

Climbing out of crisis: characteristics of the newly employed in Europe

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Abstract

There is a wide-spread expectation among policy makers that job creation across Europe during the recovery from the Great Recession (2008-) will be concentrated in high-skill / high-qualification occupations, giving reason to doubt the extent to which the recovery will help to lift poorer households out of poverty. This study uses EU-SILC data to identify shifts in employment observed in Europe during the economic recovery from the Great Recession, and to explore associated implications for poverty and inequality. We find that the recovery has put additional emphasis on education, favouring tertiary qualified workers, to the relative detriment of the lower qualified. There is also some evidence of a decline of 'job quality', with a rise in tenuous forms of employment. Nevertheless, there appears to be clear evidence that new employment following the trough of the Great Recession has helped to reduce risks of poverty and social exclusion.

Keywords: Great Recession, recovery, employment, poverty

JEL codes: J11, J63, I39

1 Introduction

Although many studies have shown that economic growth can help to reduce poverty (e.g. Dollar and Kray, 2002), the extent of ‘trickle down’ and the determinants of “who gets what” remain keen topics of debate; see e.g. Dabla-Norris et al. (2015); Kenworthy et al. (2015); OECD (2015). The continuation of this debate despite an intensive research effort can be attributed in part to the lack of statistical evidence supporting broad-based conclusions. The recent paper by Kenworthy et al. (2015), for example, shows that even if consideration is limited to a sample of OECD countries during the last two decades, diverse views concerning co-movements in inequality and growth are obtained. Such observations suggest that a disaggregated analytical approach may be a fruitful line of research. We pursue this proposition here by analysing employment transitions during the economic recovery from the Great Recession.

Our focus on employment transitions during a period of growth is motivated by recent research which shows that most of the relative decline in incomes observed in the lower half of the distribution during the preceding decade in the OECD can be attributed to underlying labour market trends (OECD, 2015). It is often argued that global shifts, including Skill Biased Technological Change (SBTC), trade, globalisation, offshoring and mechanisation, have tended to reduce labour market returns of lower and middle skilled workers in OECD countries. A range of countries, including those in Europe and the US, have witnessed a “hollowing-out” of their occupational structures – with middle skills disappearing; e.g. Autor (2010); Goos, et al. (2009); Fernandez-Macias (2012); Kenworthy et al. (2015). These pre-existing labour market trends appear to have been exacerbated by the Great Recession, increasing the divide between highly skilled and other workers.

Evidence from Ireland during the Great Recession – one of the most sharply affected European countries – for example, suggests that individual skills (proxied by education, labour market experience, occupation or wages) were particularly important in providing insurance against adverse shocks; see Kelly and McGuinness (2015); Voitchovsky and Nolan (2015). Statistical evidence indicates that job loss in Ireland was related to several dimensions of individual skills, including education, labour market experience, occupation and unobservable skills (proxied by individual wages). Voitchovsky and Nolan (2015), for example, report that higher paid employees were significantly more likely to remain in employment when compared to employees with monthly wages in the middle and lower quintiles, even after controlling for a wide range of individual characteristics, including industries and occupations.

A key question is now how the labour market experiences of different individuals will evolve as countries recover from the recession. In this respect, the expectation that job creation across Europe will be concentrated in high-skill / high-qualification occupations (e.g. EU Skills Panorama, 2014; UKCES, 2014; CEDEFOP, 2013) gives reason to doubt the extent to which the recovery will help lift poorer households out of poverty.

Using recently available household data from the ‘EU Statistics on Income and Living Conditions’ (EU-SILC), this paper explores the characteristics of individuals who have found new employment following the Global Financial Crisis. Our objective is to improve understanding of the pathways through which the Great Recession and nascent recovery have influenced the distribution of income via the labour market. This has important implications for the wider question concerning the influence of economic growth on inequality. Associated detail may also help to improve expectations

concerning the extent to which prevailing labour market settings will off-set rising inequality and poverty, providing important detail for the associated role of transfer policy.

The paper is organised as follows. Section 2 reports some contextual background covering the period and sample of countries considered for analysis. Section 3 describes the data and methods used to explore employment transitions, and empirical results are reported in Section 4. A summary of results is provided in a concluding section.

2 Macro-economic context

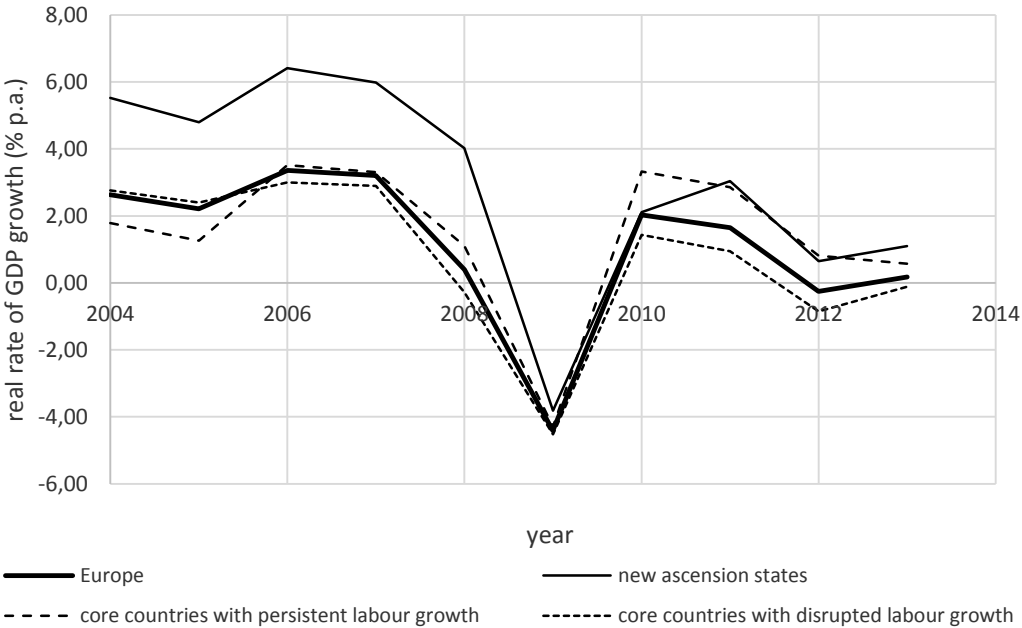
The current analysis is organised around three subgroups of European countries: the ‘new ascension states’, ‘core countries with persistent labour growth’, and ‘core countries with disrupted labour growth’. The new ascension subgroup is comprised of countries that joined the European Union after January 2004, thereby effectively distinguishing Eastern from Western Europe. The group of core countries with persistent labour growth is limited to European countries that are not described as a ‘new ascension state’, and which saw peak to trough variation in the total number of people employed through the Great Recession (from 2007 to 2011) of less than 1%. This is predominantly a group of Northern European countries, exemplified by Germany, but also including Austria, Belgium, Luxembourg, Norway, and Switzerland. ‘Core countries with disrupted labour growth’ is a residual group of European countries not covered by either of the preceding two groups. This residual includes a wide variety of countries, focussed primarily in Central and Southern Europe, but also extending to the UK, Netherlands, and most Nordic countries (excluding Norway).

