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BEHIND AND BEYOND THE (HEADCOUNT) EMPLOYMENT RATE

by Andrea Brandolini* and Eliana Viviano*

Abstract

This paper argues that we need more general statistical indices to analyse European labour markets. First, the paper discusses some normative aspects implicit in the current definition of the employment rate, which is a fundamental policy target in the new Europe 2020 strategy. Second, it proposes a class of generalised indices based on work intensity, as approximated by the total annual hours of work relative to a benchmark value. Third, it derives household-level employment indices within a consistent framework. These indices provide a more nuanced picture of the European labour markets, which better reflects the diversity in the use of part-time and fixed-term jobs as well as other factors affecting the distribution of work across and within households.

JEL Classification: J21, E24.
Keywords: employment rate, jobless household rate, work intensity.

Contents

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1 Introduction[1]

Raising the level of employment is a central concern of European policy. The Europe 2020 Strategy sets that 75 per cent of the population aged 20-64 "should be employed" by 2020 (European Commission 2010). There are important reasons for pursuing higher work participation rates, in addition to fighting unemployment: to reduce under-utilisation of resources to raise growth potential; to counteract the consequences of an ageing population and ensure the sustainability of social security systems; to foster social inclusion and gender equality (Commission of the European Communities 1998: 4-5). Yet, targeting the employment rate has implications that have received surprisingly little attention in the public debate.

As currently defined, the employment rate is simply the proportion of working-age people who have been working for at least an hour in the reference week. It ignores how widely employment differs as regards working times and contract durations as well as other relevant dimensions such as job quality – all aspects that concur to determine the actual labour potential, current and future earnings, living standards and the risk of poverty. As such, the employment rate may be a statistic too crude to capture the development of labour markets in the European Union (EU). Moreover, it lacks a clear link with existing measures of (non)employment at the household level, which are important and increasingly studied indicators of social conditions. Problems are not only statistical, however: the neglect of job differences raises also concerns about normative foundations, as explained below.

In this paper, we propose a generalised measure of the employment rate, which deals with these concerns in a unitary framework. First, we embody a richer characterisation of the employment status by considering work intensity, as measured by actual hours of work, rather than the simple dichotomous variable employed/non-employed. More precisely, we define work intensity as the total hours worked in a year as a ratio to the average annual hours worked in a full-time full-year job. We then assign each employed person a weight proportional to his/her work intensity. The weight is a continuous variable that takes nil value for non-employed people, and gives a fuller description of people's work effort during a year, differentiating among part-time and full-time jobs and allowing for the growing fragmentation of work experiences. By averaging across all individuals, we obtain the "generalised employment rate".

Second, thanks to the previous modification, we are able to take into account a broader range of social values in the assessment of employment levels. In fact, the standard employment rate is an extreme case where all employed persons are equally weighted: hence, the social valuation of having a job is independent of the time spent at work. At the other extreme, with an index where weights are equal to work intensity, people working few hours receive low weight, while those working close or above the work potential receive higher weight: by being exactly equal to the quantity of work, this second index does not attribute any autonomous value to having a job. In this case,

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the rate is insensitive to the number of people employed, except for its impact on worked hours. Two otherwise identical economies, which show the same total number of hours of work but a different size of the employed pool, have the same value of the index – as it happens when one compares countries according to aggregate disposable income regardless of income distribution. If, however, having a job has a value by itself, since for instance it raises people self-esteem and social recognition, the situation where more people are employed and on average work less might be socially preferable to that where work is more concentrated. These considerations bring us to propose a flexible index that not only includes the standard employment rate and an index weighting people by their work intensity, but allows also for intermediate positions. We achieve this by introducing in the generalised index a parameter aimed at capturing the alternative normative views about employment.

Third, an appealing characteristic of the indicator of work intensity is that it can be easily aggregated across households, which is important given the growing attention for the pattern of employment at the family level. The share of persons living in households with low work intensity is one of three variables used to identify those "at risk of poverty or social exclusion" (AROPE) in the Europe 2020 strategy. The employment of household members is not only a fundamental dimension of social inclusion, but also a determinant of earning capacity and standard of living. In an early study, OECD (1998: 25) found that "variation across countries is much lower if non-employment is measured over households rather than individuals" and that "… the countries with the highest non-employment rates do not have the highest proportions of households without any work, as unemployed and inactive individuals tend to live in households with someone who has a job". The little association between household jobless rates and relative income poverty ratios observed by more recent studies seems to indicate that what matters is not whether a household member works, but how much all members work (de Beer 2007; Frazer and Marlier 2010; Ponthieux 2010; Cantillon 2011; de Graaf-Zijl and Nolan 2011; Vandenbroucke and Vleminckx 2011; Marx, Vandenbroucke and Verbist 2012). All these considerations highlight the importance of defining the employment rate for households as well as for individuals. We characterise classes of household employment indices, which are consistent by construction with the individual-level measures and provide a more nuanced view than the existing measures of household joblessness.

We apply this general framework to study employment rates at both the individual and household level in the European labour markets. As a comparison, in few cases, we also include statistics for the United States (US). When we account for work intensity, we find that the amount of labour supplied in Southern European countries is not so lower than in Northern European countries, where part time is more widespread. Differences further diminish when we look at the household level. Building on existing statistics and concepts, the main contribution of the paper is to stress the need for more flexible employment measures, to capture the heterogeneity of work characteristics across Europe.

The paper is organised as follows. In Section 2 we delve into the motivations of the paper. In Section 3 we characterise our generalised measures of the employment rate for both individuals and households. We provide a unitary framework, which allows us to examine the relationships between alternative measures, including some commonly used in the literature such as the jobless household rate. We then move to the empirical analysis. Constructing a reliable statistical measure of work intensity is demanding with available data. For the EU, we rely on the number of months worked in the year and the number of hours worked per week drawn from the EU Statistics on Income and Living

Conditions (EU-SILC). We use this source rather than the EU Labour Force Surveys (EU-LFS), the benchmark for labour market statistics, because the latter does not contain any information on the proportion of a year (months or weeks) spent in employment and does not allow us to study the distribution of work intensity across people and households.[2] For the US, we take the number of weeks worked in the year and the number of hours worked per week from the March supplement of the Current Population Survey (US-CPS). We discuss how to estimate work intensity in Section 4. In Section 5 we study the distribution of work intensity among individuals and households and we examine the consequences of assigning different values to the parameter that captures alternative normative views. In Sections 6 and 7 we discuss the estimates of the generalised employment rate in all EU countries for individuals and households, respectively. We also carry out some comparisons between the EU and the US. In Section 8 we draw the main conclusions and sketch future possible developments.

2 Normative bases of the employment rate

There is a difference between fighting unemployment and raising employment levels: the former means creating conditions by which those wanting to work can more easily find the job they are looking for; the latter means creating conditions by which a certain (minimal) proportion of people in working age actually work.[3] The first objective takes as given people's decision whether to work or not, even allowing for some uncertainty about the actual willingness to work revealed, for instance, by the variation in job search intensities or unemployment duration (e.g. Brandolini, Cipollone and Viviano 2006; Battistin, Rettore and Trivellato 2007). By contrast, the second objective implies influencing the decision of people to participate in the labour market in order to push more of them to work.

The presumption beneath targeting the employment rate is that (paid) employment is economically and socially preferable, for an able-bodied person, both to non-working and to unpaid work. The first ranking is likely to be widely shared, although a non-discriminatory concern for different conceptions of good life may call

[2] By its continuous structure, the EU-LFS employment rate captures, on average, the fragmentation of work experiences during the year, since the probability that an individual is classified as employed in the reference week correlates positively with the fraction of the year spent at work. However, we need to know the level of work intensity for each individual both to construct the household-level index and to examine different normative assumptions. On the other hand, the EU-LFS retrospective data on the labour condition in the previous year are insufficient to recover the information on infra-annual short employment spells. To appreciate the extent to which using the EU-SILC instead of the EU-LFS may affect results, in the Appendix we compare summary statistics computed from both sources. In the Appendix, we also provide detailed information on the definitions of the variables used in the paper. All EU-LFS statistics are drawn from the Eurostat website (Eurostat 2013a). Ponthieux (2010) reviews survey definitions of employment status and Lohmann (2011) compare the EU-SILC evidence with register data.

[3] The shift of emphasis from the "unemployment rate" toward the "employment rate" in European policies can be probably traced back to the "White Paper on growth, competitiveness and employment" prepared by Jacques Delors for the Commission of the European Communities in 1993. Although its focus was primarily on unemployment reduction and job creation, the White paper explicitly stated that policy should "raise levels of employment and not just lower levels of unemployment" (Commission of the European Communities 1993: 129). The employment rate became a central concern of the European Employment Strategy, launched at the Luxembourg Jobs Summit in 1997 and translated into specific targets in the Lisbon Agenda in 2000. See Goetschy (1999) for a (partial) historical account.

for some caution – e.g. see Van Parijs' (1991) argument for an unconditional basic income paid also to "surfers". The second ranking is possibly more contentious. The standard definition of the employment rate refers to a social arrangement that values certain activities only if they are carried out in the market, i.e. they contribute to gross domestic product. Thus, childcare counts for the employment rate when performed by a paid nanny, but not when performed by a grandparent, though the effects on child well-being need not be different.

Within the normative frame prioritising paid employment, some latitude still exists as to the definition of the employment rate. We have already pointed out that its current statistical formulation – where one hour of work during the reference week is sufficient to be classified as employed – is rather crude, particularly when compared with the attention paid to assessing the commitment of jobless people to look for work in the unemployment definition. A natural alternative is to differentiate across jobs based on work intensity as measured by actual hours of work.

This more nuanced approach features already in official European documents. The European Commission's (2012) review of *Employment and social developments in Europe 2012* reports information on both "full-time equivalent employment" and "low work intensity". The full-time equivalent employment rate assigns part-time workers a weight lower than one and equal to the ratio of the average number of hours worked in part-time jobs to the average number of hours worked in full-time jobs. It adjusts for part time, though not for temporary employment. However, the overall time worked during a year by somebody hired on a fixed-term basis may be lower than that worked by somebody hired on a permanent basis, since temporary jobs often last for short periods and may alternate with non-employment spells. Work intensity accounts also for this aspect by measuring the fraction of total work potential actually worked by an adult during the whole year. Taking 20 per cent as the critical threshold, this indicator is only used to separate households with low work intensity from remaining households in the derivation of the AROPE indicator in the Europe 2020 strategy. Neither the allowance for part time nor the notion of work intensity is used to adjust, or to qualify, the European employment target, which is framed as a pure headcount ratio.

In our view, the information conveyed by the standard headcount employment rate is partial, from both a descriptive and a normative standpoint. This claim is well illustrated by Figure 1, which plots various employment indicators for the EU-15 (i.e. the Union before the enlargement in 2004) and the US. In Europe, the employment rate of the population aged 15-64 went up until the Great Recession and then fell; from 1995 to 2012 it rose by 5.3 percentage points. During the same period, the average time actually worked per week in main and second jobs fell by more than two hours, reducing the growth of the full-time equivalent employment rate to only 2.9 points; the share of temporary employees in total salaried employment (in the age class 15-64) also increased, by 2.3 points. In the US, instead, both the employment rate and the average hours of work remained roughly constant until the Great Recession, and then declined. The drop in the employment rate was however larger than that in worked hours, suggesting that the recession affected mainly the extensive margin of labour. Something is clearly missing if we assess the evolution of European and US labour markets only in terms of the standard employment rate. A broader measure of employment, adjusted for work intensity, may capture the full variety of working time arrangements, and allow us to account for a wider range of value judgements on the intrinsic value of having a job.

3 The generalised employment rate

3.1 Individual-level employment rate

The standard employment rate *ER*, as defined by the International Labour Office (ILO), is the average over a population of size P of potential workers of the indicator e_i that takes value 1 if person i, with i=1,…,P, has worked for at least one hour during the reference week and 0 otherwise:

$$ER = \frac{1}{P}\sum_{i=1}^{P} e_i \ . \tag{1}$$

Potential workers for *ER* are usually taken to be all working-age individuals. The *ER* measures the "extensive" margin of labour, but ignores its "intensive" margin: people working just one hour per week are treated as people working 40 hours. In the same vein, those working for just one day during the reference period enter with unit weight in the computation of *ER* as those employed on a permanent basis.

We generalise expression (1) by proposing the following index:

$$GER(\alpha) = \frac{1}{P}\sum_{i=1}^{P} \omega_i^{\alpha} e_i, \quad 0 \le \alpha \le 1 \, . \tag{2}$$

The generalised employment rate $GER(\alpha)$ modifies the standard employment rate *ER* in two ways: first, it adjusts for differences in the intensive margin by weighting the individual indicator e_i by a measure of person i's work intensity ω_i;[4] second, it calibrates the extent of this adjustment by raising ω_i to the power of α, where α varies between 0 and 1. When $\alpha = 0$, $GER(0)$ equals the standard rate *ER*.[5] When $\alpha = 1$, $GER(1)$ fully takes into account differences in the intensive margin by weighting each individual by work intensity ω_i, which is defined as the ratio of the total number of hours worked by individual i during a year to the average number of hours worked by a full-time full-year employed.[6] Thus, the diversity between somebody working one hour in the reference week and somebody not working at all is maximum in the standard employment rate, but very small in the weighted rate $GER(1)$. As long as labour income correlates positively with the amount of work supplied by individuals, the weighted employment rate $GER(1)$ is more informative than the standard employment rate *ER* about the relationship between employment, earnings, and eventually the risk of poverty. However, $GER(1)$ is insensitive to the number of people employed, except for its impact on worked hours. To account for the fact that policy makers may care about how many people are in the labour market, independently of the hours supplied, we allow for α taking a value between 0 and 1. An intermediate value of α assigns people working less than the standard reference hours a weight lower than 1, but by proportionately less than the shortfall in worked hours would imply. This is shown in Figure 2, which plots the weight in $GER(\alpha)$ of an employed person (on the vertical axis) as a function of his or her work intensity (on the horizontal axis).

By construction, $GER(\alpha)$ is invariant to population replications, that is the value of the index would not change should a given population be identically reproduced. Moreover, it is exactly decomposable by population subgroups. When the population is

[4] This adjustment of the employment status by work intensity has some similarities with the adjustment of the unemployment status by the duration of unemployment spells studied by Shorrocks (2009a, 2009b). Nolen (2012) provides an axiomatic characterization of the standard unemployment index.

[5] For simplicity's sake, as ω_i can be equal to 0, we adopt the convention that 0 to the power of 0 equals 1.

[6] The choice of the time span for work intensity is arbitrary but inconsequential.

partitioned into K mutually exclusive subgroups and P_k is the number of individuals in subgroup k, with $P = \sum_{k=1}^{K} P_k$, expression (2) can be written as:

$$GER(\alpha) = \sum_{k=1}^{K} \frac{P_k}{P} \left[\frac{1}{P_k} \sum_{i=1}^{P_k} \omega_{ik}^{\alpha} e_i \right] = \sum_{k=1}^{K} \frac{P_k}{P} GER_k(\alpha), \quad (3)$$

where ω_{ik} is the work intensity of individual i in subgroup k and $GER_k(\alpha)$ is the rate for subgroup k.

3.2 Household-level employment rates

The decomposability property of $GER(\alpha)$ implies that the generalised employment rate for individuals is identical to the rate for households provided that each household is given a weight proportional to the number of its working-age components. Thus defined, the household-level indicator would not have any additional informative value. It is then more interesting to consider indices that either take the household as the unit of analysis or account also for non-employable household members. These alternatives correspond to two commonly used indicators of household work insufficiency: the jobless household rate and the proportion of persons living in households with low work intensity.

The jobless household rate (*JHR*) is defined as the fraction of households where no one works according to the one-hour-per-week criterion. It is conceptually equivalent to the non-employment rate (the complement to 1 of the employment rate) for persons. Like *ER*, *JHR* is insensitive to the number of hours worked by those employed; but it is also insensitive to how many household members work, provided that at least one is in employment. Thus, it does not signal any difference between a traditional male breadwinner household, a couple where one member chooses to work part time thanks to the intra-household sharing of resources, or a couple with two full-time earners. Despite these limits, the jobless household rate has been used to study the distribution of work across households (Gregg and Wadsworth 1996, 2008; Gregg, Scutella and Wadsworth 2010), the impact of rising unemployment on household joblessness during the Great Recession (Jenkins et al. 2013), and the link between household low work-intensity and poverty risk (Vandenbroucke and Diris 2014; Corluy and Vandenbroucke 2014).

The share of persons living in households with low work intensity (*LWIR*) is a component of the Europe 2020 AROPE indicator together with the shares of individuals living in severely materially deprived households or in low-income households. The work intensity of a household is the ratio of the total number of months worked during the year by all household members aged 18-59 (excluding students up to 24 years) to the total number of months that they could work; part-time employment is transformed to a full-time basis by using the number of hours usually worked. Unlike *ER* and *JHR*, *LWIR* therefore accounts for work intensity both by considering the number of months worked during the year and by adjusting for part-time. Besides, *LWIR* departs from *ER* by restricting the pool of potential workers to the narrower age class 18-59 years, instead of the age class 15-64 (16-64 in our estimates), and by excluding the young still in full-time education.

