# ‘Bad jobs’ recovery? European Job Quality Index 2005-2015

Agnieszka Piasna

**Working Paper 2017.06**

etui.

# ‘Bad jobs’ recovery? European Job Quality Index 2005-2015

Agnieszka Piasna

**Working Paper 2017.06**
**european trade union institute**

**Agnieszka Piasna** is a senior researcher at the European Trade Union Institute (ETUI) in Brussels.
Contact: apiasna@etui.org

Brussels, 2017

Print: ETUI Printshop, Brussels

D/2017/10.574/28
ISSN: 1994-4446 (print version)
ISSN: 1994-4454 (electronic version)

The ETUI is financially supported by the European Union. The European Union is not responsible for any use made of the information contained in this publication.

# Contents

## Abstract

This paper updates the European Job Quality Index (JQI) with the latest available data, from 2015, and analyses how the quality of jobs for European workers has changed in the last decade (2005-2015). The JQI encompasses a broad range of work and employment characteristics, summarising them within six categories of job quality including wages, non-wage aspects of employment and work organisation, and collective interest representation. Overall, we observe a decline in non-wage job quality over the past decade and sluggish real wage growth in the years following the crisis. The results show great variation across EU member states, with an indication of deepening polarisation between countries, in particular in terms of forms of employment, job security and working conditions. Finally, we find a positive relationship between labour market participation and quality of jobs at country level.

# 1. Introduction

The European Union has gone a long way since the announcement of the Lisbon Strategy of 2000 and the 'more and better jobs' objective. In parallel with the Decent Work agenda of the ILO, job quality gained a firm ground in the EU policy debate. Nevertheless, 17 years after the Lisbon Strategy, it has hardly moved beyond the rhetoric, still less into a concrete action plan or policy. There is still no agreed indicator and no concrete target for achieving job quality has been set into European employment policy (Burchell et al., 2013). It does not help that, among the policy actors involved in the debate, views on the definition of job quality are quite divergent.

The European Pillar of Social Rights, recently announced by the European Commission, was hoped to bring a major breakthrough in the social policy area by supporting labour markets and welfare systems. From the implementation perspective, of particular relevance is the Social Scoreboard that consists of a set of indicators to be mainstreamed in governance processes (for a more detailed description of the Scoreboard see ETUI, 2017). However, the focus on quantitative aspects of employment and on the supply-side (upskilling of the workforce) continues to prevail in this set of EU-level indicators, and the quality of available jobs is not addressed.

Against this background, the European Job Quality Index (JQI) has been developed for EU28 countries. The JQI encompasses a broad range of work and employment characteristics, summarising them within six categories of job quality. The results can thus be presented as a synthetic measure of overall job quality, broken down by the six dimensions of the index, but also beyond that into single items making up each dimension (this will be illustrated in our analysis of the dimension on working conditions). The objective of the Index is to offer a tool comparing the quality of jobs held by European workers and analysing trends in job quality over time (compare Bothfeld and Leschke, 2012; Leschke and Watt, 2014; Leschke, Watt and Finn, 2008). It takes a clear stance with respect to what constitutes a good quality job and what direction of change indicates improvement. This assessment is based on the wealth of previous research that investigated the links between work and employment conditions, on the one hand; and health, well-being and the productivity of workers on the other (see e.g. Benach and Muntaner, 2007; Burchell, Ladipo and Wilkinson, 2002; Gallie, 2013; Piasna, 2017; Quinlan, Mayhew and Bohle, 2001).

The Index provides a synthetic measure which is easy to compare across countries and over time. It can be used as a simple and swift diagnostic tool,

providing empirical evidence for the policy debate on the outcomes of the crisis, current employment policies and the future challenges facing European labour markets. For this purpose, its synthetic nature is a strength. However, it renders the Index ill-suited for any in-depth analysis focused on particular segments of the labour force or on a detailed examination of selected job features. For such analysis, a job quality index relying exclusively on one individual-level data source, such as the one developed by Green and Mostafa (2012), would be more appropriate. Moreover, the JQI provides a comprehensive overview of changes in the various dimensions of job quality over time, yet it does not provide definitive answers as to whether the fluctuations are driven by changes in the quality of existing jobs or rather by structural effects, including sectoral shifts, automation or generational change with a higher share of better-educated workers entering the labour force.

This paper is structured as follows. Section 2 describes the construction of the European Job Quality Index, including a description of its dimensions, the data used and the method of calculation of the scores. Section 3 summarises the most recent results of the JQI for 2015, first by providing an overview of changes in the overall index and then by describing each dimension separately. Results are analysed by country and by gender. Section 4 explores the relationship between job quality and job quantity, as well as the positive association between selected dimensions of job quality at country level. Section 5 presents an analysis of job quality in the EU over the last decade, 2005-2015. The last section concludes with a summary of the results and some policy implications.

# 2. Job Quality Index: data and methods

The European Job Quality Index (JQI) is a multidimensional measure of the quality of jobs across the 28 EU Member States. The Index takes a broad perspective on the characteristics of work and assesses jobs in six dimensions: (1) wages; (2) forms of employment and job security; (3) working time and work-life balance; (4) working conditions; (5) skills and career development; and (6) collective interest representation. Each of these six dimensions, in turn, is comprised of a large number of individual indicators derived from the European Working Conditions Survey (EWCS), the EU Labour Force Survey (LFS) and the database on the Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ICTWSS). A detailed description of the items used to calculate each of the dimensions of the JQI is presented in the Annex (Table A1), together with the weighting of the components of each dimension. The overall JQI is an unweighted average of the six dimensions listed above.

