.2	16.6	14.5
Estonia	16.1	21.5	18.4	21.4
Ireland	3.9	1.2	27.0	20.0
Greece	7.8	4.4	5.3	5.1
Spain	4.9	4.4	5.6	3.8
France	11.9	29.2	27.2	27.4
Italy	32.1	30.4	36.4	33.0
Cyprus	6.5	7.2	8.5	15.2
Latvia	27.6	28.1	33.4	31.3
Lithuania	9.3	9.2	12.6	35.0
Luxembourg	0.9	0.5	1.4	1.5
Hungary	23.9	20.8	22.4	21.7
Malta			9.4	13.8
Netherlands	21.0	23.7	23.1	28.1
Austria	11.6	10.5	13.3	17.8
Poland	3.0	3.6	3.0	3.9
Portugal	5.3	1.8	2.6	3.1
Romania	10.8	5.0	6.2	6.4
Slovenia	38.7	38.3	34.2	33.1
Slovakia	12.1	9.2	13.3	14.6
Finland	26.7	26.7	27.5	25.5
Sweden	35.7	36.7	42.1	38.3
UK	24.6	8.3	4.0	7.8
EU12	11.1	9.9	9.9	12.8
EU15	18.8	17.7	18.9	18.2
EU27	17.4	16.2	17.2	17.2

Note: No data for MT in years 2006 and 2007.

Source; Eurostat, EU-SILC and authors' calculations

In Italy, Bulgaria, Lithuania and Slovenia, the proportion was around a third, in Sweden, just under 40% and in Denmark, over 40%. Much the same was the case in 2008, when as many as 47% of those in Denmark not employed during the year were, nevertheless, in receipt of income from employment. It is noteworthy perhaps that many of the countries where the proportion is large are those where information on income is provided from registers rather than from interview, which might increase the possibility of someone being recorded as having earnings from employment but reporting that they were not employed during particular months[12].

In practice, though the people concerned receive some income from employment, it tends to account for only a relatively small proportion of the overall income of workless households, except in

[12] The countries using registers as well as interviews to provide data on income are Denmark, the Netherlands, Finland, Sweden and Slovenia. There are a number of other countries which also use register data but for income these are combined with information from interviews whereas for these 5 countries, data on income come exclusively from registers.

some countries. On average in the EU, in 2009, it represented just 5% of the total and well under 10% in most Member States (Table 5).

TABLE 5 INCOME FROM EMPLOYMENT AS A SHARE OF INCOME OF WORKLESS HOUSEHOLDS, 2006-2009 (%)

	2006	2007	2008	2009
Belgium	1.6	1.2	1.7	1.7
Bulgaria	10.0	8.5	6.3	12.3
Czech Republic	1.4	2.0	1.6	2.0
Denmark	20.8	16.9	15.9	15.9
Germany	5.6	4.3	5.0	4.3
Estonia	5.5	7.4	6.8	8.1
Ireland	0.3	0.5	9.2	6.9
Greece	2.0	1.0	1.4	1.1
Spain	2.0	1.5	2.1	1.5
France	3.6	6.0	4.4	5.0
Italy	11.6	11.2	14.8	12.4
Cyprus	0.3	0.5	1.3	2.6
Latvia	9.4	9.0	14.4	10.4
Lithuania	2.4	2.4	5.0	12.7
Luxembourg	0.2	0.1	0.1	0.2
Hungary	6.2	5.3	5.1	5.1
Malta			3.5	4.6
Netherlands	5.3	5.9	5.7	8.6
Austria	3.2	2.7	2.4	4.0
Poland	1.0	0.9	0.7	0.9
Portugal	1.5	0.6	0.9	1.3
Romania	3.3	1.3	2.6	2.6
Slovenia	6.1	7.3	5.2	5.1
Slovakia	2.4	1.9	1.8	3.2
Finland	4.8	5.1	4.5	0.5
Sweden	9.3	10.7	9.4	9.5
UK	19.2	1.9	2.6	3.2
EU12	3.5	2.6	2.8	3.7
EU15	8.5	5.1	5.8	5.4
EU27	7.5	4.6	5.2	5.1

Note: No data for MT in years 2006 and 2007.

Source: Eurostat, EU-SILC and authors' calculations

The proportion was largest in Denmark (at around 16% of their overall income) and around 12-13% in Italy, Bulgaria and Lithuania. Apart from these countries, it was above 10% only in Latvia, though only just below 10% in Sweden. In Slovenia, where the proportion of people concerned was relatively large, the share of income from work amounted to no more than the EU average. The situation in previous years was similar in the sense that income from employment was small and there were even fewer countries where it accounted for more than 10% of the total of those living in workless households (only Denmark, Italy and Latvia in 2008 and only the first two countries and Sweden in 2007).

Since having income from employment implies that the people concerned were working at least for some of the time during the year even if they did not record the fact as such, it means that the measure of work intensity, and in particular, the proportion living in workless households, is defective to some extent. In other words, some of the paid work carried out by household members

is not being captured. The question examined here is how much and what difference does it make to the value of the indicator as calculated.

First, however, it is instructive to consider the characteristics of those living in workless households who, nevertheless, were in receipt of income from employment. In practice, a disproportionate number were aged 18-24 in 2009 – around 36% of the total aged 18-64, almost three times their share of the age group, over 40% in Denmark and Estonia, over 60% in Slovenia and almost 75% in the Netherlands (Table 6). In Italy, on the other hand, the proportion was only 20%, though this is still significantly more than the share of the age group in the total of working age as defined.

Of those aged 18-24, a disproportionate number were students– or more precisely reported themselves to be students at the time of interview (i.e. in 2010). In the EU as a whole, this was the case for almost 60% of those concerned and over 70% in Slovenia (in which a significant number of young people work in student jobs on a casual basis, especially during the Summer months), though only around a quarter in Italy, where a third of the age group reported themselves to be unemployed.

TABLE 6 AGE DISTRIBUTION OF THOSE WITH INCOME FROM EMPLOYMENT IN WORKLESS HOUSEHOLDS, 2010 (%)

	18-24	25-49	50-64
Belgium	56.4	21.8	21.8
Bulgaria	30.8	36.2	33.0
Czech Republic	37.5	27.2	35.3
Denmark	40.1	37.7	22.2
Germany	34.1	45.0	21.0
Estonia	43.5	36.8	19.8
Ireland	26.9	52.8	20.3
Greece	11.7	33.5	54.8
Spain	39.0	35.0	26.0
France	40.8	30.5	28.8
Italy	20.0	45.5	34.5
Cyprus	67.7	7.7	24.6
Latvia	28.7	44.9	26.4
Lithuania	34.2	30.6	35.2
Luxembourg	37.6	27.3	35.0
Hungary	22.7	30.9	46.4
Malta	61.8	21.6	16.6
Netherlands	74.0	13.0	13.0
Austria	37.8	33.8	28.4
Poland	11.0	18.0	71.0
Portugal	13.1	45.0	41.9
Romania	11.9	34.2	53.9
Slovenia	62.9	16.1	21.0
Slovakia	58.3	19.4	22.4
Finland	27.6	29.6	42.8
Sweden	33.7	31.3	35.0
UK	49.7	38.1	12.3
EU12	32.1	28.3	39.6
EU15	37.1	36.4	26.5
EU27	36.3	35.2	28.5

Source: Eurostat, EU-SILC and authors' calculations

6 EFFECT ON WORK INTENSITY OF INCLUDING THE NON-EMPLOYED WITH EMPLOYMENT INCOME

An estimate can be made of the potential effect on the relative number living in low work intensity households of including those who reported not working throughout the year but who also reported having income from employment. A simple – if relatively crude – means of doing this is to assume that their working time during the year was the same as the contribution to household income made by the income they reported receiving from employment, which is tantamount to assuming that their wages were around the average. In practice, their wages might well be lower than this since many of the people concerned were young and students, so that they are likely to have worked significantly longer than assumed to earn what they did. Accordingly, the estimates reported here can be regarded as a lower limit of the actual effect on the indicator.