The treatment of household components who are supposedly not to be counted as potential workers, because either too young or already retired, is a crucial aspect in the definition of a measure of (non)employment at the household level (e.g. Atkinson et al. 2002; Brandolini 2002). It impinges on the definition of the reference population as well as of the weight attributed to each household in the overall indicator. For instance,

Gregg and Wadsworth (2008) focus on working-age households by excluding full-time students and all households with a head above statutory retirement age, and then count each household once in the estimation of *JHR*. The AROPE sub-indicator is instead computed for all persons younger than 60 years who live in households with at least a person aged 18-59 and who is not a student if younger than 24: thus, households composed only of children, of students aged less than 25 or people aged 60 or more are excluded from the calculation. In other words, *LWIR* assigns each eligible household a weight that is proportional to the number of components in the age class 0-59.

Following these hints, a class of household measures of employment can be derived by aggregating work intensities across individuals as follows. Let us denote by *i* a potential worker, identified in terms of age and other characteristics, by *f* a household, with *f*=1,…,*F*, and by P_f the number of potential workers in household *f*. The work intensity $\omega_f(\alpha)$ of household *f* is the mean work intensity of all potential workers living in the household, or the index $GER_k(\alpha)$ in decomposition (3), with *k*=*f*:

$$\omega_f(\alpha) = GER_f(\alpha) = \frac{1}{P_f}\sum_{i=1}^{P_f}\omega_{if}^{\alpha} e_{if} \ . \tag{4}$$

As for the individual index, a jobless household has $\omega_f(\alpha) = 0$.

It is useful to define the household employment function

$$g[\omega_f(\alpha) \mid z] = \begin{cases} 0 & \text{if } \omega_f(\alpha) \le z \\ 1 & \text{if } \omega_f(\alpha) > z \end{cases}, \tag{5}$$

where the threshold *z* indicates the level of work intensity below which household total work is reputed to be insufficient.

Using (5), the jobless household rate is:

$$JHR = 1 - \frac{1}{F}\sum_{f=1}^{F} g[\omega_f(0) \mid z = 0]. \tag{6}$$

The share of individuals living in households with low work intensity computed for the AROPE indicator is:

$$LWIR = 1 - \frac{1}{N}\sum_{f=1}^{F} N_f\, g[\omega_f(1) \mid z = 0.2], \tag{7}$$

where *N* is the total number of individuals in the reference population and N_f is the number of those who live in household *f*, with $N = \sum_{f=1}^{F} N_f$. This reference population includes all people younger than 60 years who live in a household with at least a potential worker: thus, $N_f \ge P_f$ and $N \ge P$. The comparison between (6) and (7) shows that *JHR* and *LWIR* do not differ only in the reference population and the threshold for work intensity *z*, but also in the normative basis as captured by the parameter α.

Our household generalised employment rate (*HGER*) does not make use of the function $g[\omega_f(\alpha) \mid z]$, but directly takes the average of work intensity $\omega_f(\alpha)$. We consider three formulations.

The first version mimics *JHR* by focusing on households as such and ignoring differences in their size and composition:

$$HGER1(\alpha) = \frac{1}{F}\sum_{f=1}^{F}\omega_f(\alpha) = \frac{1}{F}\sum_{f=1}^{F}\frac{1}{P_f}\sum_{i=1}^{P_f}\omega_{if}^{\alpha} e_{if} \ . \tag{8a}$$

Notice that *HGER*1(0) differs from 1–*JHR* as it differentiates across households with at least an employed person on the basis of the proportion of potential workers who have a job (i.e. it attributes each household *f* a weight equal not to 1, but to E_f / P_f, where E_f is the number of employed in household *f*).

The second version resembles *LWIR* in weighting each household by the number of components in the age class 0-59:

$$(8b) \qquad HGER2(\alpha) = \frac{1}{N}\sum_{f=1}^{F} N_f \omega_f(\alpha) = \frac{1}{N}\sum_{f=1}^{F} \frac{N_f}{P_f} \sum_{i=1}^{P_f} \omega_{if}^{\alpha} e_{if} \ .$$

As clear from (8a) and (8b), the two indicators only differ for the weighting of work intensities: while $HGER1(\alpha)$ treats each household equally, $HGER2(\alpha)$ attributes a higher weight to larger households.[7] If dependent children are relatively more concentrated in jobless or low-work-intensity households, the latter indicator will tend to fall short of the former, signalling a situation of the labour market more critical as regards the population living standards.

With either formulation, $\omega_f(\alpha)$ is equal to 1 both for a single adult and for a couple with dependent children where all adults work their full potential. This evaluation correctly captures the employment status of the two households, but may fail to recognise that in the second household the work of the two adults must also support the children, who by definition cannot work. We therefore suggest a third formulation of *HGER* where the household total work intensity $P_f \omega_f(\alpha)$ is divided across all members N_f, so that the valuation of the single adult is higher than that of the couple with children. In this case, it is appropriate to weight households proportionately to the number of their components N_f and, hence, to define the index

$$(8c) \qquad HGER3(\alpha) = \frac{1}{N}\sum_{f=1}^{F} N_f \left[\frac{P_f \omega_f(\alpha)}{N_f} \right] = \frac{1}{N}\sum_{f=1}^{F} \sum_{i=1}^{P_f} \omega_{if}^{\alpha} e_{if} = \frac{P}{N} GER(\alpha)$$

Expression (8c) shows that $HGER3(\alpha)$ is simply the total work intensity divided by the total reference population or, using (2), the individual generalised employment rate $GER(\alpha)$ scaled down by the factor P/N. This factor is the inverse of the dependency ratio defined as the number of persons in the reference population per each potential worker. Thus, $HGER3(\alpha)$ neatly combines the employment rate of potential workers with the information on the overall number of people that rely on their work. It is a potentially interesting decomposition, but given the close link between $HGER3(\alpha)$ and $GER(\alpha)$ we will focus below on $HGER1(\alpha)$ and $HGER2(\alpha)$ only. In practice, the choice between $HGER1(\alpha)$ and $HGER2(\alpha)$ depends on the purpose of the analysis. While the first index is more suitable to study the distribution of hours of work among households, the second one allows capturing the relationship between household work intensity and household size, as the index is lower if low work intensity is concentrated among larger households.

3.3 Decomposition of the generalised employment rate

Work intensity is the total number of hours worked during a year normalised by a benchmark value. If we define work effort as the number of weeks worked during the year times the average number of hours worked per week,[8] the generalised employment

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[7] As $HGER1(\alpha) = (1/N)\sum_{f=1}^{F} \overline{N} \omega_f(\alpha)$, where $\overline{N} = N/F$ is the per household average number of persons in the reference population, the difference between $HGER1(\alpha)$ and $HGER2(\alpha)$ reduces to weighting households by the average size in the former indicator and by the actual size in the latter indicator. Thus, the higher the variability of the household size, the larger the difference is between the two measures.

[8] The length of the reference periods, both the year and the week, can vary according to data availability and the purpose of the analysis.

rate can be broken down into the contribution of three factors: the number of people in employment, the average proportion of a year spent at work, and the average weekly working time. The first factor is the extensive margin, while the other two are the intensive margins of the employment rate.

More formally, for an individual *i*, we define ω_i as:

$$\omega_i = \mu_i \theta_i = \left(\frac{w_i}{52}\right)\left(\frac{h_i}{H}\right), \tag{9}$$

where $\mu_i = w_i / 52$ is the fraction of weeks w_i worked in the year, and $\theta_i = h_i / H$ is the average number of hours h_i worked by individual *i* per week as a ratio to a benchmark level *H*. By inserting (9) into (2), the generalised employment rate becomes:

$$GER(\alpha) = \frac{1}{P}\sum\nolimits_{i=1}^{P} \omega_i^{\alpha} e_i = \frac{1}{P}\sum\nolimits_{i=1}^{P} (\mu_i \theta_i)^{\alpha} e_i = \frac{1}{P}\sum\nolimits_{i=1}^{P} \left[\left(\frac{w_i}{52}\right)\left(\frac{h_i}{H}\right)\right]^{\alpha} e_i \,. \tag{10}$$

Note that $GER(\alpha)$ is homogenous of degree α in w_i and h_i, so that the generalised employment rate is multiplied by 2^{α} whenever hours of work double for all employed.[9] The household-level indices $HGER1(\alpha)$ and $HGER2(\alpha)$ are computed in a similar way.

Using (10), $GER(\alpha)$ can be decomposed as follows:

$$GER(\alpha) = ER + \frac{1}{P}\sum\nolimits_{i=1}^{P} (\mu_i^{\alpha} - 1) e_i + \frac{1}{P}\sum\nolimits_{i=1}^{P} (\theta_i^{\alpha} - 1) e_i + \frac{1}{P}\sum\nolimits_{i=1}^{P} (\mu_i^{\alpha} - 1)(\theta_i^{\alpha} - 1) e_i \,. \tag{11}$$

For $\alpha = 0$ work intensity does not matter and the measure reduces to the standard employment rate *ER*. For $\alpha > 0$, there are three further terms in the decomposition. The first is the "partial-year effect" arising from working less than the full year. If everybody was working throughout the year, μ_i would equal 1 and the term would vanish; as this is not the case for many workers, the term is negative and is subtracted from the headcount employment rate *ER*. This effect concerns many temporary workers, but also all those individuals who exit or enter the labour market during the year, such as retirees and students moving from school to work. The second term is the "non-standard-time effect" that captures how many hours the employed work less or more than the benchmark *H*. If everybody was working the standard number of weekly hours, θ_i would be identically equal to 1 and the term would disappear. It is positive for those working above the standard, but negative for all persons employed on a part-time basis. The more widespread part-time, the greater is the subtraction from *ER*. Lastly, the third term captures the "interaction" among the two components of work intensity. We may expect it to be positive, as relatively few people work more than standard time and have θ_i greater than 1; the higher its absolute value, the more those working below standard time also work less than 52 weeks. A positive interaction term means that the subtractions from *ER* due to the partial-year and non-standard-time work arrangements are partly offset by the fact that they often relate to the same workers.

We can decompose household-level indices along the same lines. By way of example, we focus here on the complement to 1 of $HGER1(\alpha)$, which is a measure of household non-employment conceptually comparable to the jobless household rate:

$$HGNER1(\alpha) = 1 - HGER1(\alpha) = 1 - \frac{1}{F}\sum\nolimits_{f=1}^{F} \frac{1}{P_f}\sum\nolimits_{i=1}^{P_f} \mu_{if}^{\alpha} \theta_{if}^{\alpha} e_{if} \,. \tag{12}$$

The household non-employment rate (12) can be decomposed as follows:

[9] As discussed below, the benchmark value *H* is constant, so that a uniform doubling of the working week across the population does not imply doubling *H* as well. Thus, the measured $GER(\alpha)$ grows for any positive value of α, signalling an increase in the workload of those employed.

$$
\begin{aligned}
HGNER1(\alpha) = & \frac{1}{F}\sum_{f=1}^{F}\left(\frac{P_f - E_f}{P_f}\right) \\
& + \frac{1}{F}\sum_{f=1}^{F}\frac{1}{P_f}\sum_{i=1}^{P_f}(1-\mu_{if}^{\alpha})e_{if} \\
& + \frac{1}{F}\sum_{f=1}^{F}\frac{1}{P_f}\sum_{i=1}^{P_f}(1-\theta_{if}^{\alpha})e_{if} \\
& + \frac{1}{F}\sum_{f=1}^{F}\frac{1}{P_f}\sum_{i=1}^{P_f}(1-\mu_{if}^{\alpha})(\theta_{if}^{\alpha}-1)e_{if}
\end{aligned}
\qquad (13)
$$

As before, the decomposition is uninteresting for $\alpha = 0$, as work intensity plays no role. For $\alpha > 0$, the terms in the decomposition have similar interpretations as in (11): in addition to the "non-employment effect", that is the share of potential workers who do not have a job, we find the partial-year effect, the non-standard-time effect, and the interaction effect.

4 Empirical estimation of work intensity and employment status

There are several ways of measuring work intensity ω_i in practice. As reference level, we could take the statutory or contractual working time, which is however unavailable for the self-employed, or some measure of hours worked. The latter can be those paid by the employer (for employees), those normally worked, or those actually worked. Further differences arise as to the treatment of holiday and sick leaves. Ideally, we would take hours actually worked, net of hours of absence, which measure both the personal effort and the input in the productive process. Taking paid hours would however capture earning capacity, which correlates more closely with individuals' economic conditions and poverty risk.

Theoretical considerations aside, the actual choice is constrained by data availability. Labour force and income surveys do not usually collect standardised data on annual hours of work. In the case of the US, the estimate is rather straightforward, as the US-CPS collects information on the total number of weeks worked, including paid vacations and paid sick leave, and the usual weekly working time in the year prior to the interview. The estimation is more complicated in European countries, as the EU-LFS lacks data on the weeks or months worked,[10] whereas the EU-SILC gathers information on the employment status in each month in the previous year, but not on the number of weeks worked in each month. We use the EU-SILC data and compute w_i by assuming that all employed persons are at work for the whole month, that is we take $m_i/12$, where m_i is the number of worked months, as a proxy of $\mu_i = w_i/52$. This may lead to overestimate the work intensity of temporary employees with a contract shorter than a month.[11] Lastly, we approximate h_i by the usual weekly working time at the time of the interview, since such a variable is not available for the previous year.[12]

[10] The retrospective information about the working status in the year preceding the interview does not allow estimating the length of small intra-annual employment spells.

[11] In the EU-SILC people working for at least two weeks are recorded as working for the whole month. Hence, work intensity is overstated for those who work two or more weeks, but less than the full month, whereas it is understated for those who work less than two weeks in a month.

[12] The EU-SILC also collects this information for those who are currently not working but who had been working in the previous year.

The last step to calculate (9) is fixing the benchmark level for weekly hours H. Country-specific values would reflect the legal and social norms prevailing in each country, but would make cross-national comparisons more difficult to interpret. It is preferable to keep the value of H constant across countries (and time). The total number of hours in a week (168) or some theoretical maximum time that a person could work without jeopardising health (say, 91 hours, or 13 for 7 days) could provide "natural" ceilings; the advantage of bounding θ_i below 1 is however offset by the little economic and social significance of these ceilings. The most interesting alternative is either to rely on legal norms or to infer H from the empirical distribution of h_i. The European Directive 2003/88/EC states that member states must ensure that laws or collective agreements limit the maximum average working time for each seven-day period, including overtime, to 48 hours (European Parliament and Council of the European Union 2003). Figure 3 shows the quartiles of the distribution of the length of the usual working week of employed working-age persons in European countries and the US in the period 2007-11. For employees the range of variation is fairly narrow around a median of 40 hours per week in the large majority of countries, while for the self-employed the inter-quartile variation is wider and the median values are often above 40 hours. We set H at 40 hours, which is the median value for the overall European distribution. Given our hypotheses, we are implicitly assuming that the benchmark annual hours worked by the standard person sum to 2,064 (=12×4.3×40). This is clearly an upward limit for the median employed, as it does not make any allowance for paid leaves for vacation, sickness, or other reasons. Any other fixed value would only change proportionately all estimates, leaving unaffected country rankings and relative ratios.

In the same vein, we can define the employment status e_i in various ways. First, we can use the standard one-hour-of-work in the reference week criterion adopted in the *ER*. Second, we can classify a person as employed in a year if he or she worked at least one month during that year. Third, we can take the self-reported employment condition. The EU-SILC allows us to adopt either of the last two criteria. The advantage of the self-reported status at the time of the interview is that also usual hours of work (for the employed) refer to the same period; the disadvantage is that work intensity is based on the months worked in the calendar year prior to the interview. Using the current status for e_i and the number of months worked in the previous year for ω_i would bring us to exclude from the employment rate in year t all individuals employed in t but not in t–1, and vice versa. To avoid this inconsistency, we define e_i on the basis of months worked in the year prior to the interview:

$$e_i = \begin{cases} 0 & \text{if } m_i = 0 \\ 1 & \text{if } m_i > 0 \end{cases}. \tag{14}$$

To ease notation, in the next sections we use *ER* to refer to the standard ILO-based headcount employment rate according to the "at-least-one-hour-per-week" criterion and *GER*(0) for the headcount ratio based on the "at-least-one-month-per-year" criterion. As discussed in Section 3, the two rates are conceptually similar, the only difference being the definition of the minimal requirements to measure the extensive margin during the reference period.

To sum up, we estimate the generalised employment rate in the EU-SILC as:

$$GER(\alpha) = \frac{1}{P}\sum\nolimits_{i=1}^{P} \omega_i^{\alpha} e_i = \frac{1}{P}\sum\nolimits_{i=1}^{P} (\mu_i \theta_i)^{\alpha} e_i = \frac{1}{P}\sum\nolimits_{i=1}^{P} \left[\left(\frac{m_i}{12}\right)\left(\frac{h_i}{40}\right)\right]^{\alpha} e_i , \tag{15}$$

where people who do not work have by definition $m_i = \omega_i = e_i = 0$. If all employed work exactly 40 hours throughout the whole year, ω_i equals 1 for all i's and $GER(\alpha)$

coincides with *ER* for all values of α; if they instead work on average more than 40 hours, ω_i exceeds 1 and *GER*(α) is higher than *ER*.