Figure 1 reports two series of statistics that serve to set the macro-economic context underlying this study: historical variation of rates of production growth and employment in the decade spanning the Great Recession. Starting with the GDP growth rates displayed in panel A, the pronounced influence of the Great Recession is strikingly evident. In the four years leading up to 2007, all of the population subgroups considered here enjoyed robustly positive growth. The average growth across Europe between 2004 and 2007 was reasonably stable about 2.9% p.a., with the new ascension states growing almost twice as fast, at an annual average of 5.7%.

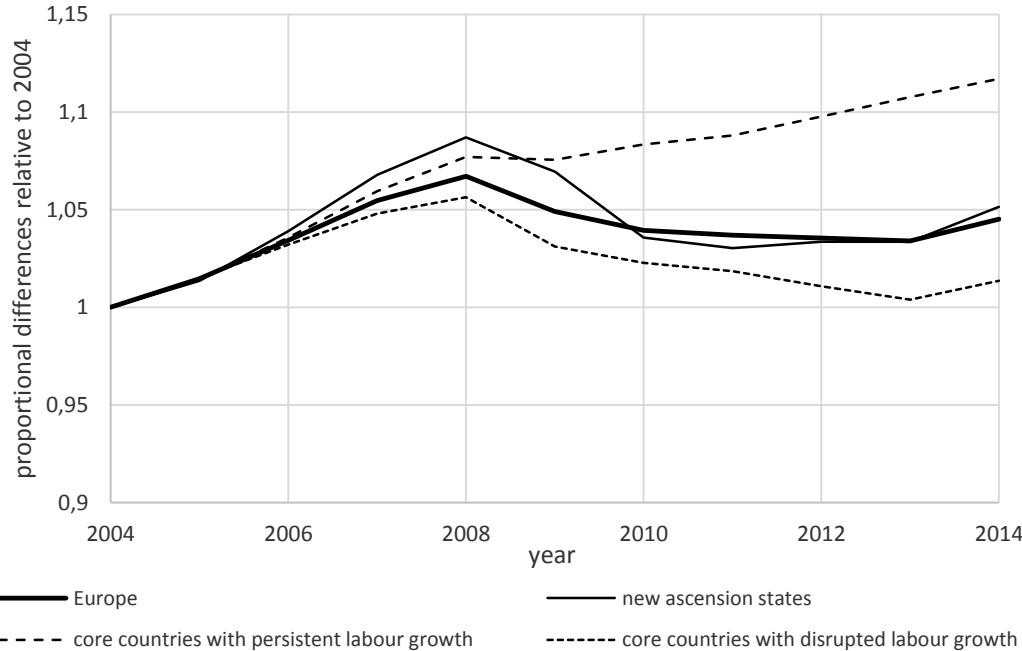
Growth rates are reported to decline for all subgroups into 2008 following the 2007 Financial Crisis, and to fall precipitously into 2009, as the Great Recession took hold. There is little discernible difference between the growth rates reported for all three population subgroups in the year to 2009, with domestic production in each region contracting by approximately 4%. Growth is reported to have rebounded into 2010, to 2% p.a. for Europe on average. Although the new ascension states grew in line with this European average, there was substantial variation among core countries; some core countries saw production rise in excess of 3%p.a., whereas the remainder grew at less than half that rate (by 1.4%). Thereafter, the statistics reported in panel A describe an anaemic recovery, with negative growth returning to Europe on average by 2012.

Figure 1: Production growth and employment aggregates in Europe, 2004 - 2014.

Panel A: Annual rates of real GDP growth



Panel B: Proportional changes in the total numbers of people employed



Source: All calculations based on Eurostat data. Annual GDP real growth rates calculated from Eurostat variable for chain-linked GDP, INDIC_NA, and employment numbers evaluated from Eurostat variable INDIC_EM.
 Notes: Real GDP growth evaluated by comparing chain-linked GDP in a given year with, the same figure reported for the preceding year. 'New ascension states' include data for Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Hungary, Latvia Lithuania, Malta, Poland, Romania, Slovakia, and Slovenia. 'Core countries with persistent labour growth' comprised of Austria, Belgium, Germany, Luxembourg, Norway, and Switzerland. 'Core countries with disrupted labour growth' comprised of Denmark, Finland, France, Greece, Iceland, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, and the United Kingdom.

There is some evidence of a direct-relationship between the rate of growth of production and the number of people employed. That employment should fall when an economy contracts is not very surprising. What is more surprising, however, is the dispersion of employment responses through European countries. Whereas aggregate production of all of the country subgroups considered here followed a similar pattern through the Great Recession (discussed above), and contracted by a similar margin in 2009, their employment trajectories following the 2007 Financial Crisis are very different.

Panel B of Figure 1 indicates that the numbers employed in all three country subgroups followed qualitatively similar trajectories to the European average until 2008, accelerating into 2007, with some dampening into 2008. Thereafter, there is evidence of a divergence, as employment continued to grow in a substantive subset of 'core countries', while at the same time it fell in the remaining two country subgroups.

In part, the disparity between the two subsets of core countries that is referred to above is a natural consequence of the method used to distinguish these subgroups. Nevertheless, the divergence remains interesting for (at least) two reasons. First, the upward trajectory of employment in 'core countries with persistent labour growth' is in stark contrast with the persistent decline in employment reported for 'new ascension states', despite the fact that both subgroups display fairly similar growth paths in production from 2010. Between 2010 and 2013, the production of new ascension states grew almost as much as aggregate production in core countries with persistent labour growth (7.1% c.f. 7.8%), but in the new ascension states this production growth was accompanied by a decline in employment of 3.4%. In contrast, aggregate employment is reported to have increased over the same time in the subset of core countries with persistent labour growth, by 3.0%. These statistics point toward sharply deteriorating labour productivity in the core countries with persistent labour growth, relative to the new ascension states.