The average effect over the EU as a whole of taking account of those with income from employment in workless households and adjusting the measure accordingly, as described above, is to reduce the relative number living in such households by 1.7 percentage points in 2009 (from 10.8% to 9.1%) (Table 7). The effect is bigger in the EU15 than in the EU12 (1.9 percentage points as against 1.1 percentage points), reflecting in part the greater tendency for young people to do casual work. It is also slightly bigger in 2009 than in the two previous years, reflecting the (small) increase in the number of people involved.

TABLE 7 EFFECT OF INCORPORATING ESTIMATED WORKING TIME OF THOSE IN WORKLESS HOUSEHOLDS WITH EARNINGS FROM EMPLOYMENT, 2007-2009 (PERCENTAGE POINT DIFFERENCE FROM STANDARD INDICATOR)

	Zero			0-0.2			*Low work intensity*		
	2007	2008	2009	2007	2008	2009	2007	2008	2009
Belgium	-0.5	-0.7	-0.6	0.3	0.4	0.3	-0.2	-0.3	-0.3
Bulgaria	-1.8	-0.8	-2.5	1.3	0.5	1.7	-0.5	-0.4	-0.8
Czech Republic	-0.8	-0.7	-0.9	0.7	0.5	0.7	-0.2	-0.1	-0.2
Denmark	-4.8	-4.9	-5.0	2.9	3.4	3.4	-1.8	-1.5	-1.6
Germany	-1.7	-1.9	-1.6	1.3	1.6	1.4	-0.4	-0.3	-0.3
Estonia	-1.2	-1.1	-1.6	1.0	0.8	1.0	-0.3	-0.3	-0.5
Ireland	-0.1	-5.2	-3.8	0.1	1.8	1.5	-0.1	-3.4	-2.3
Greece	-0.3	-0.4	-0.4	0.2	0.2	0.2	-0.1	-0.1	-0.2
Spain	-0.2	-0.3	-0.3	0.1	0.2	0.1	-0.1	-0.2	-0.2
France	-2.9	-2.7	-3.0	1.9	2.1	2.3	-1.0	-0.6	-0.7
Italy	-3.0	-3.4	-3.6	1.6	1.8	1.7	-1.4	-1.6	-1.9
Cyprus	-0.3	-0.4	-0.7	0.3	0.3	0.7	0.0	0.0	0.0
Latvia	-1.5	-2.2	-2.9	1.1	1.6	2.2	-0.4	-0.6	-0.7
Lithuania	-0.5	-0.9	-3.1	0.4	0.7	2.4	-0.1	-0.1	-0.7
Luxembourg	0.0	-0.1	-0.1	0.0	0.1	0.1	0.0	0.0	0.0
Hungary	-2.5	-2.8	-2.7	1.9	2.1	2.0	-0.6	-0.7	-0.7
Malta	:	-0.9	-1.0	:	0.6	0.9	:	-0.3	-0.1
Netherlands	-1.5	-1.5	-1.7	1.3	1.4	1.3	-0.2	-0.2	-0.3
Austria	-0.9	-1.0	-1.5	0.6	0.9	1.2	-0.4	-0.2	-0.4
Poland	-0.3	-0.3	-0.3	0.2	0.2	0.2	-0.1	-0.1	-0.1
Portugal	-0.1	-0.2	-0.3	0.1	0.1	0.1	0.0	-0.1	-0.2
Romania	-0.5	-0.5	-0.5	0.4	0.3	0.4	-0.1	-0.2	-0.1
Slovenia	-2.6	-2.3	-2.6	2.0	1.8	2.3	-0.6	-0.4	-0.3
Slovakia	-0.6	-0.9	-1.2	0.5	0.7	0.9	-0.1	-0.1	-0.2
Finland	-2.1	-2.3	-2.4	1.7	2.0	2.2	-0.4	-0.3	-0.3
Sweden	-1.9	-2.3	-2.2	1.0	1.4	1.4	-1.0	-0.8	-0.9
UK	-0.9	-0.2	-0.7	0.7	0.1	0.2	-0.2	-0.2	-0.6
EU12	-0.9	-0.8	-1.1	0.6	0.6	0.8	-0.2	-0.2	-0.3
EU15	-1.7	-1.8	-1.9	1.1	1.3	1.2	-0.6	-0.6	-0.7
EU27	-1.5	-1.6	-1.7	1.0	1.1	1.1	-0.5	-0.5	-0.6

Source: Eurostat, EU-SILC and authors' calculations

As expected, the effect tends to be largest in the countries where the relative number of people living in workless households with income from employment is highest, though it is also affected by the distribution of the people concerned across households. The effect is particularly large in Denmark, where the proportion of people living in workless households is reduced by 5 percentage points in 2009 (to only 7%), and to a lesser extent in Italy where it is reduced by just 4 percentage points. It is also the case, however, in Ireland, where it is reduced by a similar amount but where the relative number of people involved is less than in either of the former two countries, reflecting the more dispersed distribution of these across households.

At the same time, since most of the people concerned worked only relatively little during the year (if perhaps more than is being assumed), the reduction in the proportion of people living in workless households is mirrored to a large extent by a an increase in the proportion living in households with low work intensity (defining this as for the Europe 2020 target) though not entirely workless. In 2009, therefore, the relative number concerned in the EU as a whole is increased by 1.1 percentage points (from 1.7% to 2.8%), a significant rise in proportionate terms. Again the increase is larger in the EU15 than the EU12 and largest of all in Denmark (by 3.4 percentage points).

Nevertheless, despite the shift from workless to low work intensity households, it is still the case that the proportion of those under 65 living in very low work intensity household, including those living in workless ones, is reduced if an adjustment is made for those with income from employment in the latter. Across the EU as a whole, the reduction is small at 0.6 of a percentage point in 2009 – and similarly small in 2008 and 2007 – but it is a much as 1.6 percentage points in Denmark and almost 2 percentage points in Italy. In Ireland, the reduction is even larger, amounting to 2.3 percentage points, and, moreover, the increase between 2007 and 2008 in the overall proportion living in such households is moderated significantly from a rise of almost 10 percentage points to one of just over 6 percentage points.

Clearly, the fact that the indicator chosen as part of the Europe 2020 poverty target is one relating to low work intensity households rather than workless households reduces the importance of some of those working relatively little being counted as not working at all, which reinforces the case for using low work intensity rather than zero as the indicator. As is evident from the above, however, it does not eliminate the problem entirely, especially in some countries. The importance could be reduced further, it should be noted, if the threshold for defining low (or very low) work intensity were raised from 0.2 to 0.3 as suggested above, since this would capture an even larger proportion of those being shifted from workless households to low work intensity ones.

This is not to argue that such a change should be made given the role which the indicator is playing, but it is to argue that there should be some more detailed examination of those countries in which income from employment in workless households is significant, especially Denmark and Italy, and in which unrecorded work (so far as the data are concerned) appears to have a material effect on the value of the indicator.

6.1 COMPARISON OF EU-SILC AND LFS DATA ON WORK INTENSITY

As noted at the outset, the calculation of those living in low work intensity households is based on the EU-SILC, as is the case of the other two indicators included as part of the Europe 2020 poverty target. Unlike these other indicators, however, an independent source of data exists at EU level which can potentially be used to assess the reliability of the indicator, at least to some extent. This is the European Labour Force Survey (LFS), which contains details of the employment situation of household members, if not throughout the year then at the time of the survey. Indeed, the LFS has been used since 2001 as the basis for an EU labour market n indicator of the relative number of men

and women living in jobless households – i.e. those with zero work intensity. Here the same data are extended to cover those living in low work intensity households, defined as having a work intensity of 0.25 or less, typically because there is only one person in a couple household in employment and they work part-time. It should be emphasised that the purpose is not to create yet another indicator but to use the LFS both as a check on the EU-SILC and, as explained below, a means of estimating developments in work intensity well in advance of the EU-SILC data becoming available.