5 The distribution of work intensity and the value of α

The primary innovation of the generalised employment rate is the accounting for work intensity ω_i. Being the variable that allows us to discriminate among the employed persons, it is useful to begin looking at its distribution in the working-age population.[13] Its frequency distribution in Germany in 2010 is plotted in Figure 4. The height of each bar corresponds to the fraction of population with work intensity as indicated on the horizontal axis. The distribution is bimodal, with a first spike around 0 indicating the incidence of non-employment (or low employment), and a second spike around 1 indicating the share of standard-time workers (40 hours per week for the whole year). In Germany, 35 per cent of persons in the age class 16-64 were never in employment in 2010, about 28 per cent worked approximately the standard time, and 12 per cent worked more than this standard. The intensity-weighted employment rate *GER*(1), indicated by the vertical dashed line, is well below 1 and equal to 0.63.

Figure 5 compares the distribution of individual work intensities in Germany with those in the Netherlands, Italy, and Poland. These four countries are selected as representative of Northern, Southern, and Eastern Europe; also, for all four countries the sample size is large.[14] Relative to Germany, the Netherlands exhibits a much lower share of people working more than standard time, and conversely a higher incidence of people with work intensity below 1. The shapes of the distributions are fairly similar in Italy and in Germany, except for the higher mass around zero in Italy (higher non-employment rate). The distribution is instead far more polarized in Poland: both the shares of those who do not work and of those working full time throughout the year are much higher than in Germany.

At the household level, the bimodality of the distribution of work intensity is lessened by the combination of different employment patterns within the household. As shown in Figure 6 for Germany in 2010, in addition to the two spikes at 0 and 1, there is also some mass around 0.5, which is the work intensity that typically corresponds to couples, with or without dependent children, where only one adult works. This third mode is even more evident in Italy and Poland, whereas in the Netherlands a substantial proportion of households exhibits work intensity above 0.5 but below 1, which reflects a high share of second earners working part time (Figure 7).

In Figure 8, we compare the inequality in the household distribution of work intensity with that in the personal distribution of equivalised disposable income in the EU countries and the US in 2010. Countries are ranked in ascending order, from left to right, by the level of income inequality, as measured by the Gini index; the US exhibits the highest value, although the imperfect comparability in the definition of disposable income calls for some caution. Work-intensity inequality differs widely: it is generally lower in Nordic countries and higher in (some) Southern and Eastern countries, ranging from 27 per cent in the Netherlands to around 41 per cent in Greece; it is relatively high also in the US. The correlation between the Gini indices of the two distributions is quite strong, as shown by a Pearson coefficient equal to 0.65, but some of the highest levels

[13] We focus on the age group 16-64, though the Europe 2020 target is set for those aged 20-64, as the age group 15-64 is still the main reference for policy analysis (e.g. European Commission 2012).
[14] However, we should bear in mind that many values for weekly hours of work are missing in Poland.

of work-intensity inequality are found in countries, such as Austria and Belgium, where the income distribution is least unequal.

In brief, the evidence on the distribution of work intensity, both at the individual and household level, neatly confirms that treating all units alike, as done by standard measures, fails to capture a wide variety of employment patterns. The overall time spent in the labour market during a year may considerably differ across the employed, and even more so across the households to which they belong.

The second innovation that we have introduced in this paper is the parameter α capturing different normative evaluations of having a job. As noted, the standard rate *GER*(0) and the work-intensity weighted rate *GER*(1) correspond to two extreme cases: with the former, working just one hour per week and working 40 or more hours are equally valued; with the latter, only work intensity counts. Figure 9 shows that the value of α matters, not only for the level of the indicator, but also for the relative positions of countries. For the same four countries examined above, in Figure 9 we plot the generalised employment rates for different values of α, both for persons, *GER*(α), in the left panel, and for households, *HGER*1(α), in the right panel. In all four countries, the shape of *GER*(α) as a function of α is coherent with the information on the distribution of work intensity in the population. As α rises above 0, there is a sharp fall in the measured employment rate as a consequence of discounting part-time and part-year job positions. The effect is much stronger, and persistent as α grows, in the Netherlands, a country known for the extreme incidence of part-time work. Conversely, the high share of Poles working around or more than standard hours causes *GER*(α) to increase, after the initial drop at low values of α. Cross-country differences are somewhat smaller for the household rates: the overall pattern is similar to that observed for the individual rates, but the Netherlands now slides to the bottom of the ranking.

Figure 9 suggests that the employment picture changes as we let α gradually vary between 0 and 1, but the starkest contrast generally arises for the extreme values 0 and 1. In what follows, we will hence focus on the comparison of the two polar cases *GER*(0) and *GER*(1), though occasionally referring to results for other values of α.

6 Individual employment rates in the EU

Table 1 reports the core evidence of the paper. The first six columns compare levels and ranks of three measures of the employment rate for the EU countries in 2010: the official headcount rate derived according to ILO definitions, *ER*; the alternative headcount rate *GER*(0), calculated using the at-least-one-month-worked-in-the-year criterion; the work-intensity weighted rate *GER*(1). The first set of figures is estimated from the EU-LFS data, the other two sets from the EU-SILC data. The next three columns provide the decomposition of the difference between *GER*(1) and *GER*(0), based on expression (11).

The comparison between the two headcount measures captures the differences related to the diverse sources, besides definitions. As shown in the Appendix, their correlation and rank correlation coefficients are well above 0.8 and the correspondence, if not perfect, is acceptable. In the large majority of cases, the EU-SILC rates are higher than the EU-LFS rates: this is not too surprising because a person working just one month in the year is fully counted in the former, while has approximately 1 out of 12 chances to be classified as employed in a continuous survey such as the EU-LFS. On average, the EU-SILC rates are more than 3 percentage point higher than the EU-LFS rates; they are less dispersed across countries, as the coefficient of variation is 8.5 per

cent instead of 9.2.

The consequences of accounting for work intensity emerge from comparing *GER*(0) and *GER*(1), which are consistently estimated on the same EU-SILC data. As expected, *GER*(1) is considerably lower than *GER*(0) in all countries: by almost 10 percentage points on average, but by as much as 17-18 points in Finland and the Netherlands, and 23 points in Sweden. The non-standard-time effect matters more than the partial year effect in all countries but four (Bulgaria, Czech Republic, Cyprus and Slovakia): the former reduces the unweighted average employment rate across countries by 7.8 points, against 4.6 points for the latter; the interaction between these effects offset 2.8 points of these reductions. Double-digit differences can be observed for Portugal, the Netherlands, Denmark, Finland and Sweden for the effect of working less hours than the benchmark value. The fall of the coefficient of variation from 8.5 per cent for *GER*(0) to 7.4 per cent for *GER*(1) indicates that accounting for work intensity considerably narrows measured differences across countries: the Nordic nations and the Netherlands converge to the unweighted average from above, while Eastern nations converge from below. The gap relative to the average remains unaltered for Southern countries as a whole, also because of the worse cyclical conditions in 2010. Table 2 contains the time series for each EU country.

The comparison with the US provides further insights on the implications of taking an employment index adjusted for work intensity. Rather than considering individual EU countries, we focus on the EU-15, an aggregate for which we can construct a continuous series for the period 2004-10.[15] In Figure 10 we compare the age profiles in 2010 in the EU-15 and the US for both the official ILO employment rate (left-hand panel) and the work-intensity weighted employment rate (right-hand panel). On the basis of the official rate, proportionally fewer young and elderly Europeans than Americans are in paid employment; the opposite happens for persons in central age classes, from 30 to 55 years. On average, the US rate is higher than the EU-15 rate by 1.5 percentage points. The picture looks different if we consider the work-intensity weighted employment rate. The rates of Americans exceed those of Europeans at all ages, and the gap at young and old ages widens; the mean difference between the US and the EU-15 rises to over 7 percentage points.[16] This result is largely driven by the lower number of hours worked per week by Europeans.

We show the time patterns of the different measures of employment in Figures 11 and 12. In Figure 11, we plot the EU-15 rates in levels, in the left-hand panel, and as an index taking 2005 as the base year, in the right-hand panel. The solid blue line is the official employment rate *ER* from the EU-LFS. All other lines refer to estimates based on the EU-SILC. The dashed red line is the headcount employment rate *GER*(0), while the dashed green line is the work-intensity weighted rate *GER*(1). The dashed yellow line and the dashed grey line correspond to the generalised employment rates *GER*(0.5) and *GER*(0.1), respectively. *GER*(0) is steadily higher than the official rate *ER*, but it shares a similar pattern, showing a peak in 2008 and then a fall in the next two years. The three other measures, which are characterised by positive values of α, exhibit not only lower levels, but also different profiles: a steeper rise before the peak and an anticipated turning point, in 2007 instead of 2008. In part, this may capture a fall in

[15] However, we exclude Ireland because of data unavailability in the waves 2010-11, and the United Kingdom because of the large number of missing values for worked months in the waves 2005-10.

[16] This difference is likely to be underestimated, as in the EU-SILC people recorded as working in a month are assumed to be actually working all weeks in that month. This approximation is not necessary in the CPS, which collects the number of weeks worked.

hours worked per employed in response to the economic downturn at the end of 2008, facilitated in countries such as Germany and Italy by the adoption of work-sharing schemes. In part, however, it might also reflect the statistical inconsistency stemming from combining the usual hours of work recorded at the time of the interview with the months worked in the previous calendar year. In the US-CPS data shown in Figure 12, which are unaffected by this statistical inconsistency, both indices start declining after 2007, although in 2008 *GER*(1) falls more rapidly than *ER*. In any case, employment rates that account for work intensity, in terms of both hours and months worked, may provide a richer picture of employment changes over the business cycle.

7 Household employment rates in the EU

In Table 3, we report the two household-level generalised employment rates *HGER*1(1) and *HGER*2(1) for the EU countries during the period 2004-10. (Setting α to 1 maximises the impact of accounting for work intensity.) We compute both indices by considering all households with at least one person aged 18-59, excluding students up to 24 years. As for the AROPE sub-indicator, we exclude households composed only of children, students younger than 25, or people older than 59.

In 2010, the index *HGER*1(1) is equal to 69.6 per cent in Germany, 68.3 in France, 64.4 in Italy, and 59.7 in Spain. Nordic countries span a similar range: 62.3 per cent in Denmark, 63.3 in Sweden, and 65.8 in Finland, while values higher than 70 per cent are found in the United Kingdom and some Eastern countries. In general, cross-national differences appear to be lower than for individual employment rates, especially between the North and South of Europe. This might suggest that in Southern countries the lower individual work-intensity is partly offset by the work of other household members. As described earlier, while *HGER*1(1) treats all households equally, *HGER*2(1) weights households proportionally to their size. The fact that values of *HGER*2(1) are systematically lower than those of *HGER*1(1) hints that dependent children are relatively more concentrated in low-work-intensity households. In most countries, the average person in the age class 0-59 lives in a household where the total annual hours of work are little more than half the potential labour supply. As for *HGER*1(1), the proportion is somewhat higher in some Eastern countries, and there is virtually no gap between Southern and Nordic countries.

Decomposing the household non-employment rate as in (13) may highlight factors driving the narrowing of the gap at the household level. Table 4 reports the results of this decomposition for all EU countries in 2010. The non-employment effect is by far the most important in all countries; the non-standard-time effect dominates the partial-year effect, with few exceptions, all in the East. In Bulgaria, the Czech Republic, Poland, Romania and Slovakia the weekly working time appears to be longer than in other EU countries and does not contribute much to the value of *HGNER*1(1). On the contrary, working fewer hours per week, also for the spreading of part-time work, raises noticeably the non-employment rate in Nordic countries and in the Netherlands. Thus, the similar value of *HGNER*1(1) in Italy and Sweden, around 36 per cent, largely reflects a very high proportion of non-employed potential workers in Italy, but depends on the diffusion of non-standard working time arrangements in Sweden.

The time patterns of *HGER*1(α) for four values of α (0, 0.1, 0.5 and 1) and of the complement to 1 of the jobless household rate *JHR* calculated on the EU-LFS are analogous to those of the individual employment rates (Figure 13). The differences in the levels of the generalised employment rate as α changes from 0 to a positive value

are however much greater. Figure 14 compares the household-level indices for the EU and the US. In both, *HGER*(1) is remarkably lower than 1–*JHR*, and drops more than the other index after 2007, suggesting that job-losers live more frequently in households where at least another adult member is employed.

8 Conclusions

Cross-national differences in employment rates are wide in the EU. However, they are based on a crude measurement of the employment status, which ignores the large variation in working time arrangements and job contract durations. In this paper, we have described a class of generalised employment rates which account not only for how many people work, as the standard ILO measure, but also for how much they work. Work intensity is defined as the total annual hours of work relative to a benchmark value. The accounting for work intensity is the first innovation of our proposed measure. The second innovation is the introduction of a parameter that allows us to embody different normative valuations of having a job, independently of the time spent at work. The third innovation is the derivation, in a fully consistent way, of household-level measures from individual measure, thanks to the aggregation property of work intensity. The household measures are of interest in the analysis of the intra-household allocation of time between market and non-market activities as well as of poverty and social inclusion. We have calculated these indices from the data of the EU-SILC and the US-CPS. The former source allows us to approximate annual hours of work by the number of months worked per year and the number of hours worked per week, while the latter provides information on the number of weeks worked per year and the weekly working time.

Within the limits of our measurement hypotheses and data availability, the proposed generalised employment rates shed new lights on the cross-country comparison of employment rates for both individuals and households. If we account for work intensity, the gap between the North and the South of Europe in the amount of labour supplied by people narrows; differences are even smaller if we look at the household labour supply. Moreover, the cyclical behaviour of intensity-adjusted series appears to differ from that of the official employment rates.

Our generalised measure shares with the standard employment rate the focus on undifferentiated paid employment. As an indicator of labour-related aspects of human well-being, our attempt to incorporate information on the intensive labour margin is only one short step ahead of allowing solely for the extensive margin. However, our approach is flexible enough to accommodate different job qualities (e.g. by assigning different weights to jobs valued differently by the policy-maker), in line with the goals of the Europe 2020 strategy.[17] On a different ground, the use of hours as the aggregator is also flexible enough to include the time spent on non-market activities. According to data from time-use surveys published by Eurostat, in 2000 household and family care took on average 3 hours and a half in Italy and France, around 3 hours in Latvia, Norway and Finland, but close to 4 hours in Bulgaria and Slovenia. Disparities were even larger among women, with the Italians at the top with 5 hours and 20 minutes per day, followed by the Spanish and the Eastern European women with roughly 5 hours. Unpaid work could be easily included in our framework, by adding hours spent in

[17] For a discussion of relevant dimensions of job quality see European Commission (2008) and European Parliament (2009).

market and non-market activities during a reference period, possibly weighting differently the types of activities. This is a promising line of research to study the distribution of the overall workload on persons or the impact of home production on the labour supplied in the market.[18]

The employment rate is a fundamental policy objective. Yet, it is necessary to bring to the fore the definite normative views implicit in its definition. Though based on estimates which could be improved in many respects, our results highlight the importance of finding new flexible labour market statistics. Future work requires both a conceptual effort, to develop and characterise these measures, and a statistical effort, to enrich the informational basis on which these measures are estimated.[19]

[18] See Goldschmidt Clermont (1993) for a methodological discussion of the valuation of non-market productive time and Jenkins and O'Leary (1996) for estimates of its impact on income distribution.

[19] The availability of the longitudinal dimension of the EU-LFS would help improving the estimates of work intensity during the year. Individuals are asked to report the year and month in which they started their current job. Simple questions asking whether hours worked per week were constant since the beginning would help to get a better measure of total work intensity.