Secondly, the subset of core countries with persistent labour growth account for a substantive share of all employment in core countries (30% in 2009). In contrast, of the new ascension states only Malta conforms to the conditions used to identify 'continuous labour growth', and that country accounts for just 0.5% of all people employed in the new ascension states. This type of observation underlies references to a 'two-speed Europe', in which a block largely comprised of northern countries has raced ahead of the rest. It is interesting to consider how the characteristics of individuals who find jobs in these two regions of 'core-Europe' differ, both relative to one another, and to the new ascension states that have seen a disproportionate improvement in labour productivity. These themes are explored in the remainder of the paper.

3 Data and methods

This study explores selected channels through which the labour market recovery from the Great Recession has influenced the extent of material deprivation in European countries. The analysis is based on micro data drawn from the EU Survey on Income and Living Conditions (EU-SILC), focussing on the subset of countries that report data of interest. EU-SILC reports data covering the period 2004 to 2013, and was made available for the study by Eurostat.

The main advantage of EU-SILC for the current study, as opposed to other candidate data sources (e.g. Labour Force Survey data), is that it provides details on individuals' labour market histories as

well as information concerning a wide range of individual and household specific characteristics at the time of survey. Data concerning education, the number of dependent children, the work intensity of the household, or whether the household was at risk of poverty or social exclusion in the preceding year are all reported.

The focus of the current study on the distributional influence of job creation requires some identification of when a worker obtained their employment. This detail is derived from the 12 months labour market recall questions that are reported in each year of the survey. This information provides a useful time dimension to explore shifts in employment participation, over a year, for the entire sample (cross-sectional dimension of the survey). One quarter of interviewees are re-contacted 12 months later for the follow up interview (longitudinal dimension of the survey).

Our sample consists of all people aged 16-75 (self-reported) who, at the time of the interview, state being employed. The wide age band considered here was chosen to obtain a broad view of new jobs in the economy, including potentially marginal positions. From this group, we identify people who were “newly employed”. This variable is based on two labour market recall questions that cover the 12 months preceding the interview. Newly employed individuals include both: 1) all workers who report having changed job (including changing contracts with a pre-existing employer); and 2) workers who report having moved from inactivity/retirement/unemployment into employment. Aggregates over this population subgroup will tend to understate the total number of employment positions created during a year due, for example, to people who gained and then lost a job in the year prior to the survey, or people who gained multiple jobs during the preceding year. Given these limitations, measures of the ‘quantity’ of jobs created are used only to help identify troughs in employment during the Great Recession (see Section 3.1). The remainder of the analysis focuses on the ‘quality’ of the new jobs and job holders. All the variables used in the analysis are defined in Table A1 reported in the Appendix.

3.1 Troughs and recovery years

The analysis reported in Section 4 is structured around comparisons between observations reported for the country-specific years identified as labour troughs of the Great Recession, and the subsequent recovery period covered by the available EU-SILC data (to 2013). Given the aim of the paper, the trough is defined as the year with the lowest share of new jobs in the population at work, as described by the EU-SILC data series. This year may differ slightly from the trough in total number of people employed (macro series reported in Section 2), as the total number of people employed also depends on the number of jobs lost each year. In practice, however, for countries with a trough pattern, the timing of the trough in the share of new job holders (from EU-SILC data) almost always coincides with the trough in the total number of people employed, as reported in macro series. For several countries there was no clearly discernible trough reported by the EU-SILC data. In these cases, if a trough was evident in the macro series concerning total numbers employed (Section 2), then this was adopted for the analysis. In cases where a trough could not be identified in either EU-SILC or the macro series, a notional ‘trough’ was adopted, defined as 2009. When data for the exact trough year was not available in EU SILC data (e.g. UK, 2009) the closest subsequently available year was adopted for analysis.

3.2 Sample of countries

The sample of countries included for analysis is reported in Table 1. This table also describes the share of ‘newly employed’ of all workers in each survey year, and the troughs identified for analysis. Table indicates that, of the set of 6 ‘core countries with persistent labour growth’ discussed in Section 2, the study in Section 4 is limited to Austria, Belgium, Switzerland, and Luxembourg (omitting Norway and Germany). Similarly, of the 12 ‘core countries with disrupted labour growth’, the study in Section 4 focusses on Spain, France, Ireland, Portugal, and the UK. Finally, of the 13 ‘newly ascended states’, analysis in Section 4 omits Bulgaria, Cyprus, Lithuania, and Slovenia. Importantly, the temporal variation of numbers employed reported for the subsets of countries included for analysis in Section 4 closely reflect the variation discussed for the wider set of European countries in Section 2: region specific deviations from 2004 between the sample considered in Sections 2 and 4 differ by less than 1 percentage point in all years, with two exceptions (core countries with persistent labour growth in 2011, 1.06%; core countries with disrupted labour growth in 2014, 1.07%).

The sample of countries referred to above was selected to include only those that generally reported a complete set of data covering our variables of interest, and in which at least one year of recovery is described by the available time series. As Table 1 indicates, most countries report a ‘recovery period’ of at least 2 years (Spain and Portugal being the exceptions). A useful point to bear in mind when interpreting results reported in Section 4 is that the recovery period reported for core countries with persistent labour growth tends to be longer than for the remaining two population subgroups. As such, differences between subgroups may, in part, be attributable to the duration of recovery.

Table 1: Share of new job holders among population at work

country	2009	2010	2011	2012	2013
Austria	0.137	0.176	0.169	0.17	0.162
Belgium		0.093	0.116	0.113	0.101
Switzerland	0.143	0.133	0.145	0.133	0.128
Czech Republic			0.107	0.111	0.102
Estonia		0.159	0.189	0.192	0.19
Spain				0.119	0.143
France	0.115	0.129	0.132	0.121	0.115
Croatia		0.11	0.127	0.129	0.135
Hungary		0.135	0.133	0.142	0.153
Ireland		0.095	0.129		0.141
Luxembourg	0.108	0.107	0.131	0.129	0.133
Latvia	0.093	0.166	0.165	0.158	0.141
Malta	0.114	0.108	0.097	0.099	0.09
Poland	0.126	0.159	0.155	0.158	0.15
Portugal				0.108	0.109
Romania	0.03	0.036	0.037	0.033	0.025
Slovakia		0.104	0.108	0.103	0.106
UK		0.156	0.16	0.127	0.129

Note: authors’ computations using EU-SILC data. Working status based on self-reported status at the time of the interview. All workers aged 16-75 included. Shaded cells are the country specific trough years, subsequent years constitute the recovery period for each country

4 Empirical results

This section is designed to consider whether and in what ways labour market transitions associated with each country's recovery from the Great Recession are likely to affect inequality and poverty. Analysis is structured around three subgroups of European countries, and two statistics describing labour market variation. As discussed in Sections 2 and 3, the three country subgroups are: new ascension states (NMS), core countries with persistent labour growth (CGR), and core countries with disrupted labour growth (CDT). Statistics describing temporal variation of each characteristic between each country's employment trough and the observed recovery period are reported for the entire working population, and for the subgroup of workers who obtained the position held at their time of interview during the 12 months preceding the interview (newly employed).