Jobs are at the centre of the European Job Quality Index and job characteristics are the object of analysis. This implies that other features of labour markets and employment systems, including institutional set-up and policies, are important mechanisms which have an impact on the quality of jobs and which provide different means of support for individuals in coping with poor job quality, but are not part of the job quality measure (Piasna et al., 2017). Furthermore, the Index evaluates jobs from workers' perspective: their health and safety, as well as their psychological and economic well-being. Thus, even if more intense work, long working hours or low wages might increase the profits of companies in the short-run, these work characteristics are classified as indicating poor job quality because a wealth of empirical research has demonstrated that they have negative consequences for workers and their families (see e.g. Benach and Muntaner, 2007; Burchell et al., 2002; Piasna, 2017; Piasna and Plagnol, 2017; Quinlan et al., 2001).

With the exception of wages, all other dimensions of the Index have values ranging from 0 to 100 and which are derived from percentages; that is, the share of respondents reporting a certain work arrangement or characteristic. Where necessary, the values are inverted so that higher scores in the Index always represent a better quality of jobs. The dimension measuring wages is expressed in monetary terms: this shows earnings in Euro adjusted for purchasing power parity (PPP). Adjustment for PPP is made to account for differences in price levels between countries and thus to compare earnings between countries in real terms. Finally, a small number of outliers have been removed by coding as missing the 0.25 per cent of respondents with the

lowest and the highest earnings; such unusually high or low values are likely to result from mistakes in data entry.

In order to compute the overall Job Quality Index that includes all six dimensions in one composite measure, the scores for each sub-dimension are standardised to range from 0 to 1. This was necessary as the sub-dimension of wages is expressed in different units (Euro) than the other five dimensions (on a scale of 0-100, corresponding to percentages). To obtain the overall JQI, the scores for the six dimensions have been averaged, each contributing equally to the overall result.

Where possible due to data availability, the job quality measures are computed and presented for men and women separately, allowing for the identification of gender gaps in the various dimensions of job quality. The only exception is collective interest representation, in which the two measures taken from the ICTWSS database, i.e. trade union density and collective bargaining coverage, are not broken down by gender. Only the third indicator of collective interest representation, i.e. employee representation at company level, which is derived from the EWCS, could be computed for men and women separately.

In updating the JQI, emphasis has been put on ensuring comparability with the Index from previous years—that is, 2005 and 2010 (Leschke and Watt, 2014; Leschke et al., 2008)—and allowing for an analysis of changes in job quality over time. This has been complicated by changes in data availability, for instance related to revisions of the EWCS questionnaire over the years. Therefore, the updated JQI has been re-calculated using measures that are generally available for all three years: 2005, 2010 and 2015. Where data sources other than the EWCS were used and information for either 2005, 2010 or 2015 was missing, the nearest available years were used.

In terms of comparison of the JQI over time, the dimension on collective interest representation is an exception as it has been calculated in two versions. The first version is only available for 2015, but it includes more detailed information on employee representation at company level, in addition to trade union density and collective bargaining coverage. Such an expansion is possible thanks to new questions added to the EWCS only in 2015. The second version is available for time comparison for the whole period 2005-2015, but it only contains information about trade union density and collective bargaining coverage, available from the ICTWSS database.

Furthermore, data on monthly income available from the EWCS could not be compared over time due to changes in the questionnaire and income bands in the 2015 wave. Therefore, wages are calculated for 2015 using the EWCS data, but analysis of changes over time is carried out based on the AMECO index showing changes in real compensation per employee. For this reason, the comparison of changes in the overall JQI over time is only carried out based on the five non-wage dimensions of the Index.

# 3. Job quality of European workers in 2015

This section presents the recent results for the European Job Quality Index and discusses the performance of EU28 countries in 2015. We begin by providing an overview of the Index and its sub-dimensions at EU level and overall job quality for each member state. We then move on to deconstruct the overall index into the six dimensions and discuss in more detail each dimension by gender and at country level. Such a focused analysis allows the exploration of cross-country differences in levels of job quality as well as the disentangling of various patterns of gender inequality found within EU28 countries. It reveals that average levels of job quality usually derive from different profiles and trade-offs with regard to particular dimensions of job quality between countries and between men and women.

Figure 1 presents the average levels of job quality reported in 2015 by workers in EU28 countries. The overall JQI shows very little variation by gender, but there are important trade-offs between dimensions. Men, according to our Index, have much better outcomes on two dimensions of job quality: wages; and forms of employment and job security. The latter dimension includes information on the share of workers in involuntary temporary work, involuntary part-time jobs and those who think they might lose their job in the next six months (all inverted so that higher scores represent better job quality). Women are, on average, more likely than men to work in non-standard employment arrangements, such as temporary and part-time jobs. Women are also, compared to men, more often trapped in temporary jobs because they could not find a permanent position. The case of involuntary part-time work is more complicated as women's choice in this respect is more often dictated by care obligations. For this reason, our indicator might underestimate involuntary part-time work among women since respondents who declared that they work part-time because they look after children, incapacitated adults or due to other family responsibilities are not included in the involuntary part-time work category. Interestingly, there was little difference between men and women at EU level in terms of whether they perceived their jobs as secure or not. The segregation of women into non-standard forms of employment is one of the factors contributing to the gender wage gap. In our Index, we take into account the difference in net monthly earnings without adjusting for the number of weekly working hours, as this shows how much financial resources one has at the end of the day to cover the cost of living. This illustrates the magnitude of the discrepancy in monthly earnings that still exists between men and women in the EU, with the score for women being nearly one-half that of men.