The LFS data can, therefore, be used to estimate the work intensity of households at the time the survey was conducted and the results can be compared with those calculated from the EU-SILC on the same basis – i.e. at the time of interview. Like the EU-SILC, therefore, LFS interviews are spread across the year and the annual data derived from these represent an average situation over the year. Such a comparison provides a check on the reliability of the EU-SILC data since the size of the sample questioned by the LFS is several times larger than that covered by the EU-SILC.

The further question considered is how far the situation at the time of the EU-SILC survey provides a reasonable indication of the situation over the course of the preceding year. If it does so and if the LFS and EU-SILC give similar results for the situation at the time of the survey, then it opens up the possibility of using the LFS rather than the EU-SILC to monitor the proportion of people living in low work intensity households. More precisely, it implies that the LFS could be used not necessarily to replace the EU-SILC as the basis of the indicator but as a means of estimating the relative number of low work intensity households well in advance of the EU-SILC data becoming available. Whereas, therefore, the EU-SILC is subject to a lag of at least 18 months between the time of the survey and the time of data becoming available and a lag of well over two years between the year to which the data relate and them becoming available.

Such a lengthy delay – which equally applies to the risk of poverty indicator – hinders the possibility of taking timely policy action if the target looks like being missed. It, accordingly, lends importance to developing the means of monitoring development with regard to household work intensity – and indeed the risk of poverty – in a more timely way[13]. The LFS household data, which are usually available within a year (e.g. in mid-2013 for the situation in 2012), potentially provide such a means.

To take the first issue first, a comparison between the EU-SILC and LFS as measures of work intensity is carried out here in terms of the relative number of those of working age living in low work intensity households rather than all those under 65 because it is difficult to calculate the latter from the LFS data. It should also be noted that the definition of low work intensity is slightly different than in the case of the conventional indicator described above for ease of calculation in respect of the LFS. In particular, no breakdown is made of the hours worked by those employed part-time, so that all part-time working is treated as half full-time. Accordingly, low work intensity households are defined as those with values of 0.25 or less (equivalent to one person working part-time in a couple household) rather than less than 0.20. In addition, working-age is defined as 15-64 in the case of the LFS and 16-64 in the case of the EU-SILC at the time of the survey, which is likely to mean that the proportion calculated as living in low work intensity households is larger in the former than the latter, but only marginally. In both cases, student households are excluded.

In the EU as a whole, according to the EU-SILC at the time of the survey, just over 17% of those of working age lived in low work intensity households in 2009 as compared with just over 18% according to the LFS (Table 8). The proportion is larger according to the LFS than the EU-SILC in 17 of the 25 countries for which the former data are available, though the difference varies between

[13] This, of course, assume that the Europe 2020 targets are real policy objectives rather than simply aspirations, in the sense that Governments across the EU, at national as well as EU level, will adopt suitable policy measures to try ensure that they are met.

countries. It is wider for the EU12 countries taken as a whole than for the EU15, though this is not uniformly the case for individual countries. The largest difference, therefore, is for Ireland, at almost 9 percentage points – and in this case the LFS data show a smaller proportion living in low work intensity households than the EU-SILC – while for a number of EU12 countries, such as Slovenia and Latvia, the difference is very small.

TABLE 8 PROPORTION OF THOSE OF WORKING AGE LIVING IN LOW WORK INTENSITY HOUSEHOLDS ACCORDING TO DIFFERENT SOURCES (% AND PERCENTAGE POINT CHANGE)

	2009			Change 2007-2009		
	EU-SILC full*	EU-SILC current*	LFS current*	EU-SILC full	EU-SILC current	LFS current
Belgium	17.5	22.0	22.3	1.4	-0.8	1.2
Bulgaria	11.0	12.7	16.4	-0.7	-8.7	-0.1
Czech Republic	10.9	12.4	12.9	-0.9	-2.5	0.7
Denmark	13.9	17.0		1.2	-0.4	
Germany	14.7	18.0	16.7	-1.6	-2.0	-0.7
Estonia	11.8	13.6	15.5	3.9	3.3	5.5
Ireland	27.0	29.9	21.3	11.0	11.0	7.7
Greece	11.3	13.6	15.4	0.3	-0.8	1.0
Spain	13.0	16.6	19.8	4.2	3.3	6.7
France	15.2	20.1	20.1	1.0	-1.1	1.2
Italy	14.6	18.8	20.1	0.6	0.0	1.9
Cyprus	7.5	9.4	10.1	1.1	0.4	1.4
Latvia	14.7	16.6	16.8	7.3	5.3	5.9
Lithuania	12.0	14.6	17.3	4.0	3.3	4.8
Luxembourg	9.2	14.4	13.6	0.8	2.1	-0.8
Hungary	17.3	18.9	20.9	0.4	-2.0	2.1
Malta	12.9	15.2	17.7			
Netherlands	12.3	17.0	17.0	-0.1	-0.8	-0.6
Austria	12.3	17.9	16.2	0.2	-1.7	1.1
Poland	11.6	16.5	18.0	-0.5	-3.6	-1.2
Portugal	12.0	13.5	12.9	2.5	0.3	1.2
Romania	10.3	15.9	19.6	-1.0	-2.5	1.3
Slovenia	11.1	13.3	13.3	0.3	-2.5	1.1
Slovakia	11.6	12.0	14.6	2.5	-1.6	0.3
Finland	13.0	17.4	16.4	2.1	-0.7	1.1
Sweden	8.6	13.7	16.0	0.9	1.9	
UK	16.8	17.1	19.4	2.2	0.9	1.1
EU12	11.8	15.4	17.6	0.0	-2.7	0.5
EU15	14.5	18.0	18.6	1.1	-0.2	1.5
EU27	14.0	17.4	18.4	0.9	-0.7	1.3

*"EU-SILC current" and "EU-LFS current" refer to household work intensity calculated according to the employment status of individuals at the time of the survey. "EU-SILC full" refers to household work intensity calculated on the basis of the employment status of individuals each month during the income reference year

Note: No EU-SILC data for MT in 2007, no EU-LFS data for DK and SE in 2007

Source: Eurostat, EU-SILC and Labour Force Survey and authors' calculations

This comparison suggests that there might be a question-mark over the EU-SILC data in this regard in a number of countries given that the LFS is likely to be a more reliable data source. This is particularly so in terms of levels of low work intensity in Bulgaria, Spain, Lithuania, Romania, Sweden and the UK.

Nevertheless, despite these differences, there is a reasonably close relationship between at least the relative sizes of the two proportions (the correlation co-efficient is 0.79 – Table 9). This is also the case for the two previous years when the relationship was slightly closer (for 2008, the correlation coefficient between the two is 0.84, for 2007, 0.86) as well as for 2010, when it was less close (0.74). Between 2007 and 2010, therefore, as the proportion living in low work intensity households rose, there was a small decline in the closeness of the relationship.

At the same time, the relationship between the changes shown over time in the measure according to the two data sources is also reasonably close, though less so between adjacent years than over longer periods (between 2008 and 2010, for example, the correlation coefficient between the two measures is 0.85 – see Table 9). In sum, therefore, while there are differences between the EU-SILC and the LFS as regards the measure of the relative number of people living in low work intensity households, which are relatively large for some countries, the two give a fairly similar picture overall of the situation across the EU as well as of the changes which have occurred over recent years in the majority of countries (though for some there are large differences).

To examine the second issue, the proportion of people living in low work intensity households according to the EU-SILC at the time of the survey can be compared with the actual indicator used – or rather with the slightly modified one described above – which measures the situation over the course of the year on the basis of monthly information. It should be noted that this is carried out here in terms of the relative number of those of working age (18-64 as regards the indicator based on monthly data, 16-64 for that calculated at the time of the survey) living in such households rather than all those under 65. The slight difference in the definition of low work intensity referred to above should also be noted. These differences of themselves tend to increase the proportion estimated to be living in low work intensity households according to the EU-SILC at the time of the survey as compared with the EU-SILC data for the full year.