Discussion is divided into three subsections. Section 4.1 focusses upon characteristics of the employed population. Section 4.2 explores the types of employment held. Section 4.3 discusses measures of income distribution and poverty.

4.1 *Characteristics of the employed*

Table 2 reports summary statistics for employee characteristics, measured in the year of the labour trough following the 2007 Global Financial Crisis, and in the recovery years for which data are currently available (to 2013). Starting with the left-most column of statistics reported in the table, there were close demographic similarities of employed populations at the trough between the core countries that did and did not report persistent labour growth. Relative to the core countries, the employed populations of new ascension states tended to be almost 1 year younger on average, included more married people with dependent children, and a substantively larger share of people educated to upper-secondary level.

A key distinguishing figure between the core countries that did and did not report persistent labour growth through the Great Recession is the proportion of non-native workers. Non-native workers were more than twice as prevalent in core countries with persistent labour growth as in those with disrupted growth (14.9% c.f. 7.2%), and were practically non-existent in the new ascension states. It must be acknowledged, however, that this difference between core countries is partly attributable to the conspicuous omission of Germany from the set of countries reporting persistent growth, which acts to exaggerate the influence on the reported statistics of Switzerland and Luxembourg (countries with the highest proportions of foreign born residents across the OECD).

The 'change' statistics for 'all employed' people reported in Table 2 indicate the extent to which the incidence of alternative worker characteristics have changed since the employment trough. These statistics indicate some clear trends throughout European countries. In all three country subgroups, the average worker age has increased, the proportion of parents has declined, and the proportion of workers with tertiary education has increased. Furthermore, the proportion of female workers has not declined, as have the proportion of non-native workers (both of which increased throughout core countries).

Table 2: Demographic characteristics of employed population during recovery from the Great Recession, by region and employment tenure (percentage points, unless otherwise stated)

	all employed			newly employed	
	trough	recovery	change*	recovery	diff.**
core countries with persistent labour growth					
demographics					
age (years)	41.3	41.7	0.3	35.0	-6.4
women	44.8	45.3	0.4	49.5	4.7
married	65.1	65.0	-0.1	52.6	-12.5
with dep. children	48.3	48.0	-0.4	48.0	-0.3
non-native	15.1	16.1	1.1	20.4	5.3
education					
tertiary education	32.7	35.1	2.4	30.0	-2.7
upper secondary	49.7	49.6	-0.1	52.2	2.5
lower education	17.4	15.1	-2.3	17.6	0.3
core countries with disrupted labour growth					
demographics					
age (years)	41.7	42.0	0.4	35.4	-6.3
women	46.7	47.0	0.3	47.3	0.6
married	69.8	70.8	1.0	58.5	-11.2
with dep. children	48.8	48.2	-0.7	45.4	-3.5
non-native	7.2	7.5	0.3	11.7	4.5
education					
tertiary education	34.8	37.1	2.3	34.0	-0.8
upper secondary	36.0	37.4	1.4	38.0	2.0
lower education	28.5	24.9	-3.7	27.1	-1.4
new ascension states					
demographics					
age (years)	40.9	41.5	0.5	36.0	-4.9
women	45.2	45.2	0.0	46.8	1.6
married	71.4	71.7	0.3	57.5	-13.9
with dep. children	56.2	55.1	-1.1	55.3	-0.9
non-native	0.9	0.9	0.0	1.2	0.2
education					
tertiary education	21.9	24.4	2.5	23.4	1.5
upper secondary	66.4	64.8	-1.6	65.6	-0.8
lower education	11.6	10.4	-1.2	10.8	-0.8

Source: Authors' computations using data from EU-SILC provided by Eurostat

Notes: For definitions, see Section 2. Education statistics for 'core countries with disrupted labour growth' omit data for the UK. 'trough' report statistics in the year of the trough in labour numbers following the 2007 Global Financial Crisis. 'recovery' report averages over observed years following the trough for each country, with country statistics weighted by size of employed population. * 'change' statistics report the difference between the 'recovery' and the 'trough'. ** 'diff.' statistics report excess of 'newly employed' during the recovery to 'all employed' during the trough.

The observation that the average age of workers has increased during the recovery is consistent with an emphasis on employment retention, as opposed to a replenishment of early career individuals. This has worrying implications for the life-course prospects of the entire generation of individuals who would normally have entered the workforce at the advent of the crisis, exaggerated by the long duration of the Great Recession.

The observation of increased female representation through the recovery continues a long-run trend, in which recessionary periods have resulted in a disproportionate reduction of the male workforce. Furthermore, the rise in the proportion of non-native workers suggests that part of the burgeoning labour demand associated with the recovery in core countries has been met through economic migration, something that the free-movement-of-labour is designed to facilitate.

The relative rise in tertiary education among workers is broadly supportive of the expectation, stated in the introduction, that job creation across Europe will be concentrated in high-skill / high-qualification occupations (e.g. EU Skills Panorama, 2014; UKCES, 2014; CEDEFOP, 2013). Taken in isolation, this outcome suggests that the nascent recovery is likely to have a limited mitigating effect on poverty, given the skew of those at risk of poverty toward lower education.

The statistics reported for all employees that are discussed above provide a perspective on the net flows of people into and out of work that have been observed since the employment trough of the Great Recession. They do not, however, provide an indication of who was disproportionately likely to find new work. The two columns of statistics reported to the right of Table 2 are designed to fill in this detail.

The column second from the right in Table 2, headed 'recovery', reports average characteristics observed during the labour market recovery for the subset of workers who report having found new work in the 12 months prior to their survey. When the characteristics reported in this column exceed those reported for 'all employed' at the 'trough' (left-most column of statistics in the table), then the inflow of workers will have acted to increase incidence of the respective characteristic in the employed population. To aid interpretation, we consequently report the excess of the average characteristics for newly employed over the trough in the right-most column of the table, headed 'diff.'.