The poorer situation of women with respect to wages and forms of employment contrasts with their better outcomes in terms of working time quality and working conditions. This can be explained by the overall shorter working hours of female workers, which translates into a lower incidence of working long hours (above 48 per week) and during unsocial hours—two of the components of our working time quality dimension. Women were also somewhat more likely than men to report a good fit between their working hours and other commitments outside of paid employment. This is, in large part, linked to their selection in jobs, such as part-time work, that would make such a fit possible (see discussion in Fagan and Walthery, 2011). Better quality of working conditions, on the other hand, is mainly related to sectoral gender segregation, with women less likely to be exposed to certain physical risk factors. Women, however, have less autonomy at work and less control over the organisation of their work.

Finally, there was little gender difference in terms of skills and career development as well as collective interest representation. The latter dimension of the Job Quality Index is mostly composed of indicators which do not have a gender breakdown and this translates into a narrow gender gap. Only one of its components—employee representation at company level—could be calculated separately for men and women. This shows that men were slightly more likely to work in workplaces where trade unions or works councils are active.

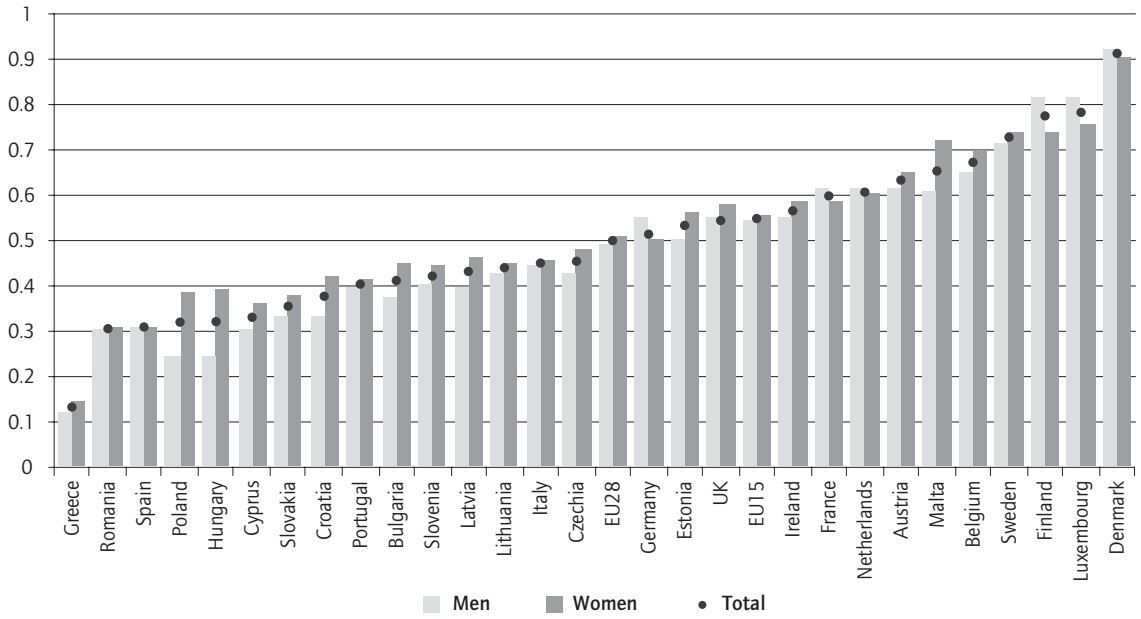
Figure 1 **Comparison of sub-dimensions and overall JQI in 2015, EU28 by gender**


Notes: For the purpose of calculating the overall Job Quality Index, all sub-dimensions were normalised to a range from 0 to 1.

The average experience of job quality at EU level hides huge variation across the Member States. As illustrated in Figure 2, overall job quality was particularly low in Greece, followed by Romania, Spain, Poland and Hungary; while Denmark, Luxembourg, Finland and Sweden were among the top performers. Job quality was lower in post-2004 accession countries compared to the EU15 group.

The size and direction of the gender gap in the overall Job Quality Index also differed substantially between countries. Women scored visibly higher in Poland, Hungary, Croatia and Malta, while the gap in favour of men was most prominent in Finland, Luxembourg and Germany. In Romania and Spain, the gender difference was the smallest.