TABLE 9-CORRELATION COEFFICIENTS BETWEEN MEASURES OF LOW WORK INTENSITY CALCULATED FROM DIFFERENT DATA SOURCES

	EU-SILC full	EU-SILC current
2009		
EU-SILC current	0.916	
LFS current	0.708	0.785
2010		
LFS current		0.740
Change 2007-2009		
EU-SILC current	0.887	
LFS current	0.856	0.794
Change 2008-2010		
LFS current		0.849
Change 2007-2010		
LFS current		0.826

Source EU-SILC and Labour Force Survey and authors' calculations

In practice, the proportion does indeed tend to be larger according to the former than the latter, though the difference is larger than can be explained by the difference in definition alone. Rather, it is more a reflection of the fact that some of those who were unemployed or inactive at the time of

the survey were employed in some months during the year. While it is also the case that some of the employed at the time of the survey were unemployed or inactive in some months during the year, the number who were out of work for long enough to increase the proportion living in low work intensity households was relatively small. In the EU as a whole, therefore, according to the EU-SILC at the time of the survey, just over 17% of those aged 18-64 lived in low work intensity households in 2009 as compared with 14% according to the indicator (Table 8 above).

For all countries, the indicator based on monthly data shows a smaller proportion living in low work intensity households, though the difference varies between countries – it is particularly large in Austria and Romania for 2009 (around 5.5 percentage points) and small in Slovakia and the UK (less than 0.5 of a percentage point). However, again in relative terms, the relationship between the proportion of those living in low work intensity households measured over the course of the year and at the time of the survey is reasonably close (the correlation coefficient between the two is 0.92 for 2009, though lower in earlier years – 0.79 in 2008 and 0.86 in 2007).

This suggests that while the measure of low work intensity at the time of the survey is higher than for the year as a whole in all countries, the difference is relatively uniform, implying that it gives some guide to the value of the indicator when data become available for the full year. In other words, the proportion measured as living in low work intensity households at the time of the 2010 survey should give a reasonable indication of the proportion measured by the indicator over the course of 2010 on the basis of the 2011 survey.

Moreover, since there is also a reasonably close relationship between the measure of work intensity at the time of the survey calculated on the basis of LFS data and the EU-SILC, it is possible to go one step further and use the LFS to give a guide to the proportion living in low work intensity households according to the conventional indicator once it becomes available. Although the relationship between the two measures is less close than between the two EU-SILC measures (the correlation coefficient is 0.71 for 2009) and shows significant differences for some countries, it is closer in respect of changes over time than for levels in a particular year. Over the period 2007 to 2009, therefore, the relationship between the change in the LFS-based measure of the proportion living in low work intensity households and the change shown by the conventional indicator is almost as close as between the change in the EU-SILC-based measure of the situation at the time of the survey and the latter (the correlation coefficient is 0.87 as against 0.89).

While there are a few countries for which the LFS-based measure and the conventional indicator show differences in the direction of change – only three over the period in question, the Czech Republic, Luxembourg and Romania – the absolute size of the change shown by both sources is small. For most countries, the changes shown are broadly similar, suggesting that it is possible to use the LFS to give an indication of the change in the relative number living in low work intensity households which is likely to occur over a period of time[14].

For example, the change between 2008 (before the crisis took hold in most countries) and 2012 indicated by the LFS household data (which should become available in July 2013) should give a reasonable guide for most countries of the change in the proportion living in such households according to the indicator, once the data become available to measure this. (In practice, the data will not become available for internal Eurostat use until towards the end of 2014 and the microdata will not be published for researchers to use until Spring of 2015, almost two years later.)

[14] The LFS household data can also be used to forecast the risk of poverty on the basis of work intensity since there is a reasonably close relationship between the work intensity of a household and the risk of poverty of its members, but this is another story (see T. Ward and E, Ozdemir (2012), and T. Ward and E. Ozdemir (2011).

6.2 HOUSEHOLDS WITH PERSISTENTLY LOW WORK INTENSITY

In the same way as for the risk of poverty, it is possible to identify and examine the households – and the people living in them – with persistently low work intensity over a number of years on the basis of the EU-SILC longitudinal data[15]. As in the case of the persistent risk of poverty, these data can be used to give an indication of the extent to which households tend to move in and out of low work intensity and the apparent ease or difficulty of doing so. If, therefore, unemployment or working only relatively short hours is typically a temporary state of affairs, the persistent rate of low work intensity should be low in relation to the rate in any given year. If it is not, then the persistent rate will be high in relation to the latter. As also in the case of the risk of poverty, the persistence of low work intensity is arguably at least as relevant for policy as the relative number of people living in low work intensity households in a particular year, if not more so.

The analysis is carried out for the four years 2006 to 2009 (i.e. the 2007- 2010 survey years) for which the longitudinal data are available. Since people age over time, the calculations relate to those aged 0-61 at the beginning of the period, though working-age is defined consistently as 18-64 in each of the years. Low work intensity is defined as above, as less than 0.2, so, in line with the definition of the persistent risk of poverty, households with persistent low work intensity are those in which the value is less than this in the survey year (in this case 2009) and at least two of the three previous years. In the same way as for the persistent risk of poverty too, however, data are not available to calculate the indicator for a number of Member States – specifically, Denmark, Germany, Ireland, the Netherlands, Finland, Sweden, Cyprus, Malta and Slovakia.

On average across the EU, those living in households with persistently low work intensity in 2009 amounted to 8% of the population aged 0-61 in 2006, the proportion being slightly larger in the EU15 than in the EU12 (Table 10). The proportion varied from almost 12% in Belgium and the UK, much larger than anywhere else in the EU, to under 5% in Spain, Luxembourg and Estonia and under 4% in Latvia.

This proportion also varied markedly in relation to the relative number in low work intensity households in 2009 (i.e. in the single year), which averaged 65% across the EU as a whole - i.e. 65% of those in low work intensity households in this year were persistently living in such households – and less in this case in the EU15 than in the EU12. Again the figures were highest in Belgium (80%, implying that 4 out of every 5 people in low work intensity households were persistently so), the UK (75%) and Poland (74%). In these three countries, therefore, a relatively large number of people in 2009 had remained for a number of years in households where no-one was working or, if they were, not very much. This, accordingly, suggests that it was comparatively difficult in these three countries, or at least in 2009 and the preceding few years, for people in low work intensity households to find employment.

By contrast, the figure was lowest in Spain (41%) and Latvia (34.5%), not necessarily indicating a relatively high rate of turnover of those living in low work intensity households but reflecting the rapid increase in unemployment in 2008 and 2009, so that many of the households with low work intensity in 2009 were not so in the years before.

On average across the EU, around 17% of people aged under 63 in 2006 experienced at least one year of living in a low work intensity household in the four years 2006-2009, the proportion ranging from 23% in Bulgaria and 21% in Belgium and Hungary to 12% in Estonia and Romania and only 11%

[15] Specifically, on the basis of data on main activity during each month of the preceding year.

in Luxembourg. Of those that experienced at least one year of living in such a household, 70%, on average, had at least two years' experience and in Belgium, France, the UK, Hungary and Slovenia, over 75%.