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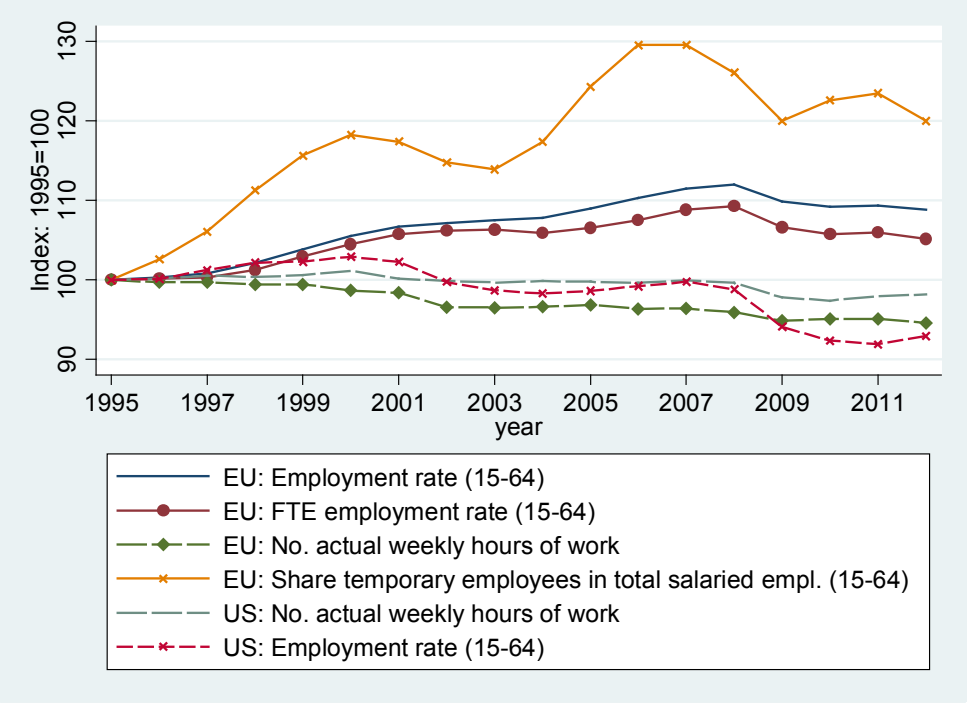
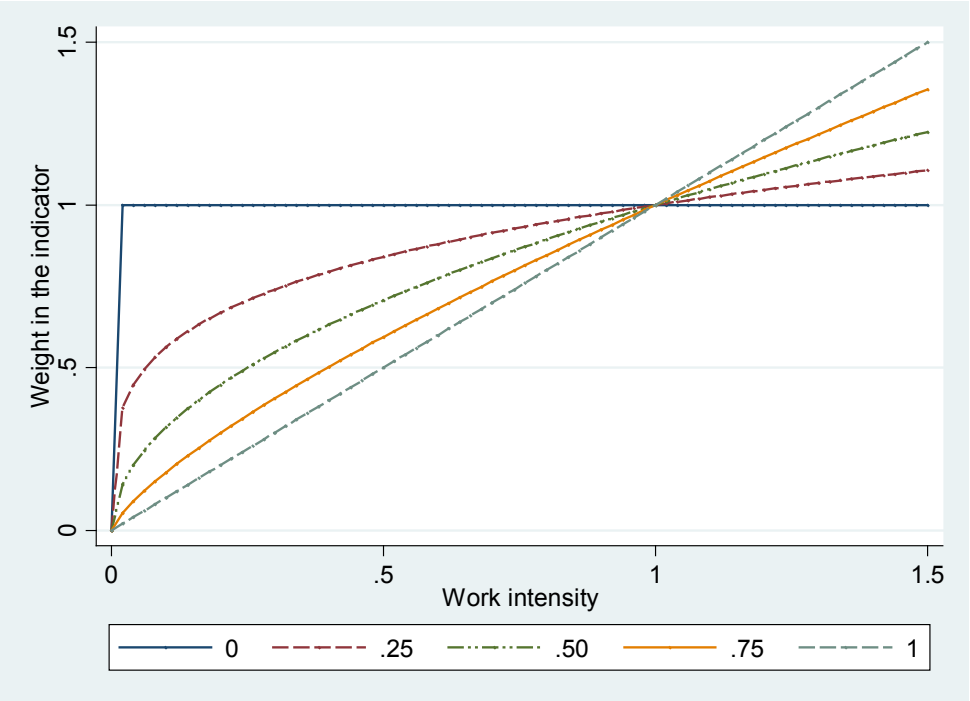
Figure 1: Employment indicators for the EU-15 and the US (indices: 1995=100)



Source: authors' elaborations on data from the EU-LFS (Eurostat 2013a) and the US-CPS. The FTE employment rate is estimated using the information on the average number of actual weekly hours of work in main and second jobs.

Figure 2: Weighting scheme of employed people in the generalised employment rates for different values of α

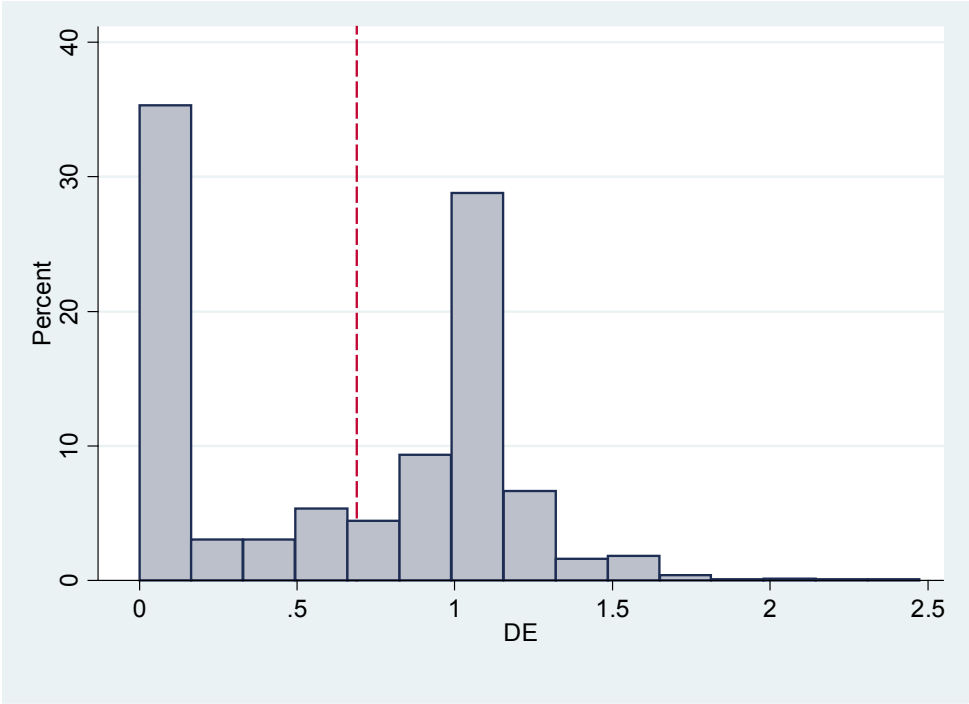


Source: authors' elaborations.

Figure 3: Distribution of weekly hours usually worked in all jobs by working-age employed (16-64), by country and main activity

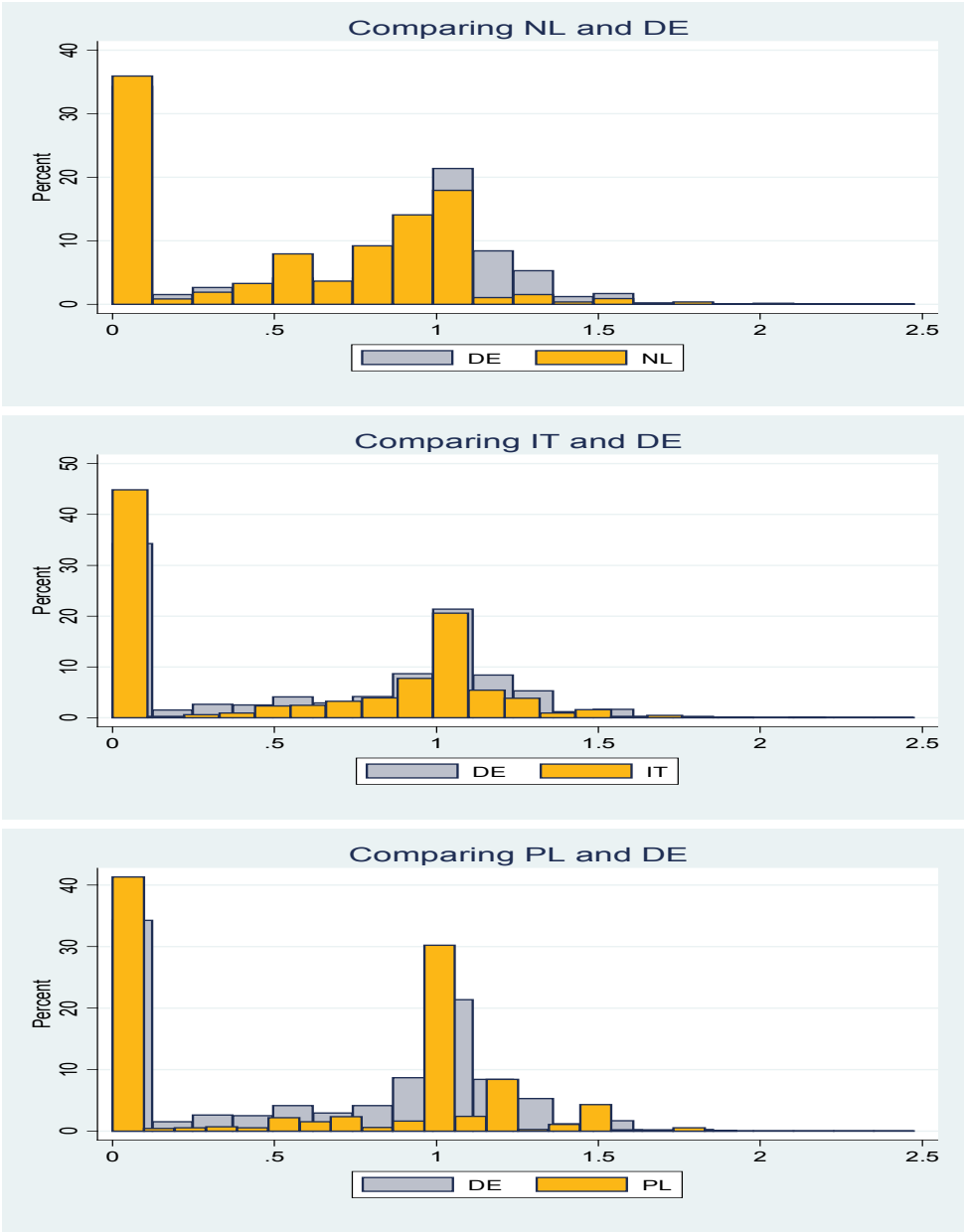
Source: authors' elaborations on data from the EU-SILC and US-CPS (years 2007-11). Countries are ranked in ascending order of median weekly hours for all employed population.

Figure 4: The distribution of work intensity of individuals in Germany in 2010



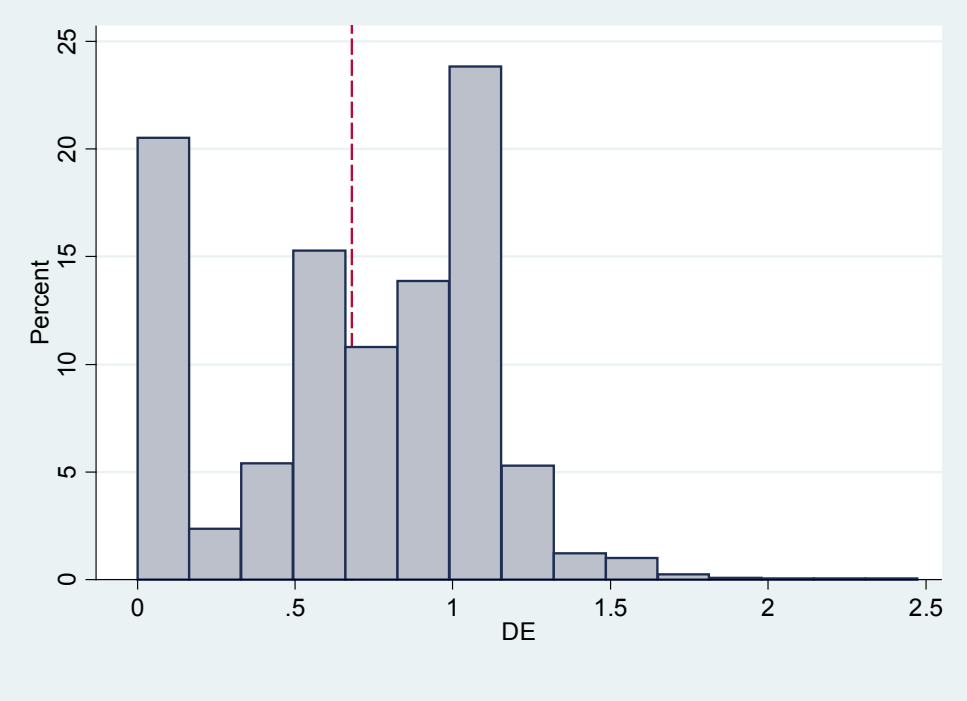
Source: authors' elaborations on data from the EU-SILC (Wave 2011). The dashed vertical line corresponds to the sample average.

Figure 5: The distribution of work intensity of individuals in the Netherlands, Italy and Poland, as compared with Germany in 2010



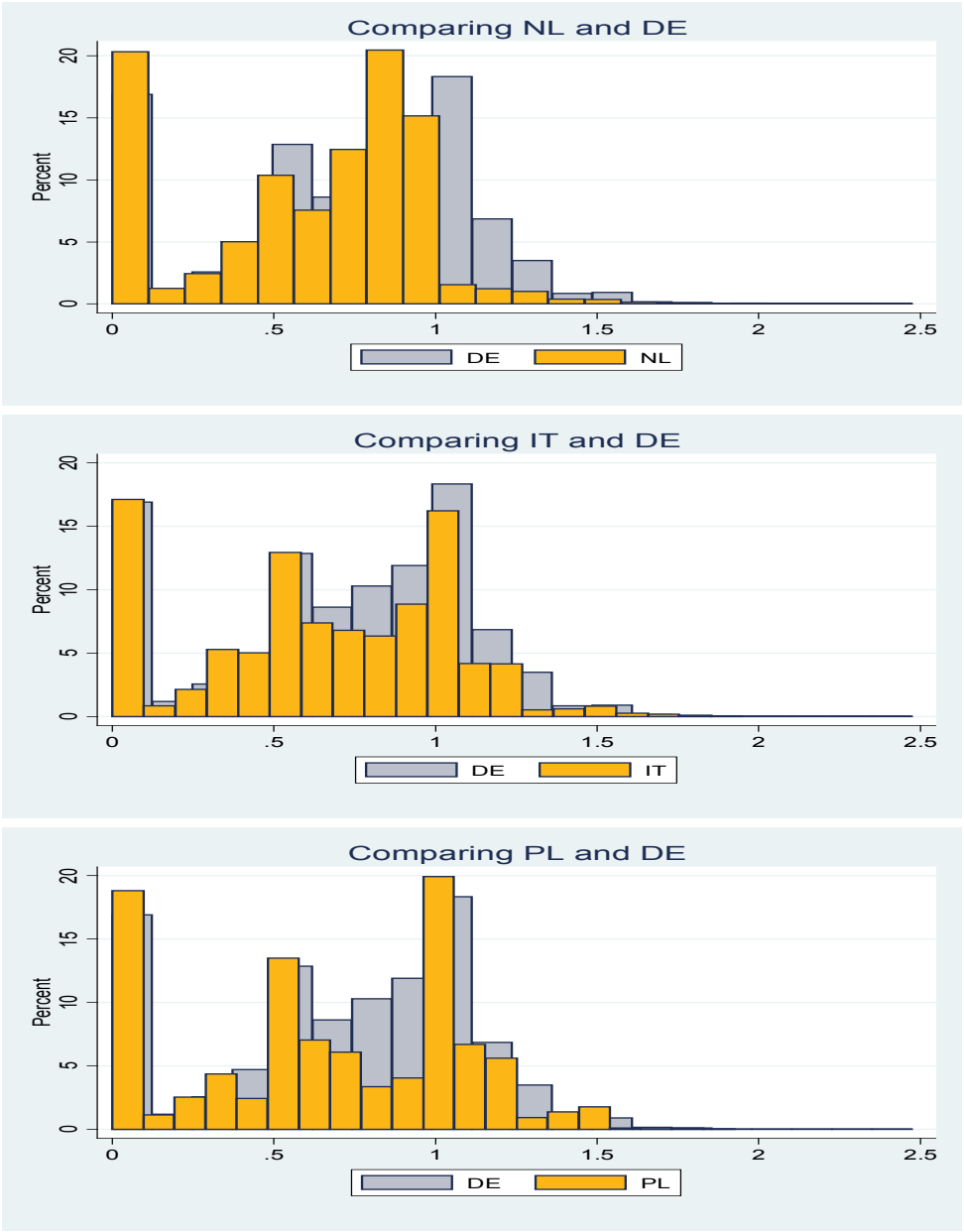
Source: authors' elaborations on data from the EU-SILC (Wave 2011).