Figure 2 **Overall JQI in 2015, by country and gender**



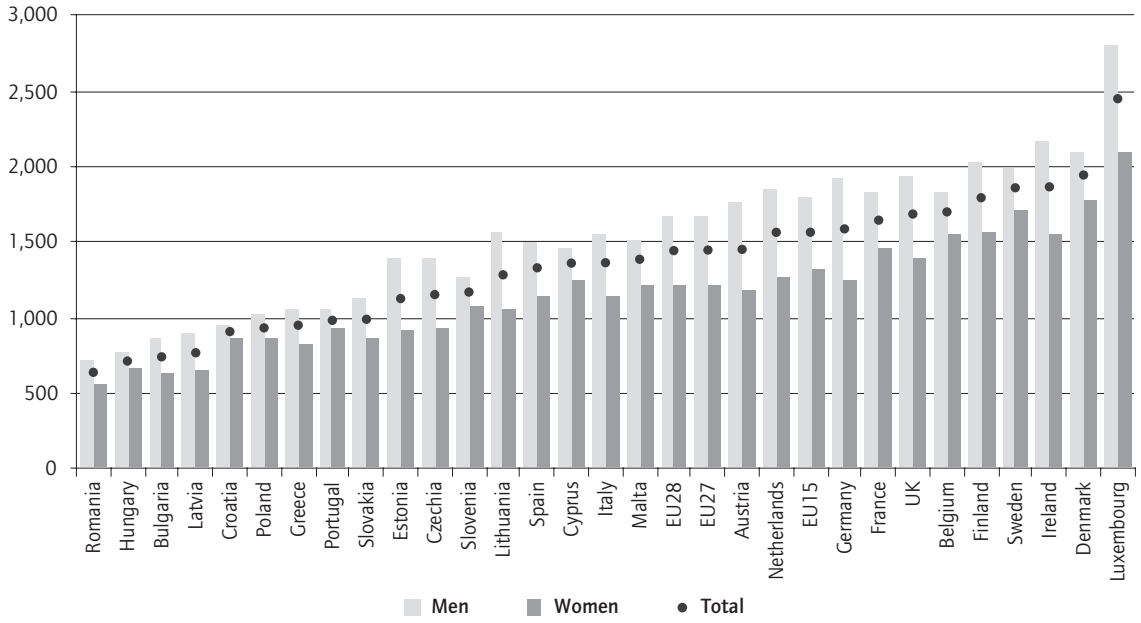

Notes: For the purpose of calculating the overall Job Quality Index, all sub-dimensions have been normalised to a range from 0 to 1. Overall JQI is the unweighted average of the six sub-dimensions.

Decent **wages** are one of the key elements of job quality for workers. As shown in Figure 3, substantial wage differentials persist among EU Member States. The bottom of the wage distribution is filled by central and eastern European, as well as Mediterranean, countries all of which had wage levels in 2015 which were below the EU28 average. Highest net monthly earnings, after adjusting for price differences, are reported by workers in Luxembourg, Denmark, Ireland and Sweden.

Unsurprisingly, gender differences are particularly visible in this dimension and consistently show that women earned less than men in all EU28 countries. The smallest gender gaps were found in Croatia, Poland, Hungary,

Romania and Slovenia. At the other extreme, the widest gender wage gaps were found in Luxembourg, Germany, Ireland and the Netherlands. This may, at least in part, be related to the share of part-time work, for which a high incidence drives down average monthly wages and gender norms related to maternal employment, as well as the generalised low-wage economic model in CEE countries with a compressed wage structure (Drahokoupil and Piasna, 2017).

Figure 3 **JQI dimension on wages in 2015, by country and gender**



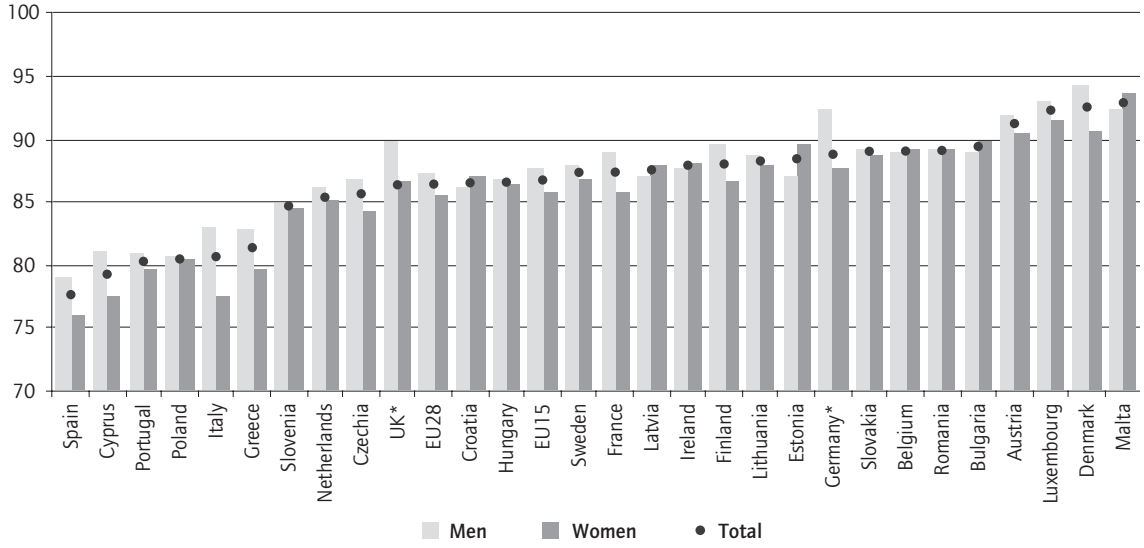

Notes: Average net monthly earnings from main paid job in 2015, adjusted for PPP.

The quality of **forms of employment and job security** are measured by the share of workers who had temporary jobs because they could not find permanent work; and the share of part-time workers who could not find full-time jobs. Therefore, only non-standard work that was reported as involuntary is included as an indication of poor job quality. Moreover, a subjective dimension is added to this dimension by including a measure of the self-perceived chances of losing one's job in the next six months.

This dimension shows much less variation across the EU than wages, but there is a group of countries at the top and at the bottom of the distribution that visibly stand out (see Figure 4). The six countries that are clearly bad performers on this dimension are Spain, Cyprus, Portugal, Poland, Italy and Greece; while the four countries with outcomes visibly above the average are Malta, Denmark, Luxembourg and Austria. The rest of the Member States remained fairly concentrated around the EU28 average.

In the vast majority of countries, men reported better outcomes on this dimension compared to women, with the widest gender gaps being found in Italy, Germany and the UK. On the other hand, most central and eastern European countries show much higher gender equality on this dimension, mainly attributable to a full-time working model with mothers of young children either exiting the labour market completely or combining full-time paid work with care obligations often with the help of relatives.

Figure 4 **JQI dimension on forms of employment and job security in 2015, by country and gender**




Notes: *missing data on involuntary temporary employment.