TABLE 10 PROPORTION OF THOSE AGED UNDER 65 LIVING IN LOW WORK INTENSITY HOUSEHOLDS BY NUMBER OF YEARS, 2006-2009 (%)

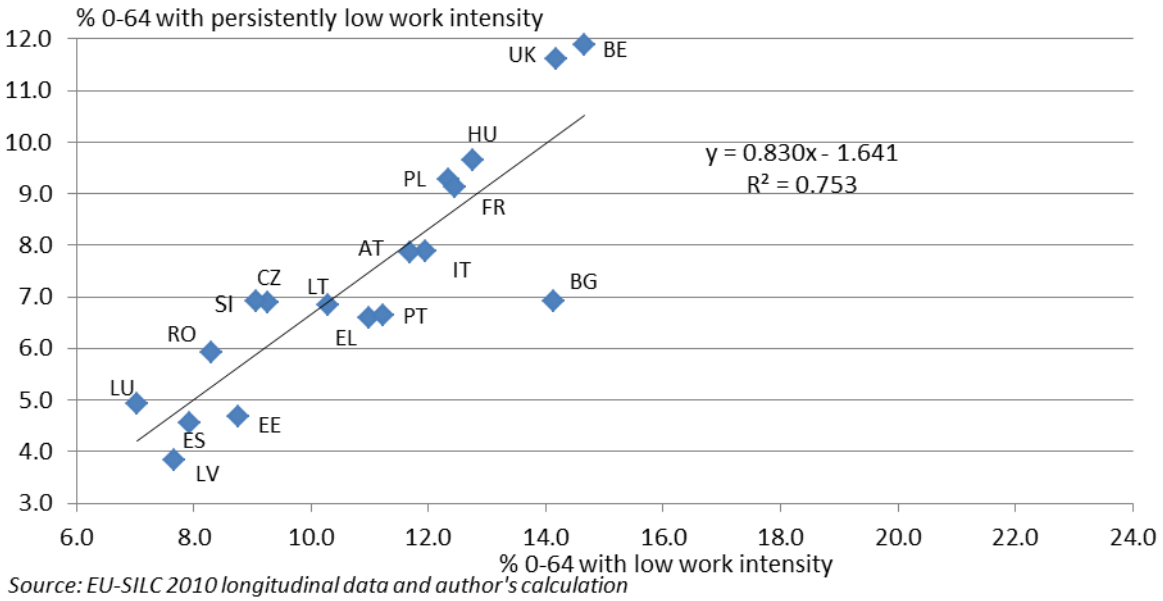
	Number of years with low intensity					Persistently low in 2009	Persistent as % low in 2009
	0	1	2	3	4		
Belgium	79.4	3.9	2.9	3.8	10.0	11.9	79.7
Bulgaria	77.0	11.8	4.1	3.2	4.0	6.9	69.0
Czech Republic	85.6	3.7	3.3	2.8	4.7	6.9	69.2
Estonia	88.0	5.6	1.7	0.6	4.0	4.7	46.5
Greece	85.3	5.9	2.1	1.7	4.9	6.6	64.7
Spain	85.5	6.2	3.1	2.6	2.7	4.6	41.1
France	82.1	4.5	3.5	3.4	6.5	9.3	66.4
Italy	82.9	5.8	3.0	2.2	6.0	7.9	66.4
Latvia	85.0	7.5	3.4	1.4	2.7	3.8	34.5
Lithuania	85.3	4.9	2.4	2.1	5.2	6.8	57.1
Luxembourg	88.8	3.4	2.6	1.8	3.5	4.9	55.6
Hungary	79.4	5.0	4.7	3.9	7.0	9.6	65.7
Austria	84.0	5.2	2.5	2.2	6.0	7.9	66.4
Poland	83.8	4.3	2.2	2.0	7.7	9.1	74.0
Portugal	82.8	7.0	3.6	2.9	3.8	6.7	51.7
Romania	88.1	3.4	2.4	2.3	3.8	5.9	71.2
Slovenia	87.2	3.0	1.9	2.1	5.7	6.9	72.2
UK	81.1	3.4	3.3	3.0	9.2	11.6	74.7
EU12	84.3	4.8	2.8	2.4	5.6	7.6	69.3
EU15	82.9	5.1	3.1	2.8	6.1	8.3	64.1
EU27	83.3	5.0	3.0	2.7	6.0	8.1	65.4

Note: No data for DK, DE, CY. MT, NL, SK, FI and SE; persistently low is defined as low work intensity in 2009 and in two of the three previous years

Source: Eurostat, EU-SILC longitudinal data and authors' calculations

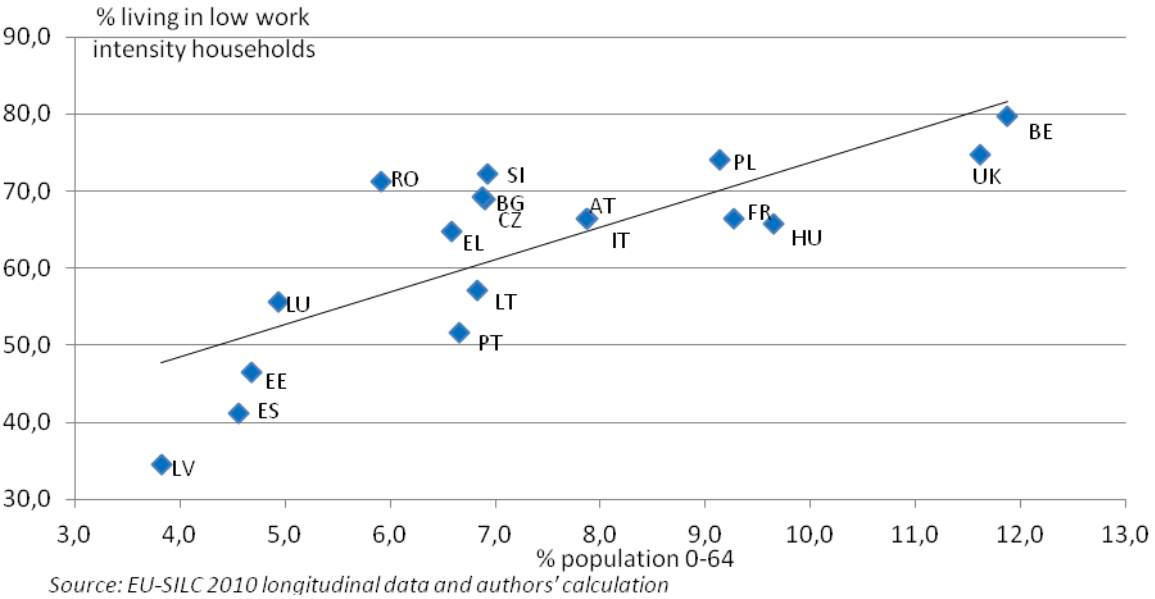
There is some relationship between the proportion living in households with low work intensity and those living in households with persistently low work intensity. In countries where the former is large, the latter tends also to be large (Figure 1) and disproportionately so (Figures 1 and 2). In other words, the larger the proportion of people living in households with low work intensity, the larger the proportion among these living in households with persistently low work intensity. This implies that low work intensity is a particularly intransigent problem in countries where the number of people affected is relatively large, that households with low work intensity tend to remain so.

FIGURE 1 RELATIONSHIP BETWEEN THOSE AGED 0-64 LIVING IN HOUSEHOLDS WITH LOW WORK INTENSITY AND THOSE LIVING IN HOUSEHOLDS WITH PERSISTENTLY LOW WORK INTENSITY IN 2009



Source: EU-SILC 2010 longitudinal data and author's calculation

FIGURE 2 RELATIONSHIP BETWEEN THOSE WITH PERSISTENTLY LOW WORK INTENSITY AS A PROPORTION OF POPULATION, 0-64 AND AS A PROPORTION OF THOSE WITH LOW WORK INTENSITY IN 2009



Source: EU-SILC 2010 longitudinal data and authors' calculation

Those living in households with persistently low work intensity have a far greater chance of being at risk of persistent poverty than others. On average, some 35% of those aged under 62 in 2006 living in such households were at persistent risk of poverty in 2009, well over 4 times the proportion of other people (Table 11). The proportion at persistent risk was particularly large in the EU12 countries, rising to over 60% in Bulgaria, close to 65% in Estonia and around two-thirds in Latvia, emphasising the major importance of employment in these countries for avoiding being at persistent poverty risk.

Although the proportion at persistent risk was much smaller in other countries, only in France and Luxembourg was it below a quarter and in 7 of the 17 countries for which data are available, at least 8 times greater than the proportion at persistent risk in households with higher levels of work intensity.