Figure 6: The distribution of work intensity of households in Germany in 2010



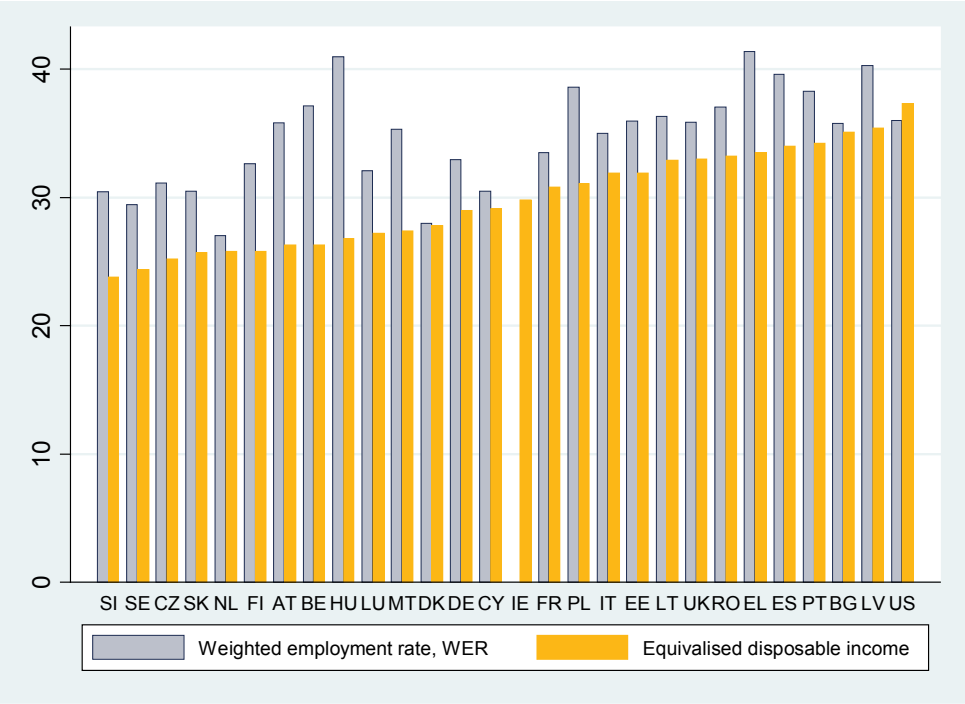
Source: authors' elaborations on data from the EU-SILC (Wave 2011). The dashed vertical line corresponds to the sample average.

Figure 7: The distribution of work intensity of households in the Netherlands, Italy and Poland, as compared with Germany in 2010



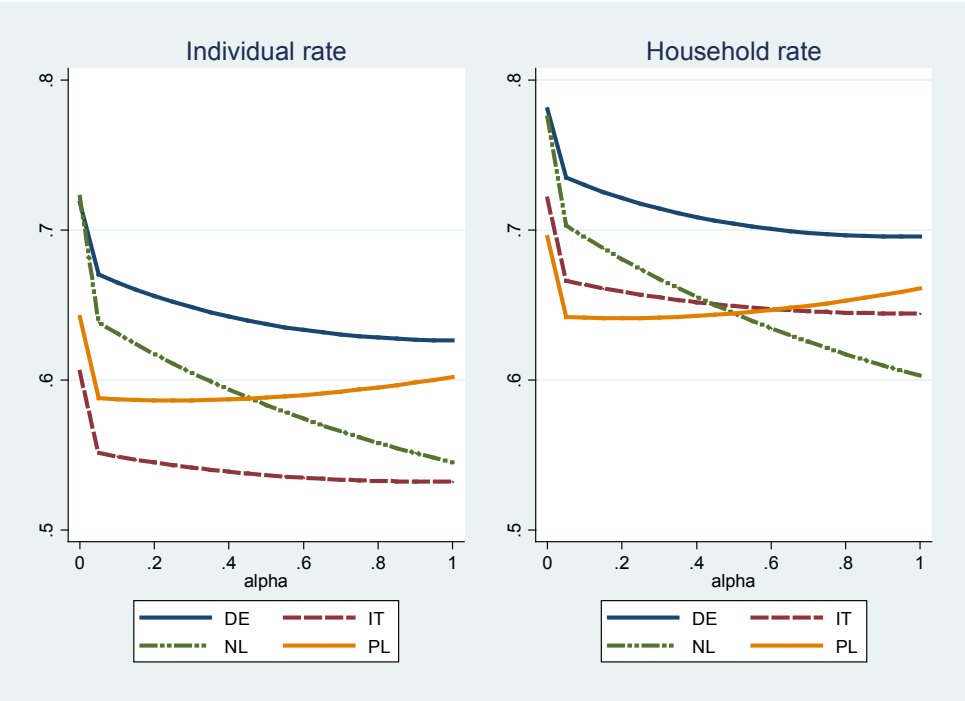
Source: authors' elaborations on data from the EU-SILC (Wave 2011).

Figure 8: Gini index of the distribution of work intensity among households and of the distribution of equivalised disposable income among persons in 2010 in EU countries



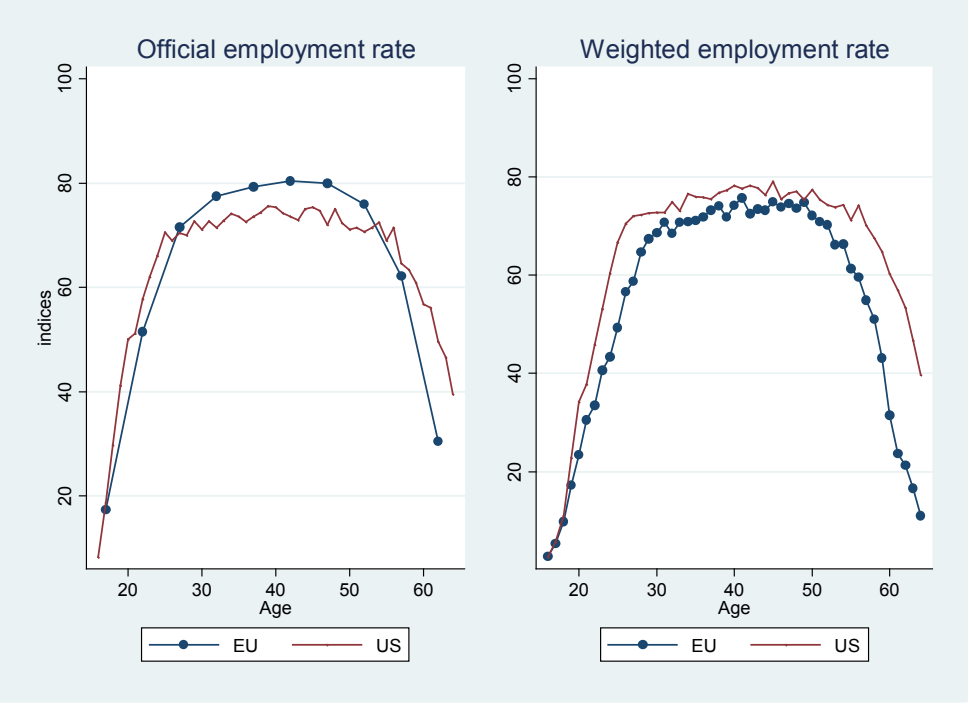
Source: authors' elaborations on data from Eurostat (2013b) and US-CPS (as available in the LIS database as of 30 May 2014, http://www.lisdatacenter.org/) for equivalised disposable income and from the EU-SILC (Wave 2011) and US-CPS for work intensity. Disposable income is equivalised by the OECD modified equivalent scale. LIS data for the US are not fully comparable because of differences in the definition of income. See Table A1 for country acronyms.

Figure 9: *GER*(α) and *HGER*1(α) for different values of α in Germany, the Netherlands, Italy and Poland



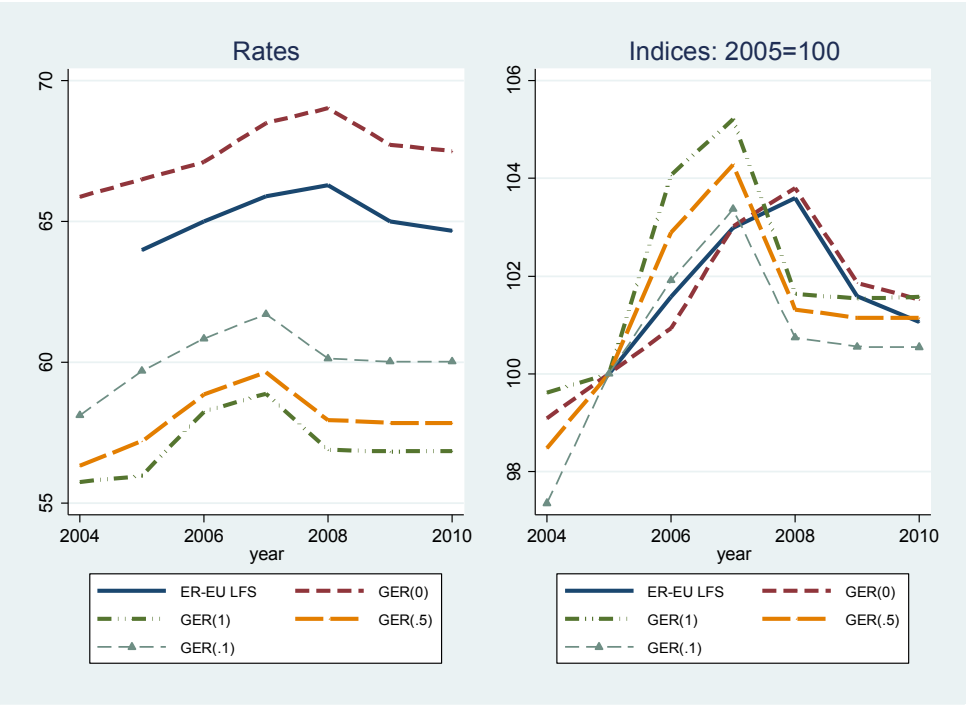
Source: authors' elaborations on data from the EU-SILC (Wave 2011).

Figure 10: Employment rates in the EU-15 and the US in 2010, by age



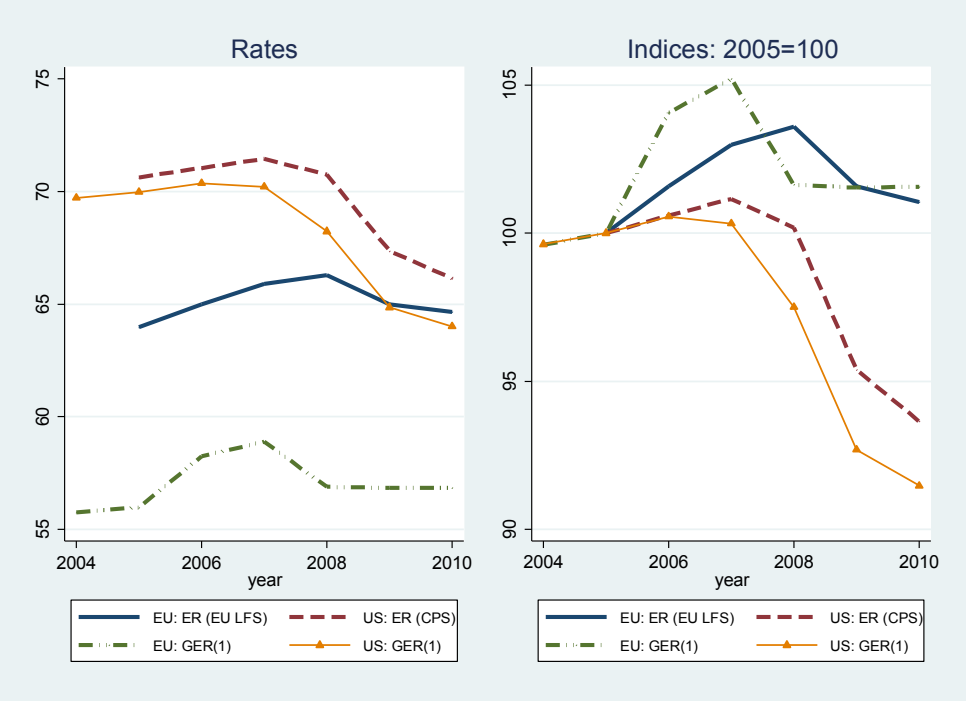
Source: authors' elaborations on data from the US-CPS (March Supplement, 2011, public use file) for the US, and from the EU-LFS (public use file) for the ILO rates and the EU-SILC (Wave 2011) for the other rates for the EU-15. The EU-15 does not include Ireland, because of data unavailability in the waves 2010-11, and the United Kingdom, because of the large number of missing values for worked months in the waves 2005-10. Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC and the US-CPS.

Figure 11: Employment rates in the EU-15 in 2004-10, for different values of α



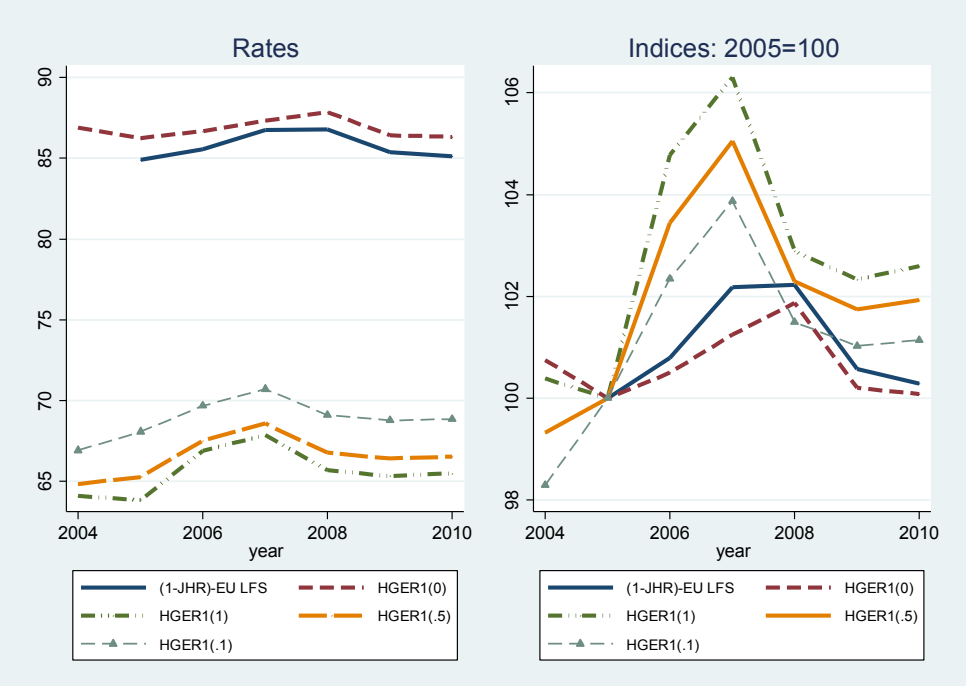
Source: authors' elaborations on data from the EU-LFS (public use files) and the EU-SILC (Waves 2005-11). The EU-15 does not include Ireland, because of data unavailability in the waves 2010-11, and the United Kingdom, because of the large number of missing values for worked months in the waves 2005-10. Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC.

Figure 12: Employment rates for individuals in the EU-15 and the US in 2004-10



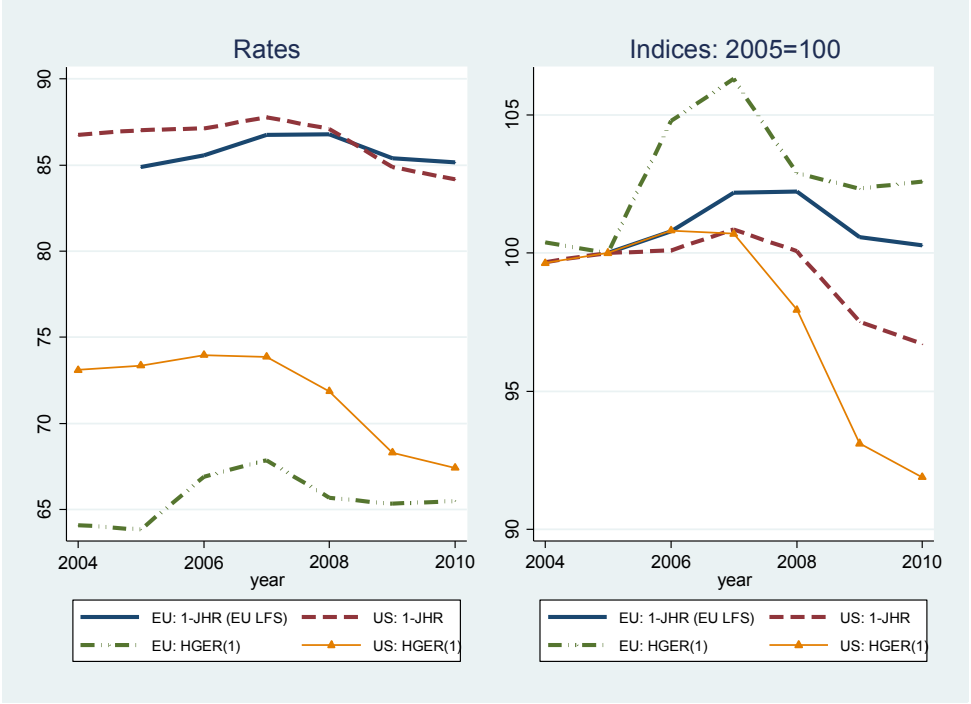
Source: authors' elaborations on data from the US-CPS (March Supplement, 2004-11, public use files) for the US, and from the EU-LFS (public use files) for the ILO rates and the EU-SILC (Wave 2005-11) for the other rates for the EU-15. The EU-15 does not include Ireland, because of data unavailability in the waves 2010-11, and the United Kingdom, because of the large number of missing values for worked months in the waves 2005-10. Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC and the US-CPS.