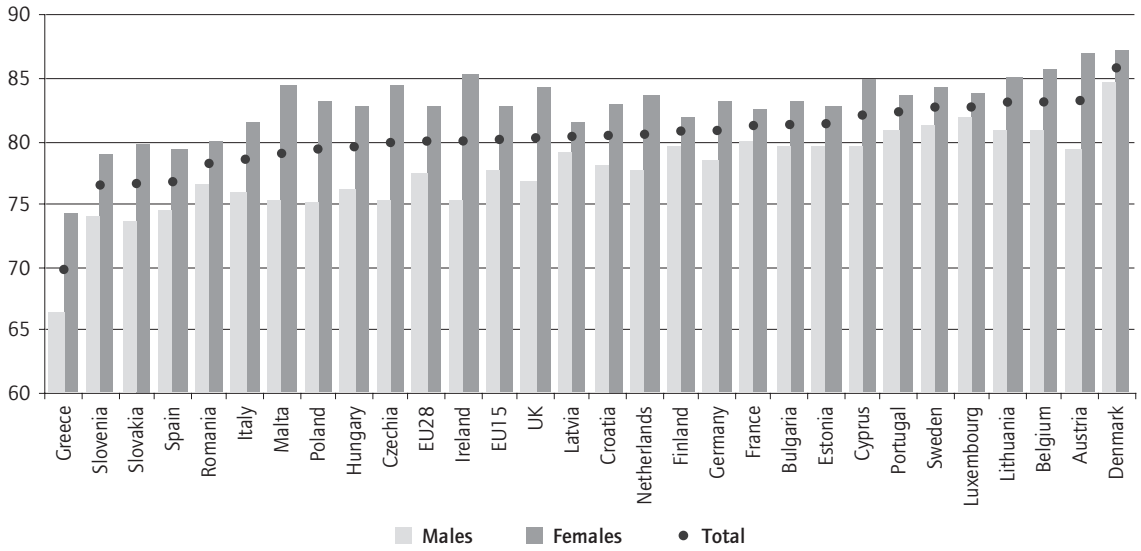
The **working time and work-life balance** dimension measures not only the extent to which work spills over beyond 'standard' hours (i.e. daytime and weekday work) but also provides a subjective assessment of work-life fit. This is influenced by national regulation, for instance on the extent of Sunday work, as well as cultural and gender norms.

Greece is an evident outlier on the basis of the 2015 data, with particularly low levels of working time quality driven by very long reported working hours, followed by Slovenia, Slovakia and Spain (see Figure 5). Overall, working time quality is lower in southern European countries, where work tends to extend into late evening hours, and in several CEE countries, known for the weak enforcement of working time regulation including with regard to payment for overtime. In this respect, the relatively low position of the Netherlands might be surprising, given the high incidence of short hours work. Denmark, on the other hand, stands out as a top performer.

Across the whole EU, women continue to work according to different schedules than men, a fact predominantly related to the unequal division of household and care work. This is manifest in a considerable gender gap in

working time quality that favours women; this is found to be wider in countries with overall lower levels of working time quality, such as Ireland, Malta or Czech Republic.

Figure 5 **JQI dimension on working time and work-life balance in 2015, by country and gender**




The quality of **working conditions** is the most complex dimension of the Job Quality Index in that it takes into account the largest number of variables (it is calculated based on a total of twenty items from the EWCS questionnaire) describing how and in what environment work is performed. It is composed of three sub-dimensions each contributing equally to the overall score: work intensity; work autonomy; and physical risk factors. Values have been inverted where appropriate so that, for each dimension, a higher score corresponds to a better quality of work: a lower risk of work intensification, higher autonomy and lower exposure to physical risk factors.

The results presented in Figure 6 show considerable divergence across EU countries. There are three countries with scores much below the EU average: Cyprus, Greece and Romania, countries that also score relatively lowly on some of the other dimensions of job quality. However, there is no clear clustering among the remaining countries with respect to the quality of working conditions. Central and eastern European countries are spread evenly across the distribution, with the Baltic States, Poland and Czech Republic placed higher than the EU average. Sweden, on the other hand, which is among the top performers on all other dimensions of job quality, lies below the EU average.

The lack of a clear clustering of countries together with some surprises, such as very high scores for Estonia and Malta, are largely due to the encompassing nature of this dimension of job quality, which averages the outcomes of quite