TABLE 11 THOSE AGED 0-61 IN 2006 AT PERSISTENT RISK OF POVERTY BY PERSISTENCE OF LOW HOUSEHOLD WORK INTENSITY, 2006-2009

	% at persistent risk of poverty			% with persistently low work intensity		
	Those with persistently low work intensity	Other	Ratio	Those at persistent risk of poverty	Other	Ratio
BE	38.6	4.1	9.4	55.9	7.9	7.0
BG	60.4	9.2	6.6	33.4	3.2	10.4
CZ	37.1	3.5	10.6	43.9	4.6	9.6
EE	64.1	5.4	11.9	37.0	1.8	20.2
EL	29.8	13.2	2.3	13.8	5.4	2.6
ES	37.7	10.7	3.5	14.4	3.2	4.5
FR	23.3	5.3	4.4	31.2	7.6	4.1
IT	37.6	7.9	4.8	28.9	5.5	5.3
LV	66.6	7.8	8.5	25.3	1.4	17.8
LT	28.4	6.2	4.6	25.3	5.3	4.8
LU	17.4	6.5	2.7	12.2	4.4	2.8
HU	26.6	5.1	5.2	35.9	7.6	4.7
AT	27.9	3.5	8.0	40.6	6.0	6.8
PL	36.7	8.8	4.2	29.6	6.5	4.5
PT	46.4	9.2	5.0	26.3	4.0	6.5
RO	33.6	13.7	2.5	13.4	4.6	2.9
SI	40.6	3.9	10.4	43.7	4.4	9.9
UK	38.9	4.1	9.5	55.7	7.7	7.2
EU12	37.0	8.8	4.2	25.7	5.4	4.8
EU15	33.5	7.2	4.7	29.7	6.1	4.9
EU27	34.5	7.6	4.5	28.5	5.9	4.9

Note: No data for Member States not included. EU totals are the sum of the figures for the countries shown

Source: Eurostat, EU-SILC and authors' calculations

By the same token, those at persistent risk of poverty are considerably more likely to be living in households with persistently low work intensity than those who are not at persistent risk – some 5 times more likely across the EU as a whole. There is, however, an interesting difference between countries. In the EU15 countries apart from those in the south together with Luxembourg, the proportion of those at persistent risk of poverty who live in households with persistently low work intensity is larger than the proportion of those with persistently low work intensity who are at persistent risk of poverty. In most of the EU12 countries, the reverse is the case. The implication is that in the EU15 countries concerned persistently low work intensity is a major cause of being at persistent risk of poverty, more so than in the EU12 countries, but that having persistently low work intensity is less likely to mean having income persistently below the at risk of poverty line. This might reflect the importance of the income support provided by the social security system in these countries.

7 CONCLUDING POINTS

A number of points can be drawn from the above analysis:

- The way that the year to which the indicator of low work intensity is referred to, as in respect of the risk of poverty, tends to give rise to confusion and can lead to misinterpretation of the indicator. Ideally it should be changed to be the year for which the indicator is measured rather than the year when the survey was undertaken.
- It is more satisfactory in calculating the indicator to take account of young people in education and training, who are accordingly not available for work, on a month by month basis rather than according to their status at the time of the survey as is done at the moment.
- The definition of working age in the calculation of the indicator should be in line with that conventionally adopted and with that used for the Europe 2020 employment target, which means increasing the upper age limit from 59 to 64. This means that policies for postponing the age of retirement could help to achieve two Europe 2020 targets at the same time. The effect of raising the upper age limit to 64 would be to increase the proportion of those under 65 living in low work intensity households.
- Cases where data on employment status during the year are missing are not significant except for the UK, though even here the way that they are treated has only a minor effect on the value of the indicator.
- The relative high risk of poverty among those living in low work intensity households as compared with those in workless households is a compelling reason for defining the indicator to include the former as well as the latter. There is a case for increasing the threshold used to define low work intensity from 0.2 to 0.3 since it would encompass couple households in which only one person works and then only part-time. This is reinforced by the fact that the risk of poverty of those living in households with work intensity of between 0.2 and 0.3 is much the same or higher than those in workless households in many countries.
- The income for employment in workless households is significant in a number of countries reflecting the fact that the data on main activity each month does not capture all of those working during the year. Including the people concerned has much less of an effect on the indicator of low work intensity than it would on one of workless households, which reinforces the case of defining it in this way. Nevertheless, taking account of employment in workless households as currently defined materially affects the indicator of low work intensity in Denmark and Italy in particular and deserves more detailed investigation.
- The LFS is an alternative source of data on household work intensity; while it does not contain information on employment status during each month of the year, the measurement of work intensity at the time of the survey is similar to that measured on the same basis from the EU-SILC in most countries, though there are some for which differences are relatively large, raising a question-mark over the reliability of the EU-SILC as a measure of low work intensity. The similarity of changes over time in the indicator and an LFS-based one for the large majority of countries suggests the latter can be used to estimate changes in the

proportion of people living in low work intensity households well in advance of the EU-SILC data becoming available. This opens up the possibility of monitoring developments in work intensity on a much more timely basis, which would provide the information to take more timely policy action to help meet the Europe 2020 target.

- In the same way as for the risk of poverty, the indicator of low work intensity can be extended to identify those persistently living in such households, which is particularly relevant for targeting policy;. The relative numbers concerned vary markedly across the EU, in part reflecting the speed of the increase in unemployment over the crisis period; in all countries, those living in such households have a substantially higher persistent risk of poverty than others of working age, emphasising the link between employment and the avoidance of having persistently low income.

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ANNEX 1. SUPPLEMENTARY TABLES

TABLE A.1 PERCENTAGE POINT DIFFERENCE BETWEEN IN THE PROPORTION OF THOSE AGED 0-59 IN HOUSEHOLDS WITH LOW WORK INTENSITY CALCULATED BY EXCLUDING 'STUDENTS MONTHS' AND THAT CALCULATED BY EXCLUDING STUDENTS AT TIME OF THE SURVEY, 2006-2009

	2006	2007	2008	2009
Belgium	-0.1	-0.1	-0.2	-0.2
Bulgaria	-0.1	0.0	-0.1	-0.2
Czech Republic	-0.3	0.0	0.0	0.0
Denmark	-0.4	-0.2	-0.3	-0.3
Germany	-0.2	-0.3	-0.1	-0.1
Estonia	-0.1	-0.2	-0.1	-0.1
Ireland	-0.6	-0.2	0.2	0.0
Greece	0.0	0.0	0.0	-0.2
Spain	-0.2	-0.2	-0.1	-0.1
France	-0.3	-0.1	-0.1	-0.1
Italy	0.0	-0.1	-0.1	-0.1
Cyprus	0.0	-0.1	-0.1	0.0
Latvia	0.0	-0.1	-0.1	-0.1
Lithuania	-0.1	-0.2	-0.2	0.0
Luxembourg	0.0	-0.1	0.0	-0.1
Hungary	-0.2	0.0	-0.1	-0.1
Malta			-0.1	0.0
Netherlands	-0.4	-0.6	-0.6	-0.4
Austria	0.0	0.0	0.2	0.0
Poland	-0.1	-0.2	-0.2	-0.1
Portugal	-0.2	-0.2	-0.1	-0.1
Romania	0.0	-0.1	-0.2	0.0
Slovenia	0.0	-0.1	0.0	0.0
Slovakia	-0.1	0.0	-0.1	0.0
Finland	-0.1	-0.2	-0.2	-0.1
Sweden	-0.1	-0.1	-0.1	0.1
UK	0.0	0.0	0.0	0.0
EU12	-0.1	-0.1	-0.2	-0.1
EU15	-0.2	-0.2	-0.1	-0.1
EU27	-0.1	-0.2	-0.1	-0.1

Note: No data for MT in 2006 and 2007

'Student months' are the months during when those aged 18-59 report being in education or training