The 'recovery' statistics reported for the 'newly employed' in Table 2 indicate that new workers following the trough had an average age between 35 and 36, were younger in the core countries with persistent labour growth, and older in the new ascension states. In all cases, new employees were younger than the average worker age at the trough, by 5 to 6.5 years. Despite this, however, the average age of employed people increased in every regional subgroup. The implication is that, although younger people were more likely to find work following the trough, they were also more likely to lose work, and the latter of these two dominated average statistics. That younger people should display higher employment transitions than older people is not surprising. However, in context of the generally weak figures for production growth and the anaemic recovery in employment numbers described for a large subset of European countries in Section 2, the tenuous nature of employment status among younger people may have exacerbated the negative effects on life-course prospects of the Great Recession.

In contrast, the statistics reported for women indicate that the average increase in incidence of women in the population of employed was partly attributable to an excess of women among the newly employed, relative to the trough of the Great Recession. Put another way, women were more

under-represented among workers at the trough than among the newly employed during the recovery, and this contributed to the increase in the share of women during the recovery. It is notable that this is most evident for the core countries with persistent labour growth, for which there were almost 6 men for every 5 women employed at the trough, but amongst which there were almost as many women as men with new employment following the trough.

The largest differences between the characteristics of the newly employed, and the characteristics of all workers at the trough are reported for the proportions married. These are more than 10 percentage points lower among the newly employed, than they are in the total population of employed, in all three regions considered here. In contrast, the proportion of married people among all workers is either observed to increase during the recovery (in core countries with disrupted labour growth and the new ascension states), or to decline very weakly (in core countries with persistent labour growth). This combination of statistics implies that married people are much more likely to retain their employment than single people.

In part the observation that married people are more likely to retain their employment echoes the greater employment volatility identified for younger people that is discussed above, as younger people tend to display lower marital rates. But the scale of the differences identified concerning the proportions married suggest that there is more at work than simple age differentials. To the extent that single people (including single mothers), are skewed toward the bottom of the income distribution and at risk of poverty, these statistics give some support to the argument that the nascent employment recovery has not helped mitigate distributional concerns.

Statistics for all three country subgroups indicate a decline in the proportion of all workers who have dependent children, and that the subset of people obtaining new work has contributed to this decline. These statistics are consistent with the declining fertility rates that have been observed in most European countries.

Statistics for education are quite striking. In core countries, the proportions of newly employed who hold tertiary level qualifications understate the proportions of all workers holding tertiary education at the employment trough, by 2.7 percentage points in continuous labour growth countries, and 0.8 points in disrupted countries. This is in contrast to the 2.3-2.4 percentage point increase in the proportion of all workers holding tertiary level qualifications during the recovery. These statistics highlight the role of education in providing insurance against employment uncertainty, and the relative exposure faced by lower educated – and typically lower income – people.

In the new ascension states, tertiary educated people accounted for almost 1 in 4 of all newly employed people following the employment trough of the Great Recession. This exceeds the share of all employees who held tertiary qualifications at the trough by 1.5 percentage points, thereby contributing to the 2.5 percentage point growth in the proportion of graduates in the employed population during the recovery. It is reasonable to suppose that in new ascension states, not only did tertiary education insure against employment loss, it also substantively increased the likelihood of finding new employment.

People educated to upper secondary level appear to be in fairly strong demand by the labour markets of core countries during the recovery, accounting for more than half of all newly employed in the continuous labour growth countries, and almost 40 per cent in the disrupted growth countries. These proportions among the newly employed exceed the respective proportions of all workers at the trough by 2.0-2.5 percentage points. While this excess appears to have contributed to an

increase in all workers with upper secondary education in the disrupted labour growth countries, it was entirely off-set by coincident employment loss among the persistent labour growth countries.

The labour statistics reported for people with less than upper-secondary education paint a uniformly negative picture, with anaemic and predominantly declining representation among the newly-employed, and substantively declining representation among all employees.

4.2 Characteristics of employment

Table 3 reports characteristics concerning the types of employment held by workers, in a similar format to the statistics reported in Table 2 (omitting 'recovery' data for 'all employed' to economise space).

The statistics reported in the top half of Table 3 describe an interesting variation across the three geographic subgroups. Data for all employees at the trough indicate that the core group of countries displayed similar general characteristics of employment, relative to those reported for new ascension states. In both subgroups of core countries, the share of workers was approximately 8 percentage points higher, the incidence of part-time employment was just over 10 percentage points higher, the incidence of permanent contracts was around 10 percentage points higher, average experience was two years higher, and the incidence of employment in small companies was just over 10 percentage points lower.

However, since trough employment in core countries with disrupted labour growth have altered in a fashion to new member states, which departs the variation observed for core countries with persistent labour grown in a number of important ways. Focussing on the column of statistics reported second from the left for each country subgroup, the distribution of all workers in CGR during the recovery period have skewed towards employees, away from part-time work, toward permanent contracts, and away from small companies. All of these adjustments reverse coincident trends observed in the remaining two country subgroups.

Statistics reported for the newly employed suggest that these differences in temporal variation of the populations employed in the country subgroups are predominantly attributable to differences in the balance between people who gained and lost jobs, rather than to differences in hiring policies. Specifically the right-most column of statistics reported for each country subgroup, which describe the distributional influence of individuals with new employment relative to the labour market at the trough, describe strikingly similar variation across the three country subgroups. In general, relative to the trough, newly employed people during the recovery were more likely to be employees, work part-time, to want more hours, on a temporary contract, with fewer years of experience, and in small companies.

Table 3: Employment characteristics during recovery from the Great Recession, by region and employment tenure (percentage points, unless otherwise stated)

	core with persistent labour growth				core with disrupted labour growth				new ascension states			
	all employed trough	change* recovery	newly employed recovery	diff.** diff.**	all employed trough	change* recovery	newly employed recovery	diff.** diff.**	all employed trough	change* recovery	newly employed recovery	diff.** diff.**
employment type												
employees	87.9	0.7	93.2	5.2	87.9	-0.7	91.4	3.6	80.0	-0.6	85.9	5.8
part-time	16.9	-0.4	20.0	3.1	15.5	0.0	22.2	6.7	4.8	0.0	9.5	4.7
want more hours	2.2	0.1	4.3	2.1	3.7	0.7	9.8	6.0	1.0	0.3	3.4	2.4
permanent contract	78.4	0.7	68.5	-9.8	74.5	-1.2	49.9	-24.6	67.8	-1.5	37.6	-30.2
experience (years)	20.2	0.4	14.2	-6.0	19.6	0.3	12.8	-6.8	18.1	0.4	12.1	-6.0
small companies	41.2	-0.6	44.6	3.4	42.1	0.6	45.8	3.7	53.5	0.1	58.7	5.2
occupations												
managers / legislators	8.5	-0.9	5.8	-2.7	5.4	-1.4	2.7	-2.7	10.4	-2.2	5.2	-5.2
professionals	16.9	4.4	19.1	2.2	14.0	0.9	12.8	-1.2	14.8	3.8	15.9	1.0
associate prof.	19.3	-1.6	16.2	-3.1	13.5	-0.3	12.4	-1.1	15.3	0.6	14.5	-0.9
clerks	13.7	-2.1	10.3	-3.4	7.5	-0.4	8.0	0.5	12.4	-2.0	9.7	-2.7
service and sales	12.3	2.1	18.0	5.7	13.1	1.7	19.0	5.9	15.8	1.4	20.8	5.0
skilled agricultural	2.8	0.0	1.7	-1.1	9.9	-0.7	4.2	-5.6	2.6	0.0	2.0	-0.7
craft and trades	11.5	0.5	13.6	2.0	17.3	0.1	15.3	-2.0	10.7	-0.7	10.0	-0.7
machine operators	5.4	-0.1	5.9	0.4	11.2	0.2	12.0	0.8	7.1	-0.7	6.3	-0.9
elementary	9.6	-2.2	9.5	-0.1	8.3	-0.1	13.7	5.4	10.8	-0.3	15.8	4.9