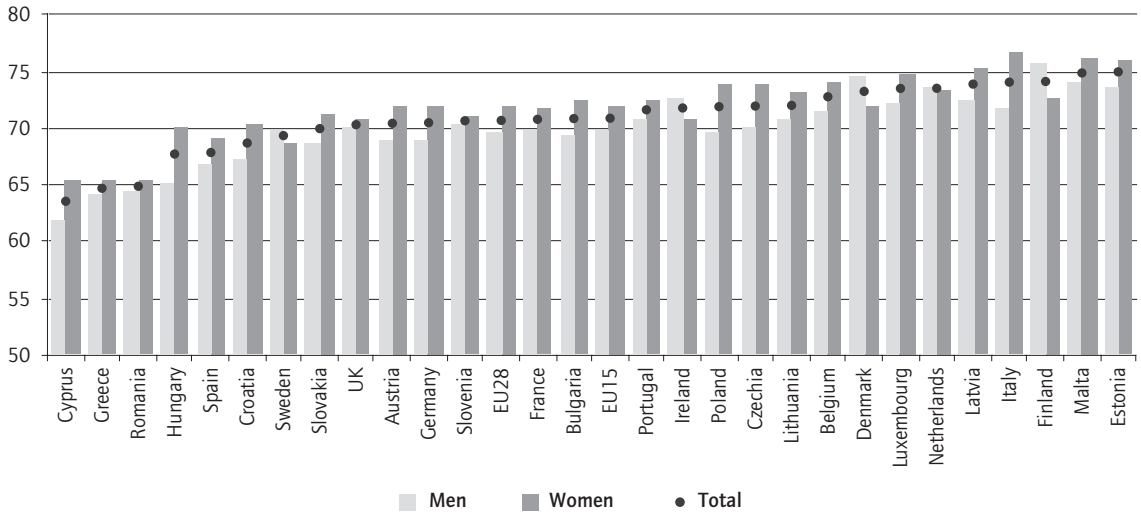
diverse work characteristics. A closer look at each sub-dimension of the working conditions measure is thus useful (see Table A3 in the Annex). For instance, the low overall position of Denmark, Sweden and the UK is largely driven by high levels of work intensity in these countries, which translates into high levels of burnout and work-related stress (see e.g. Norlund et al., 2010; Vision, 2016). On the other hand, Nordic countries and the UK score very well in terms of worker autonomy. Germany, which scores below the average on overall quality of working conditions, is among the top performers in terms of physical risk factors. This is especially the case in the German industrial sector, an important part of the country's economy. This might be related to the offshoring of the more arduous elements of production and the retention of mainly core, highly-skilled activities within the sector, but also the relatively good standards, in general, regarding health and safety.

Certainly, sectoral composition has a strong impact on the overall ranking of countries on quality of working conditions. When we compare the same sector across countries, results tend to differ from the overall ranking presented in Figure 6 (see Table A4 in the Annex). For instance, looking at workers in manufacturing alone, the Nordic countries and the Netherlands become the top four performers in quality of working conditions, although the bottom of the ranking remains virtually unchanged with Cyprus, Romania, Greece, Slovakia and Hungary having the worst outcomes.

As noted earlier, women tend to work in jobs with better working conditions than men. This is largely accounted for by sectoral gender segregation, with women less likely to be exposed to many of the physical stress factors associated with male-dominated manufacturing. This pattern is, to a large extent, confirmed at country level, with the gender gap being particularly wide in Hungary, Poland and Italy. However, the gender gap is reversed—with women working in jobs with worse working conditions than men—in Finland, Denmark, Sweden, Ireland and the Netherlands. Such a result might at first be surprising in view of persistent sectoral gender segregation in Nordic countries. The reversed gender gap in quality of working conditions is largely due to a much smaller advantage of women in these countries with respect to exposure to physical stress factors. In fact, Denmark is the only country where women report overall higher exposure to physical risk factors than men. However, women face different risk factors than men, and high sectoral segregation is linked to a higher exposure of women to handling infectious materials, tiring positions and the lifting or moving of other people, all risks featuring in the female-dominated healthcare sector.

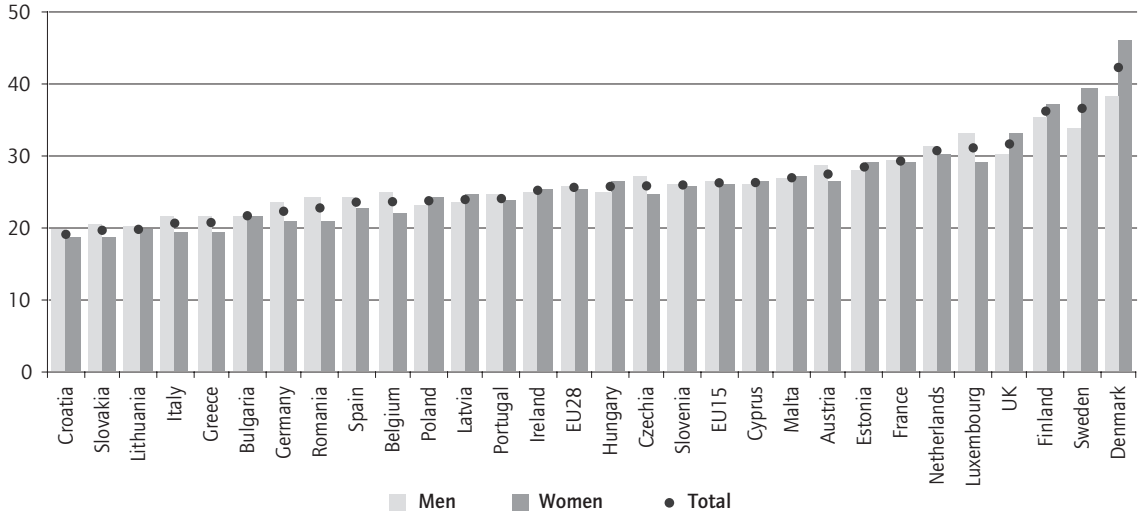
The **skills and career development** dimension is composed of two elements. One records the share of the adult population (aged 25-64) that participated in education or training in the four weeks preceding the survey. The second element captures the extent to which workers agree with the statement 'My job offers good prospects for career advancement'.