Source: Eurostat Eu-SILC and authors' calculations

TABLE A2. PROPORTION OF MISSING CASES IN FOR CALCULATION OF HOUSEHOLD WORK INTENSITY, 18-59 AND 18-64 AGE GROUPS, EU-SILC 2005-2010 (%)

	18-59						18-64					
	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010
Belgium	0.0	0.6	0.7	0.0	0.0	0.0	0.0	0.5	0.6	0.0	0.0	0.0
Bulgaria			0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0
Czech Republic	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denmark	0.9	1.4	1.3	0.7	1.0	2.6	1.0	1.4	1.3	0.7	0.9	2.5
Germany	0.0	0.0	0.7	1.0	0.0	0.0	0.0	0.0	0.7	0.9	0.0	0.0
Estonia	0.1	0.0	0.9	0.9	1.0	1.1	0.0	0.0	0.9	0.9	1.0	1.1
Ireland	1.1	0.3	2.5	1.8	1.7	0.0	1.1	0.3	2.4	1.7	1.7	0.0
Greece	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spain	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
France	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Italy	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cyprus	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Latvia	0.0	0.0	0.0	0.0	1.7	1.1	0.0	0.0	0.0	0.0	1.6	1.0
Lithuania	0.0	0.0	0.4	0.6	0.0	0.0	0.0	0.0	0.3	0.6	0.0	0.0
Luxembourg	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Hungary	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.4	0.0	0.1	0.0
Malta					0.0	0.0					0.0	0.0
Netherlands	1.0	1.3	0.6	0.8	0.5	0.4	0.9	1.2	0.5	0.8	0.5	0.4
Austria	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Poland	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0
Portugal	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Romania			0.0	0.0	0.0	0.0			0.0	0.0	0.0	0.0
Slovenia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slovakia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Finland	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Sweden	1.1	1.1	1.1	1.6	2.3	3.5	1.1	1.0	1.0	1.5	2.1	3.4
UK	0.0	0.0	0.0	14.4	23.1	13.1	0.0	0.0	0.0	13.7	22.3	12.8

Note: The years in this table relate to the years of the survey

Source, Eurostat, EU-SILC plus authors' calculations

ANNEX 2. CONFIDENCE INTERVALS FOR INDICATORS OF LOW HOUSEHOLD WORK INTENSITY

The figures referred to in this report for the proportion of people living in low work intensity households are based on surveys of a sample of households in each country and are, accordingly, subject to margins of error of varying size. These margins of error are examined here on the basis of the estimates of the indicator which fall within a 95% confidence interval of the point values shown in the various tables and referred to in the text. The sampling design variables (i.e. strata and primary sampling unit variables) in the EU-SILC user database necessary for these calculations were constructed by using a method devised by Goedemé (2010).

A2.1. Estimates of low work intensity in particular years

Table A.3 shows the upper and lower bounds of the estimates of the proportion of those aged 0-64 living in households with low work intensity, defined as of below 0.2, in the years 2005 to 2009, the two bounds being defined at the 95% confidence level (i.e. there is a 95% probability that the true figure for the proportion lies between these bounds). The EU totals for all 5 years exclude Bulgaria and Romania, for which data are not available for the years before 2006 and Malta, for which there are no data before 2008, in order to ensure that the figures are comparable over the period.

TABLE A1. LOWER AND UPPER BOUNDS OF THE ESTIMATES OF THE PROPORTION OF THOSE AGED 0-64 LIVING IN HOUSEHOLDS WITH WORK INTENSITY OF BELOW 0.2, 2005-2009

	2005		2006		2007		2008		2009	
BE	15.1	18.5	15.1	18.3	13.5	16.2	14.2	16.8	14.8	17.7
BG			16.4	20.2	8.6	11.7	7.5	9.8	8.4	10.8
CZ	10.3	12.6	10.2	12.3	9.4	11.1	8.2	9.7	8.7	10.3
DK	10.6	13.0	11.3	13.7	10.4	12.7	10.1	12.5	11.4	14.1
DE	16.5	18.1	13.7	15.1	13.8	15.2	12.6	14.1	12.6	14.0
EE	7.4	9.2	6.6	8.3	5.7	7.3	6.2	8.0	9.4	11.6
IE	12.3	15.2	12.7	16.7	12.9	17.2	22.0	27.2	23.7	28.4
EL	8.2	10.2	8.4	10.3	7.9	9.7	7.8	9.8	7.9	10.2
ES	7.4	8.7	6.9	8.1	6.6	7.8	7.6	9.1	10.4	11.9
FR	11.8	13.3	12.4	14.2	11.5	13.4	11.0	13.0	12.7	14.6
IT	11.7	13.0	11.2	12.5	10.9	12.3	10.0	11.2	11.7	13.1
CY	4.3	5.7	4.2	5.7	4.2	5.8	4.3	5.9	5.0	6.7
LV	7.6	9.8	6.3	8.6	5.7	7.3	6.8	8.5	11.8	14.6
LT	9.0	11.4	6.6	9.1	5.5	7.4	7.0	9.2	9.4	12.0
LU	6.9	9.1	6.3	8.5	5.8	8.2	7.5	9.9	7.1	9.0
HU	14.6	17.0	13.3	15.2	14.2	16.4	13.9	15.9	14.4	16.7
MT							10.6	12.9	10.4	12.6
NL	12.3	14.6	10.8	12.9	9.7	11.7	9.5	11.8	9.3	12.0
AT	10.1	12.1	10.3	12.2	9.6	11.6	9.1	11.1	9.8	11.8
PL	13.6	15.1	11.8	13.1	10.2	11.5	9.3	10.4	9.8	11.1
PT	6.9	8.8	7.5	9.7	6.6	8.8	7.4	9.6	8.9	11.6
RO			9.1	11.2	9.0	11.5	8.6	10.9	8.1	10.2
SI	8.8	9.9	9.1	10.6	8.7	10.1	7.5	9.8	9.1	10.6
SK	7.8	9.3	8.4	10.1	7.0	8.4	7.2	9.8	9.0	11.0
FI	10.7	12.5	10.4	12.0	9.1	10.6	9.9	11.5	11.1	12.7
SE	6.9	8.4	6.0	7.4	6.0	7.2	6.3	7.7	6.5	8.0
UK	14.6	16.6	13.9	16.1	12.4	15.1	15.7	18.7	14.7	17.5
EU12	12.5	13.4	11.2	12.0	10.2	11.0	9.6	10.3	10.6	11.4
EU15	12.9	13.6	12.1	12.8	11.5	12.1	11.6	12.3	12.7	13.3
EU27	12.9	13.5	12.1	12.6	11.3	11.9	11.4	11.9	12.4	13.0

Note: Lower and upper bounds relate to a confidence interval of 95% surrounding the point estimates