Source: Authors' computations using data from EU-SILC provided by Eurostat

Notes: For definitions, see Section 2. Experience statistics for 'new ascension states' omit data for the Hungary. 'trough' reports statistics in the year of the trough in labour numbers following the 2007 Global Financial Crisis. 'recovery' reports averages over observed years following the trough for countries, with country statistics weighted by size of employed population. * 'change' statistics report the difference between the average 'recovery' years and the 'trough'. ** 'diff.' statistics report excess of 'newly employed' during the recovery to 'all employed' during the trough.

The observation that the incidence of part-time employment among all workers has not increased in any country subgroup during the recovery, despite a higher share of newly employed reporting part-time employment than at the trough, suggests that part-time employment is associated with higher exit rates than full-time employment. Similar observations apply to the statistics reported for the share of workers with permanent contracts, and in small companies (though somewhat more mixed for core countries with disrupted labour growth and new ascension states). These observations, combined with the unambiguous increase in the proportion of workers reporting that they would like more hours suggest that the nascent labour recovery in Europe is disproportionately comprised of tenuous employment that continues to expose the newly employed to substantive risk.

The occupational statistics reported in the bottom half of Table 3 suggest a broadly consistent set of transitions during the recovery in all three geographic regions. The incidence of managers (including senior officials, armed forces, and legislators), associate professionals (including technicians), and clerks, have all declined – both as a share of all workers and in the proportion of new workers – relative to the population of all workers at the trough. In contrast, the reverse is generally true for professionals and service and sales staff. Mixed results are generally reported for occupations lower in the list, with the possible exception of ‘elementary’ occupations, which declined as a proportion of all workers during the recovery. While this decline reflects a coincident reduction in the proportion of new workers in core countries with persistent labour growth, it is driven primarily by higher rates of job loss that the population average in the remaining two geographic subgroups.

4.3 Poverty and inequality

The incidence of the risk of poverty and social exclusion, and of work intensity are reported in Table 4. These variables are distinguished from the other individual-specific variables discussed in this paper, as they are defined with respect to each worker’s household for a reference period of 12 months, usually the preceding calendar year to the date of survey, except for Ireland (the preceding 12 months from the date of survey) and the UK (current year).

A key implication described by the poverty and social exclusion measures reported in Table 4 is the importance of work in mitigating the risks of poverty and social exclusion (as poverty and social exclusion are measured here). This effect is revealed by the extent to which risks of poverty and social exclusion in the year preceding each survey among newly employed exceed those of all workers. In core countries, newly employed are identified as approximately twice as likely as the working population to have been at risk of poverty or social exclusion, and around two thirds more likely in the new ascension states. Getting people into work, and retaining employment, is crucially important in combatting poverty and inequality.

The statistics reported for core countries with persistent labour market growth in the top panel of Table 4 indicate slight declines during the recovery in the risk of poverty and social exclusion during the year preceding the survey for all workers. The observation made above, that the incidence of newly employed at risk of poverty or social exclusion is almost twice that of all workers tends to put upward pressure on the figure for the incidence of poverty and social exclusion in the population of all workers. That the risk of poverty among all workers nevertheless fell is a product of high rates of employment retention of workers in this country subgroup, and the bearing that this retention has on financial circumstances.

Table 4: Poverty indicators of workers during recovery from the Great Recession, by region and employment tenure (percentage points)

	all employed			newly employed	
	trough	recovery	change*	recovery	diff.**
core countries with persistent labour growth (CGR)					
poverty	7.4	7.3	-0.1	13.7	6.4
social exclusion	9.3	9.0	-0.3	17.4	8.1
work intensity	81.3	81.1	-0.2	70.0	-11.4
low work intensity	1.2	1.4	0.1	4.8	3.5
core countries with disrupted labour growth (CDT)					
poverty	8.4	9.0	0.6	16.5	8.2
social exclusion	11.0	12.1	1.1	24.7	13.7
work intensity	83.2	82.1	-1.1	64.7	-18.5
low work intensity	1.4	1.8	0.4	9.9	8.5
new ascension states (NMS)					
poverty	11.2	11.6	0.4	18.8	7.6
social exclusion	20.6	20.7	0.1	31.1	10.5
work intensity	83.6	83.2	-0.4	65.6	-18.1
low work intensity	0.8	0.9	0.1	6.3	5.5

Source: Authors' computations using data from EU-SILC provided by Eurostat

Notes: For definitions, see Section 2. 'trough' report statistics in the year of the trough in labour numbers following the 2007 Global Financial Crisis. 'recovery' report averages over observed years following the trough for countries, with country statistics weighted by size of employed population. * 'change' statistics report the difference between the 'recovery' and the 'trough'. ** 'diff.' statistics report excess of 'newly employed' during the recovery to 'all employed' during the trough.

Statistics for work intensity among employed in all country subgroups indicate a slight reduction in hours intensity during the recovery. This shift is partly attributable to the newly employed, among whom rates of work intensity during the preceding year were disproportionately low. The decline in work intensity among all workers in CGR appears in contrast to the coincident rise in full-time employment (decline in part-time employment) reported in Section 4.2. The two sets of statistics are reconciled by the fact that the measures of work intensity reported here are measured at the household level: households of workers on average experienced declining hours of employment. This may explain the increasing preference for additional labour hours reported during the same period, a preference that may itself be responsible for the rise in the incidence of full-time employment among all workers. In context of limited labour opportunities, families may become more reliant on the labour income generated by a single family member, increasing the scale of risks associated with individual-specific unemployment. These points also apply to the statistics reported for core countries with disrupted labour growth and new member states, albeit subject to slightly different scales in the statistics reported for each country subgroup.