Figure 13: Employment rates for households in the EU-15 in 2004-10, for different values of α



Source: authors' elaborations on data from the EU-LFS (public use files) and the EU-SILC (Waves 2005-11). Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC. The EU-15 does not include Ireland, because of data unavailability in the waves 2010-11, and the United Kingdom, because of the large number of missing values for worked months in the waves 2005-10.

Figure 14: Employment rates for households in the EU-15 and the US in 2004-10



Source: authors' elaborations on data from the US-CPS (March Supplement, 2004-11, public use files) for the US, and from the EU-LFS (public use files) for the ILO rates and the EU-SILC (Wave 2005-11) for the other rates for the EU-15. The EU-15 does not include Ireland, because of data unavailability in the waves 2010-11, and the United Kingdom, because of the large number of missing values for worked months in the waves 2005-10. Population aged 15-59 years in the EU-LFS and 16-59 years in the EU-SILC and the US-CPS.

Table 1: Employment rates for working-age individuals (16-64 years) in 2010

Country	EU-LFS		EU-SILC						
	Employment rate (ILO definition), *ER*		Employment rate (at least one month worked in the year), *GER*(0)		Work-intensity weighted employment rate, *GER*(1)		Decomposition of *GER*(1)–*GER(0)*		
							Partial-year effect	Non-standard-time effect	Interaction effect
	%	Rank	%	Rank	%	Rank	% points	% points	% points
BE	62.0	14	64.7	15	54.9	19	-4.3	-7.7	2.1
BG	59.7	16	65.0	14	59.4	9	-4.5	-2.7	1.6
CZ	65.0	12	67.0	13	64.3	1	-4.1	-0.5	2.0
DK	73.3	2	71.6	7	59.1	12	-3.8	-11.0	2.3
DE	71.1	5	71.8	6	62.6	3	-3.5	-7.3	1.5
EE	61.0	15	69.4	9	58.5	14	-7.2	-7.5	3.8
IE	59.6	–	–	–	–	–	–	–	–
EL	59.6	17	58.0	26	49.5	25	-2.9	-7.5	1.9
ES	58.6	22	63.1	20	51.7	24	-4.8	-9.9	3.3
FR	63.9	13	68.8	10	57.8	16	-4.9	-8.6	2.5
IT	56.9	24	60.5	23	53.2	22	-3.1	-6.0	1.8
CY	68.9	7	69.7	8	61.6	5	-5.2	-5.0	2.1
LV	59.3	18	63.4	19	52.7	23	-6.1	-8.3	3.7
LT	57.8	23	64.5	17	55.7	17	-5.5	-7.0	3.7
LU	65.2	11	68.8	11	60.8	6	-3.9	-6.0	1.9
HU	55.4	26	60.4	24	48.5	26	-5.0	-9.8	2.9
MT	56.1	25	58.9	25	53.3	21	-3.0	-4.0	1.3
NL	74.7	1	72.2	5	54.5	20	-3.6	-16.3	2.2
AT	71.7	4	72.9	4	61.9	4	-6.0	-8.3	3.4
PL	59.3	18	64.2	18	60.2	7	-4.5	-7.1	7.6
PT	65.6	10	67.8	12	55.5	18	-4.0	-10.4	2.0
RO	58.8	20	62.0	22	59.1	11	-1.0	-2.3	0.4
SI	66.2	9	64.7	16	57.9	15	-3.0	-5.2	1.4
SK	58.8	20	62.8	21	59.3	10	-3.3	-1.5	1.3
FI	68.1	8	75.5	2	58.7	13	-11.5	-13.1	7.8
SE	72.1	3	82.5	1	59.8	8	-8.0	-21.8	7.2
UK	69.5	6	73.4	3	63.9	2	-3.1	-8.5	2.1
Unweighted average	63.8	–	67.1	–	57.5	–	-4.6	-7.8	2.8
Coefficient of variation	9.2	–	8.5	–	7.4	–	–	–	–
Correlation with EU-LFS	–	–	0.85	0.89	0.56	0.55	–	–	–

Source: authors' elaborations on data from the EU-LFS (Eurostat 2013a) and the EU-SILC (Waves 2005-11). Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC. The EU-LFS value for Ireland is reported for completeness, but is not considered in any calculation. See Table A1 for country acronyms.

Table 2: Employment rates for working-age individuals (16-64 years) in 2004-10 (per cent)

Country	Employment rate (at least one month worked in the year), *GER*(0)							Work-intensity weighted employment rate, *GER*(1)						
	2004	2005	2006	2007	2008	2009	2010	2004	2005	2006	2007	2008	2009	2010
BE	62.0	63.1	63.7	65.8	65.0	63.9	64.7	53.8	55.1	55.1	56.9	56.2	55.3	54.9
BG	–	–	–	68.6	69.1	67.5	65.0	–	–	–	67.0	64.1	61.6	59.4
CZ	67.8	66.3	66.6	67.4	68.4	67.6	67.0	66.3	65.6	66.0	67.4	66.8	64.6	64.3
DK	72.6	72.6	71.9	72.4	73.1	72.4	71.6	61.7	62.6	62.5	63.8	63.0	60.9	59.1
DE	63.2	65.7	67.9	69.2	70.6	70.8	71.8	50.9	51.8	59.0	61.1	60.2	61.3	62.6
EE	69.5	72.5	72.9	75.7	75.4	71.2	69.4	63.1	65.0	66.4	67.4	62.3	56.9	58.5
IE	66.3	66.8	69.5	67.6	54.9	–	–	54.0	53.1	54.5	51.8	46.0	–	–
EL	63.9	63.1	62.9	64.5	65.1	65.1	58.0	61.4	62.1	61.7	62.5	57.1	58.0	49.5
ES	67.5	67.7	69.4	71.5	70.8	67.5	63.1	60.0	59.2	60.3	59.0	53.6	53.4	51.7
FR	68.3	68.1	67.8	69.0	69.4	68.0	68.8	57.6	57.5	56.9	58.4	58.0	56.7	57.8
IT	59.9	60.3	59.7	60.8	62.1	59.7	60.5	54.8	54.2	55.5	55.9	53.3	53.8	53.2
CY	67.4	69.4	70.2	70.4	69.5	–	69.7	64.4	66.4	65.2	65.3	63.3	–	61.6
LV	69.9	70.5	71.9	73.7	72.4	66.3	63.4	64.5	68.3	68.8	67.9	58.0	51.4	52.7
LT	65.3	68.0	71.7	71.2	71.3	67.0	64.5	60.7	61.6	65.5	64.8	60.0	56.1	55.7
LU	67.2	69.2	68.5	69.4	68.2	69.0	68.8	61.1	62.9	62.5	62.9	60.7	62.1	60.8
HU	69.3	61.5	63.1	61.5	60.8	60.1	60.4	56.3	56.9	57.4	54.5	50.7	52.3	48.5
MT	–	–	–	–	59.0	58.2	58.9	–	–	–	–	52.6	52.8	53.3
NL	71.4	70.4	69.2	70.5	70.9	70.9	72.2	50.8	53.0	52.7	54.4	54.4	54.1	54.5
AT	70.8	69.9	70.5	71.9	72.8	73.0	72.9	60.4	58.6	60.4	62.6	61.2	61.5	61.9
PL	55.8	59.4	62.0	64.1	64.7	64.3	64.2	52.1	54.9	57.1	60.0	59.7	59.7	60.2
PT	70.2	69.8	68.9	70.7	69.6	67.2	67.8	58.9	59.8	59.6	58.5	56.2	53.2	55.5
RO	–	–	–	61.3	61.9	62.2	62.0	–	–	–	59.5	58.2	59.7	59.1
SI	60.1	63.9	63.1	64.1	66.3	65.4	64.7	55.2	59.7	59.5	60.7	61.1	59.2	57.9
SK	63.8	65.3	64.9	67.1	66.9	63.9	62.8	61.3	62.4	63.5	65.5	62.9	59.7	59.3
FI	77.1	76.3	77.7	78.1	78.7	76.2	75.5	59.1	58.1	61.2	62.5	61.0	57.7	58.7
SE	82.4	81.9	83.7	83.9	83.0	82.5	82.5	64.6	67.1	70.0	59.7	55.8	58.2	59.8
UK	85.0	75.4	76.0	76.7	63.5	67.6	73.4	40.3	66.9	67.8	66.1	58.8	63.1	63.9
Unweighted average	68.2	68.2	68.9	69.5	68.3	67.5	67.1	58.1	60.1	61.2	61.4	58.4	57.7	57.5
Coefficient of variation	9.7	7.7	7.9	7.8	8.8	7.8	8.5	10.1	8.2	7.8	7.3	7.9	6.5	7.4

Source: authors' elaborations on data from the EU-SILC (Waves 2005-11). See Table A1 for country acronyms.

Table 3: Employment rates for households in 2004-10 (per cent)

Country	Generalised employment rate, *HGER*1(1)							Generalised employment rate, *HGER*2(1)						
	2004	2005	2006	2007	2008	2009	2010	2004	2005	2006	2007	2008	2009	2010
BE	61.9	63.2	63.9	66.4	65.6	65.3	64.7	51.5	54.0	54.7	56.3	55.4	54.5	54.0
BG	–	–	–	80.3	75.8	72.9	70.3	–	–	–	66.7	64.0	61.1	59.1
CZ	76.4	76.6	78.3	79.6	79.7	77.5	77.4	66.6	66.3	66.9	67.8	67.4	65.3	64.7
DK	65.9	65.9	66.7	69.2	67.3	62.3	62.3	57.3	57.1	57.7	59.3	56.4	53.5	54.0
DE	58.7	58.6	65.8	68.3	67.6	68.0	69.6	48.0	44.4	49.3	51.1	50.0	50.5	51.2
EE	72.1	74.7	76.0	77.3	70.9	65.8	66.8	60.6	63.6	63.9	64.3	59.2	54.1	54.8
IE	61.4	60.7	60.9	58.0	51.3	–	–	53.4	53.5	54.2	51.5	44.6	–	–
EL	69.3	69.4	69.4	69.3	63.6	65.2	55.5	59.6	61.1	60.9	61.2	56.1	57.1	48.7
ES	68.7	67.6	69.7	67.8	61.7	61.3	59.7	58.9	58.1	59.8	58.3	52.5	52.4	50.9
FR	67.4	67.3	67.9	70.3	69.3	67.3	68.3	55.6	55.4	55.3	56.6	55.7	54.8	55.1
IT	65.0	64.2	66.0	66.9	63.9	64.9	64.4	52.4	51.9	53.2	53.4	50.9	51.6	50.7
CY	76.2	79.2	78.0	78.4	77.5	–	74.3	67.8	70.5	68.9	69.1	67.1	–	64.2
LV	73.7	78.9	78.3	77.6	65.4	59.9	60.5	63.0	68.1	67.5	67.0	57.5	51.6	52.4
LT	71.7	73.5	77.4	75.4	70.4	65.6	64.1	63.9	65.3	67.2	66.5	61.5	57.5	55.7
LU	74.1	74.5	75.2	76.5	73.3	74.5	73.7	61.4	62.2	61.9	62.6	60.0	62.6	61.7
HU	66.4	67.3	67.4	64.4	62.4	64.6	59.6	56.5	58.3	58.6	56.4	53.0	54.2	49.8
MT	–	–	–	–	61.3	61.1	62.6	–	–	–	–	54.1	53.8	54.8
NL	55.4	56.8	57.9	60.5	60.9	60.5	60.3	47.8	49.7	49.9	51.4	51.2	50.6	50.6
AT	68.7	65.8	68.1	70.0	68.7	68.5	69.2	57.3	55.1	56.6	58.2	56.9	57.0	56.9
PL	60.1	63.4	65.4	68.5	68.6	69.2	66.1	56.1	58.6	59.7	62.4	56.2	56.5	59.1
PT	67.6	67.7	67.9	66.8	64.2	61.0	64.0	58.7	58.5	58.2	57.0	54.2	51.7	54.0
RO	–	–	–	70.6	69.0	70.5	71.3	–	–	–	61.7	60.4	62.3	61.9
SI	69.4	73.6	73.6	74.6	74.8	72.4	71.0	62.8	67.2	67.5	68.2	68.4	65.3	63.5
SK	74.6	75.4	78.1	80.8	78.7	74.5	74.7	68.1	67.1	68.3	70.9	69.3	65.7	66.0
FI	64.4	64.5	67.3	68.6	67.0	64.1	65.8	55.7	55.0	56.6	57.4	56.3	53.1	53.6
SE	68.6	71.1	75.5	64.6	59.0	61.5	63.3	57.2	59.7	61.8	52.6	47.8	49.0	50.6
UK	37.1	66.1	67.3	63.5	56.1	65.6	70.3	25.6	50.8	51.5	47.7	42.3	51.0	55.1
Unweighted average	66.4	68.6	70.1	70.5	67.2	66.6	66.5	56.9	58.8	59.6	59.8	56.6	55.9	55.9
Coefficient of variation	12.6	9.0	8.4	8.8	10.2	7.4	8.2	15.2	11.2	10.1	10.8	12.1	9.0	9.1

Source: authors' elaborations on data from the EU-SILC (Waves 2005-11). See Table A1 for country acronyms.

Table 4: Decomposition of the household non-employment rate *HGNER*1(1) in 2010 (per cent)

Country	Non-employment effect	Partial-year effect	Non-standard-time effect	Interaction effect	*HGNER*1(1)
BE	25.0	4.5	7.9	-2.1	35.3
BG	24.3	4.6	2.2	-1.5	29.6
CZ	20.0	4.7	0.1	-2.2	22.6
DK	24.1	4.2	11.5	-2.2	37.7
DE	21.9	3.2	6.7	-1.4	30.4
EE	22.5	7.4	6.4	-3.2	33.2
IE	–	–	–	–	–
EL	34.9	3.2	8.5	-2.1	44.5
ES	28.1	5.0	10.5	-3.2	40.3
FR	19.5	5.3	9.4	-2.6	31.7
IT	27.9	3.3	6.2	-1.8	35.6
CY	18.1	5.3	4.3	-1.9	25.7
LV	28.3	6.7	7.8	-3.2	39.5
LT	26.7	6.2	6.7	-3.6	35.9
LU	18.4	4.1	5.8	-2.0	26.3
HU	26.6	5.5	11.5	-3.3	40.4
MT	32.3	2.6	3.7	-1.1	37.4
NL	22.5	3.2	15.6	-1.5	39.7
AT	20.0	5.7	8.2	-3.1	30.8
PL	30.5	4.3	1.2	-2.1	33.9
PT	23.3	4.2	10.6	-2.1	36.0
RO	25.8	1.0	2.2	-0.4	28.6
SI	21.6	3.3	5.6	-1.5	29.0
SK	21.9	3.6	1.3	-1.5	25.3
FI	18.2	10.9	12.0	-6.9	34.2
SE	15.3	7.0	18.8	-4.5	36.7
UK	21.2	2.9	7.5	-1.9	29.6

Source: authors' elaborations on data from the EU-SILC (Wave 2011). See Table A1 for country acronyms.

Appendix: Comparing EU-SILC and EU-LFS

The number of months worked in the year and that of hours worked per week are the two EU-SILC variables that we use to estimate the generalised employment rate. For worked months, we follow two slightly different procedures, owing to survey differences. For the period 2004-07, we compute the number of months worked during year *t* as the sum of the variables pl070 (number of months spent at full-time work) and pl072 (number of months spent at part-time work), collected in the wave *t*+1. As in some months the main activity status is missing, we follow Eurostat's (2008) recommendation and calculate month intensity as the ratio of the number of worked months to the number of "workable" months, i.e. the sum of pl070, pl072, pl080, pl085, pl087 and pl090 (after setting to zero any missing value in these variables). This implies imputing the work intensity recorded for the months where the activity status is known to the months where it is missing. For the period 2008-10, this problem does not arise as the information on the working status is in principle available for all months. We then compute the number of months worked during year *t* as the sum of the variables from pl073 through pl076 collected in wave *t*+1. These variables record the number of months spent at work as full-time employee, part-time employee, full-time self-employed or family worker, and part-time self-employed or family worker, respectively. We retain all observations where up to three of these variables are missing, by setting equal to 0 the missing value(s), but we drop observations which have missing values for all four variables. For the total hours of work per week, in all years we calculate the sum of the variables pl060 (usual hours in the main job) and pl100 (usual hours in all other jobs). If the variable pl100 is missing we set it equal to zero. Finally, all statistics are calculated using the proper personal cross-sectional weights, either pb040, which sum to the country population of household members aged 16 and over, or rb050, which sum to the country population of household members of any age.