Figure 6 **JQI dimension on working conditions in 2015, by country and gender**




The results are displayed in Figure 7. What first strikes when analysing the results is that EU countries score relatively lowly on this dimension. On a scale from 0 to 100, most countries score between 20 and 30. This means that, on average, only every fourth worker in the EU had participated in any training in the previous month and/or considered their job to offer good prospects for career development. Moreover, the results show wide divergence between EU countries. The bottom six positions are filled by eastern and southern European countries: Croatia, Slovakia, Lithuania, Italy, Greece and Bulgaria. The below-average position of Germany and the relatively high rank of the UK confirm expectations based on differences in education systems and the character of skill formation. While in liberal market economies (such as the UK), workplaces and continuing learning tend to be more important than schools for skill formation, the opposite is expected for coordinated economies, and in particular in Germany with its highly-developed formal vocational training and apprentice system (see similar results and discussion in Tahlin, 2007). In Germany, new labour market entrants are equipped with more firm-specific skills than in the UK and thus the general skill profile in the UK requires more training effort from employers to adapt skills to firm-specific needs. Finally, the ranking of skills and career development is topped by the three Nordic countries—Denmark, Sweden and Finland. In these countries, the gender gap is also the most pronounced and in favour of women. Conversely, in countries with the worst outcomes on this dimension of job quality, men are in a better situation than women.

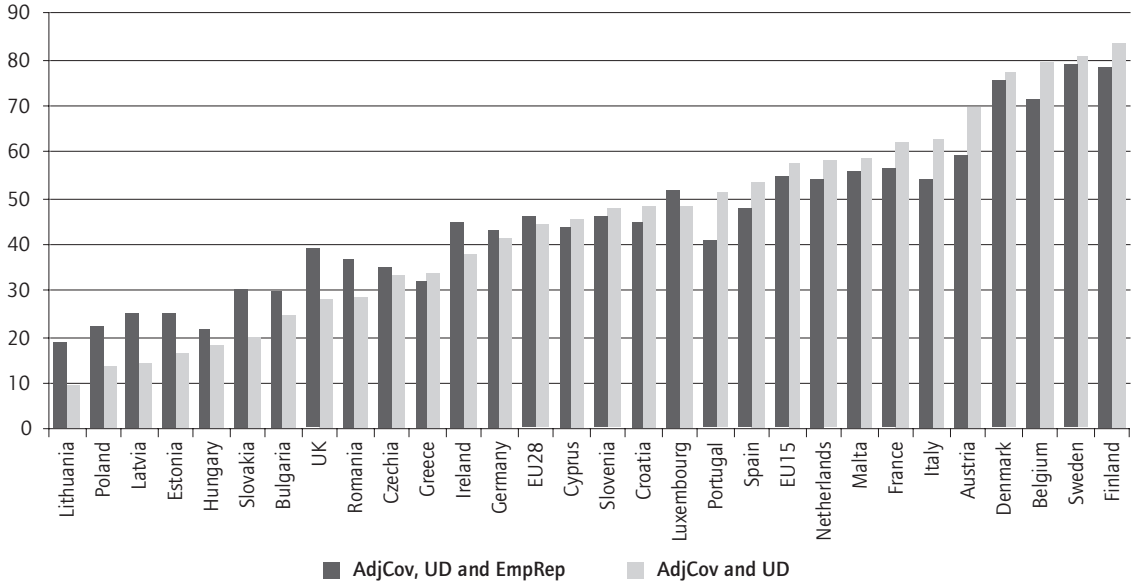
Figure 7 **JQI dimension on skills and career development in 2015, by country and gender**




The sixth and final dimension of the Job Quality Index measures **collective interest representation** among the European workforce. This captures the scope for voice and the empowerment of workers vis-à-vis employers; these are important aspects of intrinsic job quality, affecting workers' job satisfaction and well-being at the workplace. This dimension has been computed in two variants. The first only includes information about the adjusted coverage of collective bargaining and trade union density at country level. It is, however, possible to supplement these two measures with three additional items from the EWCS, capturing employee representation at company level and including the presence of trade union or works councils and health and safety delegates, as well as the extent to which management holds regular meetings with employees.

A comparison of these two measures for 2015 is presented in Figure 8. A division of countries into 'welfare state' typology is evident. In general, the post-transition economies and liberal welfare regimes rank at the bottom, continental and Mediterranean countries are placed in the middle, while Nordic countries achieve the highest scores. The inclusion of additional information about workplace-level employee representation does not change the ranking of countries substantially, but it does bring them more closely together, suggesting that informal forms of employee representation, to some degree, supplement formal ones in countries where the latter are at very low levels.

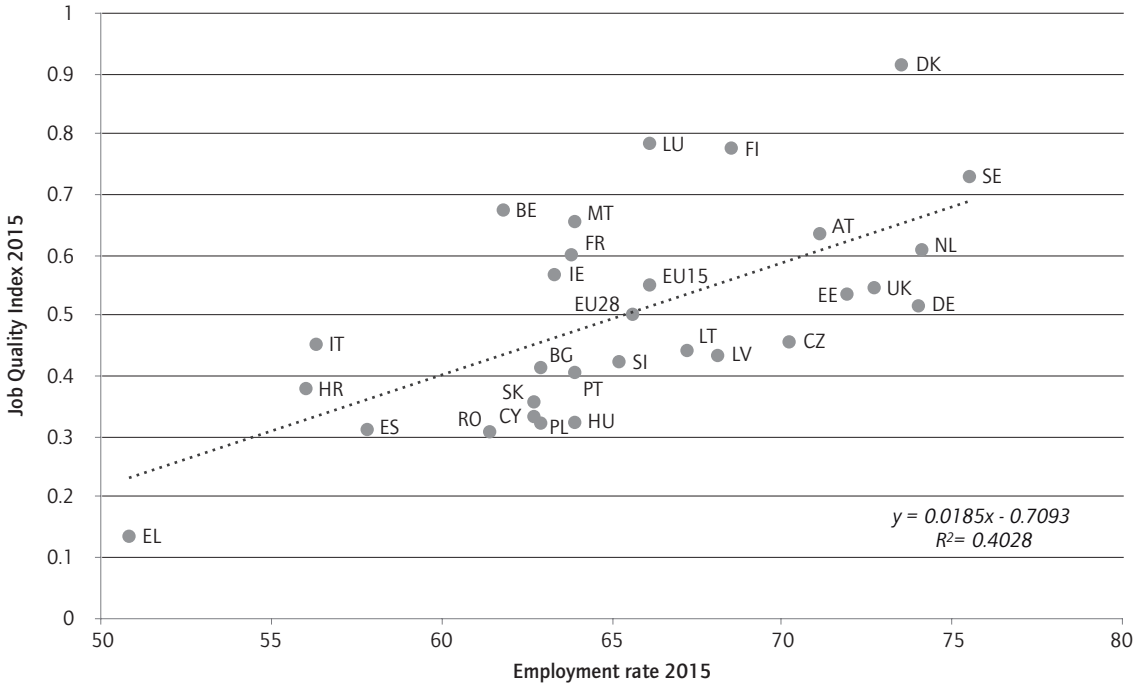
Figure 8 **JQI dimension on collective interest representation in 2015, by country and gender**