A somewhat bleaker picture is painted for CDT and NMS country subgroups by the statistics reported in Table 4. The incidence of risks of poverty and inequality among all workers at the trough were approximately 1 percentage point higher in CDT than in CGR, and were a further 3 percentage points higher for poverty, and 9 percentage points higher for social exclusion in the NMS. Furthermore, during the recovery these differences with CGR have increased, as rates of poverty and inequality among all workers increased. The increase in rates of poverty and social exclusion during the

recovery was most substantial in core countries with disrupted labour growth, which reflects the weaker growth in production in those countries during the recovery, and more substantive fall in employment numbers.

The increases reported for rates of poverty and social exclusion among the employed populations in core countries with disrupted labour growth and new ascension states are partly attributable to the entry of new workers, among whom the incidences of poverty and social exclusion were conspicuously high. In core countries with disrupted labour growth, almost 1 in every 6 newly employed people were identified as at risk of poverty in the preceding year, and 1 in every 4 was at risk of social exclusion. In new ascension states, these incidences were higher at almost 1 in every 5, and 1 in every 3 respectively. Given these observations, a key focus of interest concerns the placement of newly employed in the wage distribution.

Statistics designed to describe the placement of newly employed during recovery from the Great Recession in the wider earnings distribution, and the likely bearing that this had on measures of (relative) deprivation are reported in Table 5. The top panel of the table indicates, for a selected set of countries for which the necessary data were available, the location of new employees in the distribution of all employees, reporting incidence with respect to country and year specific quintile thresholds. This panel of the table indicates that newly employed people were skewed toward the lower end of the earnings distribution in all five countries for which data were available.

The skew toward the bottom of the earnings distribution of newly employed people following the labour market trough of the Great Recession is most evident for Poland, a new ascension state, in which two out of every five newly employed were in the bottom earnings quintile. Among the remaining 'core countries', comparative statistics between countries are mixed. New workers in Ireland (a core country with disrupted labour growth) display a stronger skew toward the bottom of the distribution than all other core countries, except Austria (a core country with persistent labour growth); in which fewer newly employed were in the highest earnings quintile. Relative to Ireland and Austria, new workers in the UK (disrupted growth) and Switzerland (persistent growth) tended to be placed higher in their respective earnings distributions. Furthermore, a larger share of newly employed during the recovery in the UK were placed above the second earnings quintile than in Switzerland, but fewer in the fourth and fifth quintiles.

The top panel of Table 5 does not provide any indication of whether the skew of newly employed people toward the bottom of their respective earnings distribution were sufficient to entrench risks of poverty / social exclusion. Data in the bottom half of the table are designed to address this gap, by reporting the incidence of employees who did not report obtaining their prevailing job in the preceding year, but were at risk of social exclusion. These statistics provide a useful counterpart for comparison against statistics reported in the top panel of the Table.

Table 5: Distribution of new employees and employees at risk of social exclusion in wider earnings distribution (percentage points) in the recovery period from the Great Recession

country	group*	quintile				
		lowest	2	3	4	highest
newly employed						
Austria	CGR	31.8	25.3	19.6	14.3	9.1
Switzerland	CGR	32.6	21.6	16.3	14.6	14.9
Ireland	CDT	34.1	26.5	18.5	11.0	10.0
UK	CDT	28.5	24.5	18.8	14.9	13.3
Poland	NMS	40.8	23.1	16.0	11.0	9.2
at risk of social exclusion among all employees**						
Austria	CGR	38.1	27.5	16.5	10.9	7.0
Switzerland	CGR	42.9	30.8	21.9	3.6	0.8
Ireland	CDT	53.0	25.1	12.5	6.5	2.9
UK	CDT	54.1	26.8	12.6	5.2	1.4
Poland	NMS	33.5	28.9	20.9	11.7	5.0

Source: Authors' computations using data from EU-SILC provided by Eurostat

Notes: Quintile thresholds country and year specific, defined for full employee population. * CPG denotes core country with persistent labour growth, CDG denotes core country with disrupted labour growth, NAS denotes newly ascended state. ** population excludes newly employed.

Encouragingly, there is a stronger skew toward the bottom of the earnings distribution reported for workers at risk of social exclusion than is evident for the newly employed in all four of the core countries reported in Table 5. This is most conspicuously the case for the UK, where the proportion of employed people at risk of social exclusion located in the bottom earnings quintile is more prevalent than newly employed people by almost 2 to 1. This effect is least evident for Austria, but even there the proportion of newly employed in the lowest two earnings quintiles was just under 10% lower than the proportion of employees at risk of social exclusion. These statistics suggest that the rise in employment associated with the recovery from the Great Recession is an important driver of reduced poverty and inequality, at least in core countries.

The above discussion is consistent with much of the sentiment underlying contemporary debate concerning the importance of employment in mitigating inequality. In this regard, the statistics reported for Poland represent something of a cautionary tale. Data reported in Table 5 indicate that, in contrast to the subset of core countries, the distribution of newly employed people was skewed more toward the extremes of the earnings distribution, including a 7.3% higher incidence in the bottom quintile, than the sample of all (other) employees identified as at risk of social exclusion. Hence, even if employment may have helped improve the income of these newly employed people, the increase may have been insufficient to lift them out of poverty. This type of effect may have contributed to the slight increases reported for the incidence of risk of poverty and social exclusion among new ascension states on average. These data also highlight the importance of country specific variation that is obscured by the current focus on subgroup averages, which merits further research.

5 Conclusions

There is a wide-spread expectation among policy makers that job creation across Europe during the recovery from the Great Recession will be concentrated in high-skill / high-qualification occupations, giving reason to doubt the extent to which the recovery will help to lift poorer households out of poverty. This study uses EU-SILC data to identify shifts in employment observed in Europe during the economic recovery from the Great Recession, and to explore associated implications for poverty and inequality.

Statistics reported here suggest that tertiary education, while not delivering an unambiguously higher likelihood of being hired following the employment trough of the Great Recession, has delivered measurable security against job loss. Furthermore, our results at the opposite end of the educational spectrum suggest that individuals with less than upper secondary education are both less likely to obtain employment, and are subject to more substantive risks of job loss than people with higher education. These observations tend to support the conjecture that employment is being created in high-qualification occupations, to the relative detriment of lower educated population subgroups.