The proportion of missing values for months and hours of work is reported in Table A1. (Table A1 also reports the country acronyms used in the paper.) In most cases, this proportion is reassuringly low, but there are exceptions. For worked months, in all years but one missing values account for between 5 and 10 per cent of observations in Poland, and for more than 10 per cent in the United Kingdom. For weekly working time, the proportion of missing values exceeds 5 per cent in Portugal in all years and in three other cases. We do not attempt any imputation for these missing values but we instead exclude from our sample all individuals reporting them. This might bias our results in countries where missing values are more frequent.

There are many reasons why estimates may legitimately diverge between the EU-SILC and the EU-LFS. First, definitions differ considerably. Following the ILO guidelines, in the EU-LFS persons are classified as employed if during the reference week they worked at least one hour or had a job from which they were temporarily absent, for instance due to illness. In the EU-SILC the occupational status at the time of the interview is instead taken to be that declared by respondents (variable pl030 until wave 2008, variables pl030 or pl031 for waves 2009-10, and pl031 for wave 2011). The self-reported status may lead to underestimate employment, as many people working few hours at the time of the interview may not perceive themselves as employed. Defining the employment status in the EU-SILC if a person has worked at least one month during the year (lagged one period, as the information relates to the year prior to the interview) may overstate employment levels because persons working for just one month count as those working for the whole year. As regards weekly working time, it is defined as *actual* worked hours in the EU-LFS and *usual* hours in the EU-SILC, with a

distinction in both surveys between the main job and the other jobs.[20] Differences between the two concepts arise from the treatment of sickness absence, holidays, extra hours worked due to a demand peak, or a shorter working time caused by demand slackness. Besides definitions, other causes for divergence between the two sources relate to the reference population, the time horizon, and the sample size. The lowest age for an employed person in the EU-SILC is 16 years vis-à-vis 15 years in the EU-LFS. The EU-LFS is conducted continuously, while the EU-SILC is carried out once per year. In all countries, the sample size of the EU-SILC is considerably smaller than that of the EU-LFS.

These differences show up in the employment statistics for the working-age population. Figure A1 shows some comparisons for 2011, while annual values are reported in Tables A2-A5. In almost two third of cases, the EU-SILC (self-reported) employment rate is lower than the EU-LFS figure; in eight countries, the absolute difference exceeds 5 per cent (panel a; Table A2). Except for two cases, hours worked per week in all jobs are higher in the EU-SILC than in the EU-LFS: given the focus on usual hours in the former and actual hours in the latter, this result may be expected in a year of poor economic conditions in many countries such as 2011. Discrepancies are larger than 5 per cent in six countries (panel b; Table A3). The share of people that declare to have more than one job is understated in the EU-SILC relative to the EU-LFS in almost all countries, in twelve cases by more than a third (panel c; Table A4). On the contrary jobless household rates turn out to be higher in the EU-SILC in all countries but two, and by more than a fifth in about half of them the cases (panel d; Table A5).[21] In part, this result reflects the use of the self-reported status to define the working condition in the EU-SILC. For employment rates and worked hours, the Pearson's and Spearman's correlation coefficients are generally high, around 0.8-0.9, and somewhat improving in more recent waves. In brief, the correspondence between the EU-SILC and the EU-LFS for the examined statistics is far from perfect, but it is all in all acceptable, especially in the light of the differences between the sources.

Due to the lack of alternative series, it is not possible to perform any comparison for the number of months worked in the year, which is also the variable used to derive the Europe 2020 AROPE sub-indicator on household work intensity. Changes over time show a few suspiciously large variations from one year to the next, although some of them may be explained by cyclical conditions (Table A6). As compared to the EU-LFS estimates, the employment rate calculated on the basis of this variable does not fare much differently from the self-reported employment status (see last columns of Table A2), suggesting that the different definitions possibly matter less than other survey differences.

[20] The EU-LFS collects usual working time only for the main job. Moreover, the EU-LFS reports second jobs only if they are carried out in the reference week, while the EU-SILC reports the usual condition.
[21] For both sources, the share of jobless households is the ratio of the number of households where no adult is working (excluding households composed solely of students or solely inactive aged 65 and over) to the total number of private households.

Figure A1: Labour market statistics in the EU-LFS and the EU-SILC in 2011

Source: authors' elaborations on data from the EU-LFS (Eurostat 2013a) and the EU-SILC (Waves 2005-11). Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC. The red line corresponds to the 45° line.

Table A1: Share of working-age population (16-64 years) with missing values for months worked per year and usual hours of work (per cent)

Country		Months worked per year							Usual hours of work						
		2004	2005	2006	2007	2008	2009	2010	2005	2006	2007	2008	2009	2010	2011
Belgium	BE	0.0	0.6	0.6	0.5	0.0	0.0	0.0	0.9	1.0	0.9	0.1	0.5	0.3	0.3
Bulgaria	BG	–	–	–	0.0	0.0	0.0	0.0	–	–	–	0.1	0.0	0.0	0.0
Czech Republic	CZ	0.0	0.0	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	DK	1.0	1.4	1.4	0.7	0.9	2.6	0.2	0.1	0.1	0.1	0.2	0.1	0.2	0.1
Germany	DE	0.0	0.0	1.1	1.3	0.0	0.0	0.0	1.3	0.8	0.5	0.3	0.1	0.0	0.0
Estonia	EE	0.0	0.0	0.9	0.9	0.9	1.0	0.8	0.1	0.1	0.0	0.2	0.2	0.2	0.4
Ireland	IE	1.0	0.3	2.9	1.9	1.8	–	–	1.0	1.2	1.1	1.1	1.2	–	–
Greece	EL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.9	0.0	0.0
Spain	ES	0.0	0.0	0.0	0.6	1.8	2.1	1.1	0.4	1.5	1.8	3.3	5.7	4.2	2.9
France	FR	0.0	1.1	0.6	0.6	0.6	0.8	1.1	1.1	1.1	1.0	0.9	0.8	0.9	0.8
Italy	IT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.1	0.1	0.1
Cyprus	CY	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	LV	0.0	0.0	0.0	0.0	1.6	1.0	1.2	3.3	0.5	0.3	0.6	0.6	0.4	0.5
Lithuania	LT	0.0	0.0	0.3	0.6	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Luxembourg	LU	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.1	0.1	0.4	0.1	0.1
Hungary	HU	0.0	0.0	0.5	0.0	0.2	0.0	0.0	7.8	0.1	0.0	0.0	3.9	0.0	4.2
Malta	MT	–	–	–	–	0.0	0.0	0.0	–	–	–	–	2.0	1.6	1.4
Netherlands	NL	1.0	1.3	0.5	0.8	0.5	0.4	0.4	0.0	0.8	0.9	0.8	1.1	1.2	0.9
Austria	AT	0.0	0.0	0.0	0.0	0.1	0.0	0.0	2.3	1.3	0.8	0.3	0.2	0.4	0.3
Poland	PL	0.0	5.2	7.3	7.8	9.4	8.7	8.8	0.1	0.1	0.0	0.1	0.0	0.0	0.0
Portugal	PT	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	6.2	5.5	7.2	7.0	7.5	6.6
Romania	RO	–	–	–	0.0	0.0	0.0	0.0	–	–	–	2.2	3.5	3.3	3.3
Slovenia	SI	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.0	0.0
Slovakia	SK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	0.1	0.0	0.0	0.0
Finland	FI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	3.1	0.0	0.0	0.0	0.0	0.0
Sweden	SE	1.1	3.5	1.2	1.8	2.6	3.5	2.1	4.2	3.9	1.8	0.4	3.1	1.3	0.5
United Kingdom	UK	13.8	10.6	10.7	14.1	22.7	12.6	0.0	1.5	0.9	1.3	1.3	11.9	0.8	1.3

Source: authors' elaborations on data from the EU-SILC (Waves 2005-11).

Table A2: Employment rates of the working-age population in the EU-LFS and the EU-SILC (per cent)

Country	EU-LFS: ILO definition								EU-SILC: self-reported current status							EU-SILC: at least one month worked in the year						
	2004	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011	2004	2005	2006	2007	2008	2009	2010
BE	60.5	61.1	61.0	62.0	62.4	61.6	62.0	61.9	59.7	61.7	62.0	62.5	62.3	61.8	62.1	62.0	63.1	63.7	65.8	65.0	63.9	64.7
BG	55.1	55.8	58.6	61.7	64.0	62.6	59.7	58.4	–	–	–	64.1	64.7	63.0	61.6	–	–	–	68.6	69.1	67.5	65.0
CZ	64.1	64.8	65.3	66.1	66.6	65.4	65.0	65.7	62.8	62.5	63.1	64.3	63.9	62.6	62.9	67.8	66.3	66.6	67.4	68.4	67.6	67.0
DK	76.0	75.9	77.4	77.0	77.9	75.3	73.3	73.1	69.3	69.0	69.3	69.7	70.4	68.9	67.6	72.6	72.6	71.9	72.4	73.1	72.4	71.6
DE	64.3	65.5	67.2	69.0	70.1	70.3	71.1	72.5	57.9	67.9	65.2	66.4	66.8	67.7	69.3	63.2	65.7	67.9	69.2	70.6	70.8	71.8
EE	62.9	64.4	68.1	69.4	69.8	63.5	61.0	65.1	66.2	68.2	70.2	69.9	65.0	60.8	64.5	69.5	72.5	72.9	75.7	75.4	71.2	69.4
IE	65.5	67.6	68.7	69.2	67.6	61.9	59.6	58.9	61.1	61.6	61.6	59.6	54.1	–	–	66.3	66.8	69.5	67.6	54.9	–	–
EL	59.6	60.1	61.0	61.4	61.9	61.2	59.6	55.6	60.4	60.3	60.8	62.3	61.6	60.8	51.1	63.9	63.1	62.9	64.5	65.1	65.1	58.0
ES	60.9	63.3	64.8	65.6	64.3	59.8	58.6	57.7	62.0	63.0	64.1	64.9	60.2	59.1	56.7	67.5	67.7	69.4	71.5	70.8	67.5	63.1
FR	63.3	63.7	63.6	64.3	64.8	64.0	63.9	63.9	63.8	63.9	63.6	64.7	63.7	63.0	64.3	68.3	68.1	67.8	69.0	69.4	68.0	68.8
IT	57.7	57.6	58.4	58.7	58.7	57.5	56.9	56.9	56.7	57.7	58.2	59.1	57.5	57.4	57.5	59.9	60.3	59.7	60.8	62.1	59.7	60.5
CY	69.4	68.5	69.6	71.0	70.9	69.0	68.9	67.6	64.8	66.2	66.1	67.2	65.3	–	65.5	67.4	69.4	70.2	70.4	69.5	–	69.7
LV	62.2	63.3	66.3	68.3	68.6	60.9	59.3	60.8	65.5	67.3	68.3	67.9	59.2	56.0	58.3	69.9	70.5	71.9	73.7	72.4	66.3	63.4
LT	61.4	62.6	63.6	64.9	64.3	60.1	57.8	60.3	62.1	63.9	67.7	67.6	62.6	59.4	60.2	65.3	68.0	71.7	71.2	71.3	67.0	64.5
LU	62.5	63.6	63.6	64.2	63.4	65.2	65.2	64.6	64.1	65.8	65.2	65.4	64.0	65.1	64.9	67.2	69.2	68.5	69.4	68.2	69.0	68.8
HU	56.6	56.9	57.3	57.3	56.7	55.4	55.4	55.8	62.7	57.7	58.2	56.0	56.1	55.0	55.1	69.3	61.5	63.1	61.5	60.8	60.1	60.4
MT	53.4	53.9	53.6	54.6	55.3	55.0	56.1	57.6	–	–	–	–	56.5	56.7	57.1	–	–	–	–	59.0	58.2	58.9
NL	73.1	73.2	74.3	76.0	77.2	77.0	74.7	74.9	62.0	67.6	68.9	69.8	69.6	69.0	68.8	71.4	70.4	69.2	70.5	70.9	70.9	72.2
AT	66.5	68.6	70.2	71.4	72.1	71.6	71.7	72.1	66.3	64.6	64.7	65.8	65.0	65.5	65.9	70.8	69.9	70.5	71.9	72.8	73.0	72.9
PL	51.4	52.8	54.5	57.0	59.2	59.3	59.3	59.7	50.4	53.9	56.7	59.0	59.6	59.8	60.0	55.8	59.4	62.0	64.1	64.7	64.3	64.2
PT	68.0	67.5	67.9	67.8	68.2	66.3	65.6	64.2	67.0	67.2	66.6	68.0	64.6	63.5	63.9	70.2	69.8	68.9	70.7	69.6	67.2	67.8
RO	58.7	57.6	58.8	58.8	59.0	58.6	58.8	58.5	–	–	–	60.1	60.1	61.5	61.6	–	–	–	61.3	61.9	62.2	62.0
SI	65.6	66.0	66.6	67.8	68.6	67.5	66.2	64.4	58.1	59.7	60.1	61.4	61.0	59.2	58.3	60.1	63.9	63.1	64.1	66.3	65.4	64.7
SK	56.7	57.7	59.4	60.7	62.3	60.2	58.8	59.3	61.2	63.1	63.2	65.3	63.0	60.4	59.9	63.8	65.3	64.9	67.1	66.9	63.9	62.8
FI	68.3	68.4	69.3	70.3	71.1	68.7	68.1	69.0	66.4	65.6	66.8	67.6	66.2	62.8	63.3	77.1	76.3	77.7	78.1	78.7	76.2	75.5
SE	72.4	72.5	73.1	74.2	74.3	72.2	72.1	73.6	72.4	73.8	74.8	74.4	73.6	74.3	74.8	82.4	81.9	83.7	83.9	83.0	82.5	82.5
UK	71.5	71.7	71.6	71.5	71.5	69.9	69.5	69.5	71.4	71.3	72.7	72.7	69.9	69.2	70.3	85.0	75.4	76.0	76.7	63.5	67.6	73.4
Correlation	–	–	–	–	–	–	–	–	0.73	0.82	0.79	0.80	0.85	0.88	0.89	0.71	0.79	0.73	0.75	0.64	0.78	0.85
Rank correl.	–	–	–	–	–	–	–	–	0.63	0.79	0.78	0.80	0.87	0.88	0.91	0.69	0.79	0.79	0.80	0.73	0.85	0.89

Source: authors' elaborations on data from the EU-LFS (Eurostat 2013a) and the EU-SILC (Waves 2005-11). Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC. Pearson's correlation coefficients and Spearman's rank correlation coefficients are computed between the EU-SILC estimates and the corresponding EU-LFS estimates.

Table A3: Hours worked per week in main job and in all jobs by the working-age population in the EU-LFS and the EU-SILC (hours)