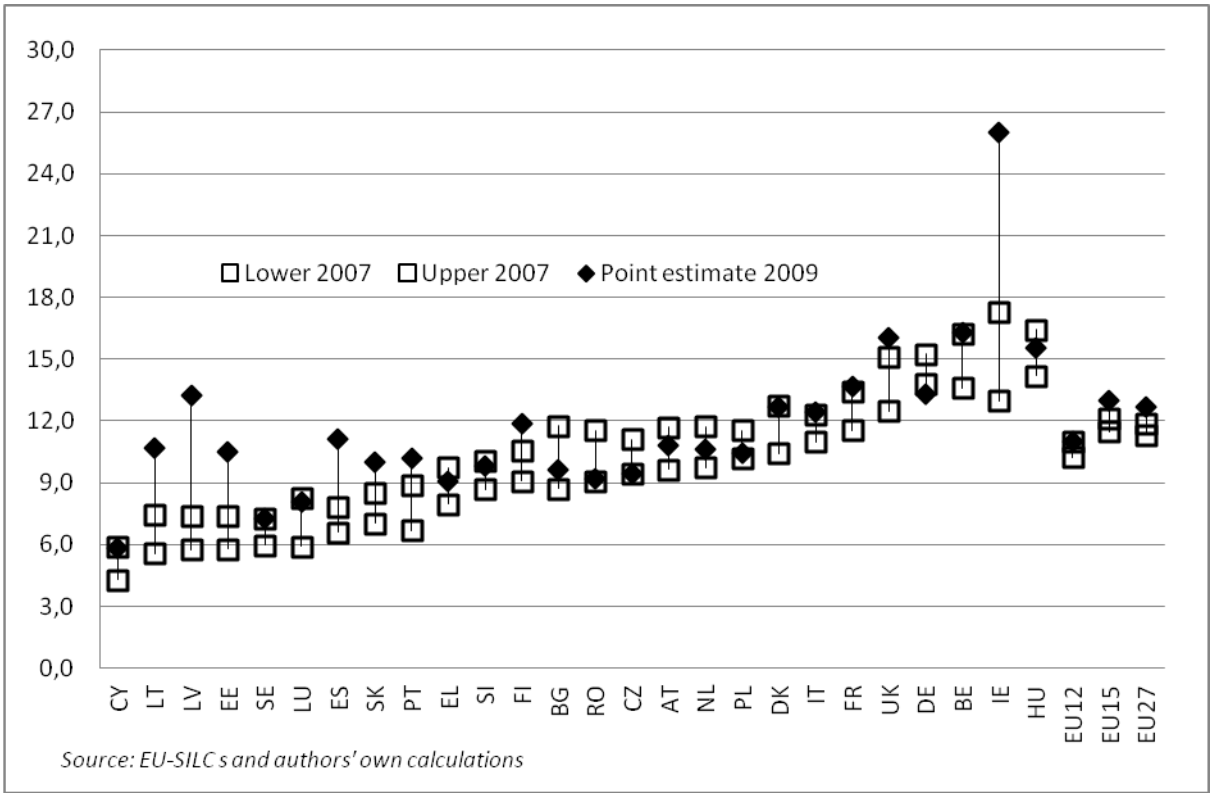
BG, MT and RO are excluded from the EU totals

Source: Eurostat, EU-SILC and authors' calculations

The confidence intervals between the upper and lower bounds vary between countries, in part reflecting the size of the sample of households covered, for 2009 averaging between 11-12% of the point estimate (i.e. 5-6% higher or lower than this) in Germany, Italy and Poland to 25-26% in Bulgaria, Greece, Cyprus, the Netherlands and Portugal.

The interpretation of the change over the period in the proportion of people living in households with low work intensity is also, of course, affected by the size of the confidence intervals. Figure A.1 shows the point estimate of the proportion living in such households in 2009 in relation to the upper and lower bounds (at the 95% confidence level) of the estimate in 2007. Only in 5 countries, the three Baltic States, Spain and Ireland does the point estimate for 2009 lie outside the range between the upper and lower bounds to a sufficient extent to give confidence that there was a significant increase (in statistical terms) in the proportion of people concerned between the two years. There was probably a small increase too in Slovakia and Finland,, but in Portugal and the UK, the confidence interval surrounding the point estimate in 2009 (not shown in the figure) overlaps with that for 2007, implying that the increase in the point estimate was not statistically significant. In all other countries, the point estimate for 2009 lies within the range of the confidence interval, so that it is not possible to conclude that there was a significant change between the two years.

FIGURE A1. LOWER AND UPPER BOUNDS OF 95% CONFIDENCE INTERVALS IN 2007 AND POINT ESTIMATES IN 2009 FOR THE PROPORTION OF THOSE AGED 0-64 LIVING IN HOUSEHOLDS WITH LOW HOUSEHOLD WORK INTENSITY (% OF POPULATION IN AGE GROUP).



A2.2. Longitudinal data estimates

The longitudinal component of the EU-SILC covers only 25% of the sample covered by the annual survey. Moreover, since the drop-out rate is significant, the number of households for which there are a complete set of data for all four years to which the longitudinal data apply is relatively small. The confidence intervals (measured again at the 95% level) surrounding the point estimates of those living in households with persistently low work intensity are accordingly relatively wide (Table A.3).

This limits the extent to which it is possible to conclude that those in one country have a larger proportion of people living In such households than those in another. In 2009, therefore, the proportions were significantly larger in Belgium, the UK, Hungary, France and Poland (the countries shaded in the top part of the table) than in Romania, Luxembourg, Estonia, Spain and Latvia (the countries shaded in the bottom part) but not in most cases than in the other countries included. (In Belgium, the proportion was significantly larger than in 6 of the other 8 countries, in the UK, larger than in three of them, but in Hungary, France and Poland, larger than in none of the 8.)

TABLE A2 PROPORTION OF THOSE AGED UNDER 65 LIVING IN HOUSEHOLDS WITH PERSISTENTLY LOW WORK INTENSITY, POINT ESTIMATES, LOWER AND UPPER BOUNDS AND RANGE BETWEEN THE TWO,2009

% population 0-64

	Point estimate	Lower bound	Upper bound	Range of estimate
Belgium	11.9	9.8	14.3	4.5
UK	11.6	9.1	14.7	5.5
Hungary	9.6	8.2	11.4	3.2
France	9.3	8.3	10.3	2.0
Poland	9.1	7.8	10.7	2.9
Italy	7.9	6.8	9.1	2.3
Austria	7.9	6.2	9.9	3.7
Slovenia	6.9	5.7	8.4	2.7
Bulgaria	6.9	5.0	9.5	4.5
Czech Republic	6.9	5.6	8.5	2.9
Lithuania	6.8	4.6	10.0	5.4
Portugal	6.7	4.8	9.1	4.3
Greece	6.6	5.1	8.5	3.4
Romania	5.9	4.8	7.3	2.5
Luxembourg	4.9	3.9	6.1	2.2
Estonia	4.7	3.4	6.4	3.0
Spain	4.6	3.7	5.6	2.0
Latvia	3.8	2.8	5.2	2.5
EU12	7.6	6.9	8.3	1.4
EU15	8.3	7.7	8.9	1.2
EU27	8.1	7.6	8.6	1.0

Note: No data for DK, DE, CY. MT, NL, SK, FI and SE. Persistently low is defined as low work intensity in 2009 and in two of previous 3 years

Source: Eurostat, EU-SILC longitudinal data and author's calculations

The relatively wide confidence intervals surrounding the measure of persistently low work intensity clearly restricts the use that can be made of it when comparing countries or assessing changes over time. Much the same conclusion, however, is likely to apply to the indicator of persistent poverty as well, which is used as an indicator of social developments in the EU.

ImProvE: Poverty Reduction in Europe. Social Policy and Innovation

Poverty Reduction in Europe: Social Policy and Innovation (ImPRovE) is an international research project that brings together ten outstanding research institutes and a broad network of researchers in a concerted effort to study poverty, social policy and social innovation in Europe. The ImPRovE project aims to improve the basis for evidence-based policy making in Europe, both in the short and in the long term. In the short term, this is done by carrying out research that is directly relevant for policymakers. At the same time however, ImPRovE invests in improving the long-term capacity for evidence-based policy making by upgrading the available research infrastructure, by combining both applied and fundamental research, and by optimising the information flow of research results to relevant policy makers and the civil society at large.

The two central questions driving the ImPRovE project are:

> How can social cohesion be achieved in Europe?
>
> How can social innovation complement, reinforce and modify macro-level policies and vice versa?

The project runs from March 2012 till February 2016 and receives EU research support to the amount of Euro 2.7 million under the 7th Framework Programme. The output of ImPRovE will include over 55 research papers, about 16 policy briefs and at least 3 scientific books. The ImPRovE Consortium will organise two international conferences (Spring 2014 and Winter 2015). In addition, ImPRovE will develop a new database of local projects of social innovation in Europe, cross-national comparable reference budgets for 6 countries (Belgium, Finland, Greece, Hungary, Italy and Spain) and will strongly expand the available policy scenarios in the European microsimulation model EUROMOD.

More detailed information is available on the website http://improve-research.eu.

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