Our statistics suggest that, although younger people were more likely to find work following the Great Recession trough than older people, they were also more likely to lose work. The latter of these two effects appears to have dominated on average during our sample period. That younger people should display higher employment transitions than older people is not surprising. However, in context of the generally weak production growth observed in Europe since the 2007, and the anaemic recovery in employment numbers through the Great Recession, the tenuous nature of employment status among younger people may have contributed to exacerbate the negative effects on life-course prospects of the Great Recession.

Indeed, our results suggest that the nascent labour recovery in Europe following the Great Recession has led to a rise in tenuous forms of employment, exposing new workers to substantive risk. In general, relative to the trough, newly employed people during the recovery were more likely to be employees, work part-time, on a temporary contract, with fewer years of experience, and in small companies. Exit rates from employment appear to be disproportionately higher in relation to all of these employment characteristics. Furthermore, statistics for work intensity among employed in all country subgroups indicate a slight reduction in hours intensity during the recovery. These statistics, in conjunction with a general rise in the share of survey respondents reporting a desire to increase hours of employment, suggest that the recovery may be eroding 'job quality' in labour markets on average. In context of limited labour opportunities, families may have become more reliant on the labour income generated by a single family member, increasing the scale of risks associated with individual-specific unemployment.

Statistics describing risks of poverty and social exclusion suggest that these are more pronounced among individuals without employment. In core European countries, newly employed are identified as approximately twice as likely as the entire employed population to have been at risky of poverty or social exclusion as all employees, and around two thirds more likely in the new ascension states. These statistics highlight the importance of getting people into work, and retaining employment, in combatting poverty and inequality.

Data for employees in selected countries suggest that individuals with new employment tend to be skewed toward the bottom of the earnings distribution. Encouragingly, however, there a stronger skew toward the bottom of the earnings distribution is identified for workers at risk of social exclusion than is evident for the newly employed in the core European countries analysed, supporting the conjecture that the new employment positions helped to mitigate social exclusion. In contrast, the reverse is true for Poland (a new ascension state) suggesting that, even if employment may have helped increase the income of the newly employed in that country, the improvement may have been insufficient to lift them out of poverty. This last observation represents a cautionary example against the assumption that employment – of any kind – helps to mitigate poverty and social exclusion.

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Appendix

Table A1: Definition of the variables used in the analysis

Variables	Definition	Reference time period
Workers/ all employed	If respondent at work at the time of the interview. Self-reported	at the time of the interview (current)
New job holders	Dummy. If the respondent is at work at the time of the interview AND reports having changed job in the 12 months prior to the interview (pl160) AND/OR their most recent change of status - over the previous 12 months - has been from unemployment/retirement/inactivity to employment (pl180). Note: a change of job can include a change of contract with the same employer, in the context of seasonal or casual jobs for example.	at the time of the interview (current) based on the history of the 12 months prior to the month of the interview
<u>Demographics</u>		
Age	Defined in years	at the time of interview
Married	Dummy. Coded 1 if the respondent is married or is currently living with a partner, in the same household, in a consensual union with no legal basis	at the time of the interview (current)
With dep. child/ren	Dummy. Coded 1 if the respondent's household is one with dependent children	Household level, at the time of the interview
Non-native	Dummy. Coded 1 if the respondent citizenship differs from their country of residence.	at the time of the interview (current)
Tertiary education	Dummy. Coded 1 if the respondent has completed tertiary education or higher.	Refers to the highest level of education successfully completed - ISCED classification - at the time of the interview (current)
Upper secondary	Dummy. Coded 1 if the respondent has completed upper secondary of post-secondary non tertiary	
Lower education	Dummy. Coded 1 if the respondent has completed lower secondary education or a lower level of education	
<u>Labour market</u>		
Employee	Dummy. Coded 1 if the respondent is working as an employee (excl. family workers). Self-reported.	at the time of the interview (current)
experience	Number of years spent in paid work. Self-reported	at the time of the interview (current)
Would like more hours	Dummy. Coded 1 if the respondent usually works less than 30 hours a week (in all jobs) and would like but cannot work longer hours.	at the time of the interview (current)
Permanent contract	Dummy. Coded 1 if the respondent's main job is based on a permanent contract or contract of unlimited duration (as opposed to a temporary job or work contract of limited duration)	at the time of the interview (current), employees only
Part-time work	Dummy. Coded 1 if the respondent usually works less	at the time of the

	than 30 hours a week (all jobs)	interview (current)
Small company	Dummy. Coded 1 if respondent's main job is in a company with up to 19 people working, in total.	at the time of the interview (current)
Occupations	Based on the ISCO-88 (COM) classification. Armed forces included with managers here. There was a slight change in coding around 2010-2011 depending on the countries, but the change should have no impact on the definition of occupations at the 1 digit level.	at the time of the interview (current)
<u>Poverty, wages</u>		
At risk of poverty	Dummy. Coded 1 if the respondent's equivalised disposable income < 60% median equivalised disposable income. Computed by Eurostat.	Variables defined at the household level. Relates to the person's household situation in the reference period, that is, usually the year before the interview (previous year)
Work intensity	Total share of household time (defined in months) worked in the reference year, taking into account the activity of all eligible household members. For persons who declared that they worked part-time, the number of months worked in full-time equivalent roles is estimated on the basis of the number of hours usually worked at the time of the interview. Are excluded household members aged less than 18 years old, or aged 18-24 in education or inactive, or aged 60 and over and inactive. This measure is not computed for households with no eligible members. Variable computed by Eurostat.	
Low work intensity	Dummy. Coded 1 if the work intensity of the household in the reference period was 20% or less. Household with no eligible members are excluded. Variable computed by Eurostat.	
Social exclusion	Dummy. Coded 1 if the respondent's household was at risk of poverty in the reference year and/or was a low work intensity household and/or was severely materially deprived. Material deprivation defined as the inability to afford a selection of items that are considered to be necessary or desirable. Constructed by Eurostat.	
Wages	Gross monthly earnings in main job, before tax and social insurance contributions .Includes usual paid overtime, tips and commission but excludes income from investments-assets, savings, stocks and shares. (py200g)	
Wage quintiles	Computed on gross monthly earning of the entire population of people working as employees at the interview. Year and country specific. Year/country observations with more than 10 percent of missing wages information for new job holders. Missing observations are typically higher among new job holders than in the rest of the employee population. The quintile analysis is conducted on countries that have at least 2 years of data available for the recovery period.	Defined at the individual level, all employees, for the month of the interview (current month)

ImPRovE: Poverty Reduction in Europe. Social Policy and Innovation

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

The two central questions driving the ImPRovE project are:

How can social cohesion be achieved in Europe?

How can social innovation complement, reinforce and modify macro-level policies and vice versa?

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

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

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