Country	EU-LFS: actual hours in main job							EU-SILC: usual hours in main job							EU-LFS: actual hours in all jobs							EU-SILC: usual hours in all jobs						
	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011
BE	37.0	36.8	37.1	36.8	36.8	36.9	36.8	38.5	38.4	38.0	38.1	37.9	37.9	38.0	37.5	37.3	37.6	37.3	37.3	37.5	37.3	39.0	39.0	38.4	38.5	38.4	38.4	38.6
BG	41.1	41.4	41.6	41.6	41.4	41.2	40.9	–	–	–	42.3	42.1	41.6	41.5	41.2	41.5	41.7	41.8	41.5	41.3	40.9	–	–	–	46.5	42.4	41.9	41.7
CZ	41.9	41.8	41.7	41.7	41.5	41.2	41.1	43.2	43.0	43.1	43.1	42.8	42.6	42.4	42.2	42.1	41.9	42.0	41.8	41.5	41.4	43.6	43.4	43.5	43.4	43.2	43.0	42.8
DK	35.6	35.3	34.4	34.1	33.7	33.6	33.7	38.1	38.2	37.8	37.5	37.2	37.3	37.6	35.6	35.3	34.4	34.1	33.7	34.7	34.7	38.1	38.2	37.8	38.3	37.9	37.8	38.2
DE	35.7	35.6	35.5	35.6	35.7	35.7	35.5	37.1	32.9	35.8	36.4	37.6	37.4	37.6	36.0	35.9	35.8	36.0	36.0	36.1	35.9	37.8	33.5	36.3	36.9	38.1	37.9	38.0
EE	39.7	39.7	39.5	39.5	38.7	38.8	38.7	40.4	40.2	39.9	39.8	39.3	39.1	39.1	40.1	40.2	39.9	39.9	39.2	39.4	39.4	40.9	40.8	40.6	40.5	40.1	40.0	39.9
IE	36.8	36.6	36.4	36.1	35.2	35.0	34.9	37.0	36.3	36.4	36.0	35.1	–	–	36.8	37.0	36.9	36.6	35.6	35.4	35.3	37.5	36.8	37.0	36.4	35.4	–	–
EL	43.1	42.7	42.5	42.4	42.5	42.3	42.1	42.0	42.7	42.2	42.2	40.1	39.5	39.7	43.6	43.2	43.0	43.0	43.1	42.9	42.5	42.9	43.7	43.3	43.1	40.9	40.2	40.2
ES	39.4	39.4	39.3	39.1	38.8	38.6	38.4	40.6	40.3	40.5	39.7	39.5	39.5	39.7	39.8	39.8	39.7	39.5	39.2	39.0	38.7	40.9	40.5	40.8	40.1	39.9	39.8	39.9
FR	38.0	38.1	38.1	38.1	38.0	38.0	38.0	37.9	37.9	37.8	38.2	38.1	38.2	38.2	38.4	38.5	38.6	38.5	38.5	38.5	38.5	38.3	38.3	38.1	38.7	38.5	38.6	38.5
IT	38.6	38.5	38.4	38.2	38.0	37.8	37.5	39.7	39.4	39.6	39.3	38.1	38.9	39.0	38.8	38.7	38.6	38.4	38.2	38.0	37.7	40.1	39.8	40.0	39.7	38.5	39.3	39.2
CY	40.4	40.2	40.2	40.2	40.3	40.1	39.8	41.7	41.9	41.0	40.5	40.1	–	39.6	41.1	40.9	40.8	40.8	40.9	40.5	40.3	42.4	42.8	42.0	41.3	40.7	–	40.3
LV	41.2	41.4	40.7	40.1	39.3	38.8	38.8	43.2	42.5	42.1	41.5	40.1	39.8	39.7	42.2	42.4	41.8	41.2	40.1	39.5	39.6	44.2	43.8	43.0	42.7	41.1	40.6	40.4
LT	38.4	38.6	38.8	39.1	38.6	38.4	38.1	40.0	40.1	39.8	39.4	38.9	38.6	38.7	39.3	39.5	39.7	39.9	39.4	39.2	38.9	41.9	41.6	41.2	40.5	39.8	39.6	39.8
LU	37.5	37.3	36.7	36.7	37.2	37.2	37.0	39.4	39.3	39.4	39.6	39.3	39.5	39.1	37.7	37.5	36.9	36.9	37.5	37.6	37.3	39.7	39.5	39.7	39.8	39.6	39.7	39.3
HU	40.3	40.3	40.2	40.1	39.8	39.8	39.5	41.3	41.0	41.0	40.7	40.3	40.1	40.0	40.6	40.6	40.4	40.3	40.1	40.1	39.8	42.0	41.5	41.3	41.1	40.7	40.5	40.3
MT	39.4	39.2	39.1	39.0	38.9	38.8	38.7	–	–	–	–	39.6	39.6	39.6	39.8	40.0	39.9	39.7	39.6	39.5	39.5	–	–	–	–	40.2	40.2	40.2
NL	30.7	30.9	30.8	30.8	30.6	30.6	30.5	34.9	33.5	33.5	33.5	33.5	33.6	33.5	31.3	31.6	31.5	31.5	31.3	31.3	31.2	35.7	34.1	34.2	34.2	34.2	34.3	34.2
AT	39.3	39.2	38.9	38.5	38.1	37.8	37.8	38.4	38.0	38.6	38.8	38.8	39.3	39.0	39.9	39.8	39.5	39.1	38.6	38.3	38.4	38.9	38.4	39.1	39.6	39.6	40.1	39.8
PL	40.9	40.9	41.0	41.0	40.7	40.6	40.5	41.9	41.8	41.3	41.3	41.0	41.3	41.4	42.0	41.9	42.0	42.0	41.7	41.6	41.4	43.1	42.9	42.3	42.4	42.2	42.4	42.4
PT	39.2	39.1	39.0	39.0	38.9	39.0	39.2	40.8	40.9	40.6	40.2	40.5	39.9	40.4	40.1	39.9	39.8	39.9	39.8	39.8	39.8	41.5	41.7	41.5	40.7	40.9	40.4	40.9
RO	40.8	40.6	40.5	40.5	40.4	40.3	40.3	–	–	–	40.9	41.2	41.2	40.8	41.3	41.0	41.1	41.0	40.8	40.7	40.7	–	–	–	41.6	41.8	41.8	41.4
SI	40.7	40.3	40.3	40.4	39.8	39.4	39.5	40.9	41.5	41.4	41.1	40.7	40.8	40.7	41.2	40.9	40.9	41.0	40.4	40.0	40.0	41.3	42.0	41.6	41.4	41.0	41.0	40.9
SK	40.9	41.0	41.1	41.0	40.8	40.6	40.6	42.3	41.8	41.7	41.4	41.2	41.2	41.3	41.1	41.1	41.2	41.1	40.9	40.8	40.8	42.6	42.0	42.0	41.7	41.4	41.3	41.5
FI	37.7	37.6	37.5	37.6	37.3	37.3	37.2	38.9	38.5	38.3	38.4	38.5	38.7	38.8	38.2	38.2	38.0	38.1	37.8	37.8	37.7	39.2	38.8	38.7	38.8	39.2	39.3	39.4
SE	36.5	36.4	36.4	36.4	36.3	36.3	36.3	38.9	38.6	38.4	32.8	32.3	32.9	33.0	36.5	36.4	36.4	36.4	37.1	37.1	37.2	39.6	39.8	39.5	33.6	33.0	33.7	33.7
UK	37.1	36.9	37.0	36.9	36.6	36.4	36.4	–	37.4	37.4	37.0	37.1	37.4	37.3	37.5	37.3	37.4	37.3	37.0	36.8	36.8	–	37.9	37.9	37.0	37.3	37.8	37.7
Correl.	–	–	–	–	–	–	–	0.91	0.89	0.93	0.88	0.84	0.82	0.83	–	–	–	–	–	–	–	0.91	0.89	0.93	0.86	0.83	0.82	0.82
Rank cor.	–	–	–	–	–	–	–	0.92	0.90	0.95	0.95	0.94	0.91	0.93	–	–	–	–	–	–	–	0.90	0.92	0.94	0.96	0.94	0.92	0.93

Source: authors' elaborations on data from the EU-LFS (Eurostat 2013a) and the EU-SILC (Waves 2005-11). Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC. Pearson's correlation coefficients and Spearman's rank correlation coefficients are computed between the EU-SILC estimates and the corresponding EU-LFS estimates.

Table A4: Share of working-age population with more than one job in the EU-LFS and the EU-SILC (per cent)

Country	EU-LFS							EU-SILC						
	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011
BE	3.9	3.8	3.9	3.8	4.0	4.2	4.2	2.5	2.5	2.5	2.6	2.4	2.8	2.8
BG	0.6	0.8	0.7	1.0	0.5	0.6	0.3	–	–	–	7.2	0.9	0.9	0.5
CZ	2.4	2.2	1.6	1.8	1.9	2.2	2.1	1.9	1.9	1.8	1.7	1.8	2.0	1.6
DK	–	–	–	–	–	9.8	9.1	–	–	–	11.8	5.2	5.0	5.3
DE	3.4	3.7	3.6	3.6	3.4	3.7	4.7	5.4	5.4	4.9	4.8	4.5	4.6	4.5
EE	3.3	3.6	3.5	3.2	4.3	5.0	5.3	2.6	3.0	3.7	3.7	4.0	4.3	4.6
IE	–	2.3	2.7	2.7	2.3	2.1	2.1	1.7	1.9	2.1	1.7	1.2	–	–
EL	2.8	3.0	3.1	3.4	3.4	3.1	2.4	3.2	3.5	3.6	3.1	2.5	2.5	1.6
ES	2.6	2.7	2.7	2.8	2.5	2.5	2.3	1.7	1.5	1.8	1.9	1.9	1.6	0.9
FR	2.9	3.3	3.6	3.6	3.8	3.8	3.8	1.7	1.7	1.9	2.0	2.1	2.2	2.2
IT	1.6	1.6	1.8	1.9	1.5	1.5	1.4	1.7	1.8	1.9	1.7	1.7	1.7	1.3
CY	6.0	4.6	4.3	4.3	3.9	3.2	3.4	2.5	3.9	4.4	3.8	2.8	–	3.0
LV	6.0	5.8	6.1	6.1	4.7	4.3	4.2	3.9	4.3	3.5	4.6	3.3	2.8	2.7
LT	5.8	6.1	6.1	5.1	5.0	5.1	5.5	7.9	6.5	7.1	4.5	3.7	3.6	4.0
LU	1.7	2.0	2.0	2.0	3.0	3.0	2.4	1.9	1.7	1.9	1.7	1.6	1.6	1.5
HU	1.9	1.8	1.6	1.6	1.8	1.8	2.0	2.8	2.1	1.8	1.8	1.5	1.5	1.3
MT	4.6	5.3	5.3	5.1	5.2	5.0	5.6	–	–	–	–	2.5	2.5	2.4
NL	6.1	6.2	6.5	6.6	6.5	6.8	6.9	4.5	3.9	4.4	4.6	4.8	5.1	4.8
AT	4.0	4.3	4.2	4.4	4.2	4.0	4.2	2.4	2.2	2.5	4.3	4.1	4.4	4.6
PL	7.9	7.6	7.7	7.6	7.5	7.3	7.1	4.1	4.4	4.5	4.9	4.8	4.6	4.2
PT	6.5	6.1	6.5	6.8	6.7	6.1	5.1	3.2	3.2	3.3	2.2	2.0	1.7	2.1
RO	3.3	2.9	3.9	3.3	3.1	2.8	2.6	–	–	–	2.4	2.2	2.5	2.4
SI	3.5	3.4	3.8	3.8	3.6	3.8	3.2	1.8	2.3	1.5	1.6	1.6	1.5	1.2
SK	1.4	1.2	1.1	1.0	1.0	1.2	1.2	1.4	1.2	1.1	1.3	1.1	0.9	0.8
FI	3.4	3.9	3.8	3.7	3.4	3.7	3.9	1.8	2.1	2.1	2.2	3.5	3.1	3.0
SE	–	–	–	–	6.9	7.0	7.4	3.2	4.8	5.1	5.5	4.6	5.3	5.2
UK	3.8	3.7	3.9	3.8	4.0	3.9	4.0	3.1	2.7	3.0	0.0	1.2	3.0	2.7
Correlation	–	–	–	–	–	–	–	0.57	0.72	0.68	0.32	0.71	0.77	0.87
Rank correl.	–	–	–	–	–	–	–	0.66	0.79	0.70	0.44	0.74	0.79	0.87

Source: authors' elaborations on data from the EU-LFS (Eurostat 2013a) and the EU-SILC (Waves 2005-11). Population aged 15-64 years in the EU-LFS and 16-64 years in the EU-SILC. Pearson's correlation coefficients and Spearman's rank correlation coefficients are computed between the EU-SILC estimates and the corresponding EU-LFS estimates.

Table A5: Share of jobless households in the EU-LFS and the EU-SILC (per cent)

Country	EU-LFS							EU-SILC						
	2005	2006	2007	2008	2009	2010	2011	2005	2006	2007	2008	2009	2010	2011
BE	18.7	18.8	18.3	17.9	18.6	18.3	18.6	21.1	19.4	19.1	18.3	19.3	19.8	20.4
BG	18.1	16.7	15.2	13.7	14.5	15.6	17.7	–	–	–	10.7	10.9	12.5	13.8
CZ	13.6	13.3	12.6	12.4	13.1	13.3	13.0	16.3	16.3	15.3	14.5	14.1	14.8	14.4
DK	–	–	–	–	–	16.9	15.8	19.2	20.0	19.9	19.6	19.1	21.0	23.7
DE	15.4	14.5	13.3	12.9	12.7	12.1	11.8	20.5	15.9	17.1	16.0	15.7	15.7	14.7
EE	13.8	11.4	10.6	10.6	14.2	16.8	15.0	13.6	11.7	10.8	11.2	13.9	16.1	14.4
IE		12.1	12.0	12.7	16.3	18.2	18.9	16.1	16.2	16.7	17.8	22.1	–	–
EL	12.4	12.0	11.8	11.8	12.7	14.0	16.4	12.9	13.5	13.3	13.2	14.0	15.0	21.7
ES	10.2	9.8	10.4	11.3	14.4	14.9	15.6	11.4	11.0	10.6	11.0	14.2	14.8	16.9
FR	14.5	15.0	14.7	14.9	15.8	15.7	15.8	16.4	16.4	16.8	16.5	16.6	17.9	17.4
IT	13.5	12.9	12.7	13.1	13.9	14.3	14.2	15.3	14.8	14.3	13.7	14.7	14.5	15.0
CY	9.2	9.0	8.4	8.4	9.7	9.9	10.5	9.7	9.1	9.0	8.4	9.0	–	10.4
LV	13.9	11.7	11.0	10.6	14.9	16.5	15.6	14.4	12.3	11.3	11.2	16.7	19.3	18.2
LT	11.7	12.1	12.2	13.8	15.8	17.6	17.0	17.8	15.0	12.1	13.4	14.9	17.5	18.0
LU	12.0	12.2	11.9	13.2	12.0	11.6	12.2	12.7	12.3	10.6	10.5	12.9	12.6	13.3
HU	17.5	17.2	17.2	17.6	18.2	18.1	18.0	16.7	19.3	19.2	20.5	19.0	19.9	20.6
MT	14.4	14.7	15.1	16.1	16.3	15.2	15.3	–	–	–	–	16.2	15.8	14.9
NL	13.7	13.4	12.4	11.8	11.7	12.6	12.5	19.9	17.9	17.2	16.0	16.2	16.5	17.2
AT	14.6	13.7	12.8	12.4	12.8	12.7	12.8	15.7	16.9	17.2	15.6	16.5	16.7	16.8
PL	19.2	18.1	16.7	15.8	16.2	16.5	16.2	23.4	20.4	18.8	17.3	15.6	15.1	18.2
PT	8.8	9.1	9.1	9.0	10.0	10.4	11.9	9.7	10.4	11.1	10.3	12.4	13.2	12.5
RO	14.3	13.3	13.4	13.4	14.1	14.4	15.3	–	–	–	13.9	14.3	12.9	12.6
SI	13.4	13.2	12.2	12.0	13.1	14.3	15.7	16.1	14.9	14.9	15.0	15.0	17.3	18.4
SK	15.3	14.5	14.3	13.1	13.9	14.8	14.6	14.6	13.2	13.8	12.3	13.5	14.4	14.7
FI	14.5	13.7	13.3	12.5	14.1	14.2	13.9	17.9	18.4	17.6	16.2	17.5	19.4	19.0
SE	–	–	–	–	14.6	15.0	14.3	14.6	13.7	12.8	13.0	16.6	16.2	13.0
UK	14.6	14.2	14.4	14.1	15.0	15.6	15.4	14.4	17.0	15.4	16.4	13.6	14.4	13.9
Correlation	–	–	–	–	–	–	–	0.81	0.88	0.83	0.75	0.68	0.57	0.58
Rank correl.	–	–	–	–	–	–	–	0.67	0.85	0.85	0.61	0.57	0.50	0.61

Source: authors' elaborations on data from the EU-LFS (Eurostat 2013a) and the EU-SILC (Waves 2005-11). For both sources, the share of jobless households is the ratio of the number of households where no adult is working (excluding households composed solely of students or solely inactive aged 65 and over) to the total number of private households. In the EU-SILC, the employment status is that declared by respondents at the time of the interview.

Table A6: Average number of months worked in the year by working-age individuals (16-64 years)

Country	2004	2005	2006	2007	2008	2009	2010
BE	7.1	7.2	7.2	7.4	7.4	7.2	7.3
BG	–	–	–	7.5	7.7	7.6	7.3
CZ	7.7	7.6	7.6	7.7	7.8	7.6	7.5
DK	8.2	8.2	8.2	8.3	8.5	8.3	8.1
DE	7.1	7.5	7.7	7.9	8.0	8.1	8.2
EE	7.8	8.1	8.1	8.4	8.3	7.6	7.5
IE	7.2	7.3	7.4	7.2	6.3	–	–
EL	7.2	7.1	7.1	7.3	7.4	7.3	6.6
ES	7.5	7.5	7.7	7.9	7.8	7.3	7.0
FR	7.6	7.6	7.6	7.7	7.8	7.6	7.7
IT	6.8	6.8	6.9	7.0	7.2	6.9	6.9
CY	7.6	7.8	7.8	7.9	7.9	–	7.7
LV	7.8	8.0	8.2	8.3	8.1	7.0	6.9
LT	7.3	7.5	8.0	8.0	8.0	7.4	7.1
LU	7.6	7.9	7.8	7.8	7.8	7.9	7.8
HU	8.0	6.8	7.0	6.8	6.8	6.6	6.6
MT	–	–	–	–	6.7	6.7	6.7
NL	7.9	7.8	7.7	8.0	8.1	8.1	8.2
AT	8.0	7.8	7.8	8.0	8.1	8.0	8.0
PL	6.1	6.5	6.8	7.1	7.2	7.2	7.2
PT	8.0	7.9	7.8	8.0	7.9	7.6	7.7
RO	–	–	–	7.2	7.3	7.3	7.3
SI	6.8	7.3	7.2	7.4	7.6	7.5	7.4
SK	7.2	7.4	7.5	7.7	7.7	7.2	7.1
FI	7.8	8.0	8.1	8.2	8.0	7.7	7.7
SE	8.7	8.8	9.0	8.9	9.0	8.9	8.9
UK	8.4	7.7	7.8	7.5	7.6	8.0	8.4

Source: authors' elaborations on data from the EU-SILC (Waves 2005-11).

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