# 4. Positive synergies between 'more and better jobs'

In the Lisbon Strategy of 2000, the promotion of 'more and better jobs' was expressed as a non-mutually exclusive objective. In some of its recent documents, the European Commission has re-stated that the creation of employment does not need to compromise on the quality of jobs (e.g. European Commission, 2012, 2017). Nevertheless, the overall policy direction and many of the labour market reforms introduced across the EU after the 2008 crisis seem to have followed different principles, with the deregulation of employment taking a front seat (see discussion in Piasna and Myant, 2017). The view that has underpinned much of the reform effort in recent years is that less protected forms of work, that are associated with lower job security and often with lower wages, non-wage benefits or limited access to training, increase the chances of those outside the labour market to access paid work. Contrary to such presumptions, our analysis shows a strong and positive relationship between the quantity and the quality of jobs.

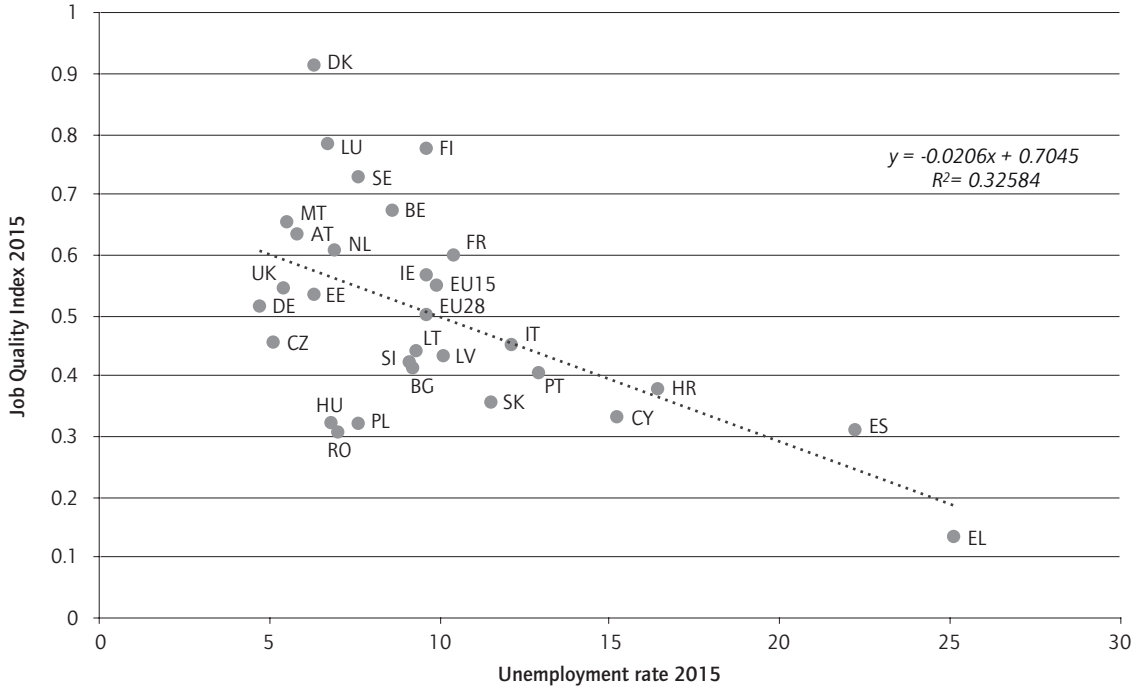
Figure 9 **Relationship between job quality and employment, 2015**




Notes: employment rate from Eurostat, age 15-64.

As illustrated in Figure 9, in countries where jobs were of overall higher quality in 2015, participation in the labour market, as expressed by the employment rate, is also higher. The correlation is strong and positive, and it clearly demonstrates that, across EU Member States, there is no apparent trade-off between the number of people in employment and how good their jobs are. Quite the opposite: the results imply that it is possible for advanced labour markets to perform well across both dimensions—quantity and quality—if only the right mix of policies and institutions is set in place. Such a positive relationship is still to be found, but is far less clear cut, in the case of the unemployment rate (Figure 10). The correlation at EU level is strong and positive but, to a large extent, driven by Greece and Spain, both having high unemployment rates in 2015 and a low incidence of good jobs. The complicating factor here is that the unemployment rate does not simply reflect how many people do not have paid jobs, hence being the reverse of the employment rate, but is also affected by the avenues pursued by those outside employment, for instance whether they go into education or withdraw from the labour force completely. In other words, the unemployment rate is also affected by institutional support for individuals across the whole course of their lives.

Figure 10 **Relationship between job quality and unemployment, 2015**



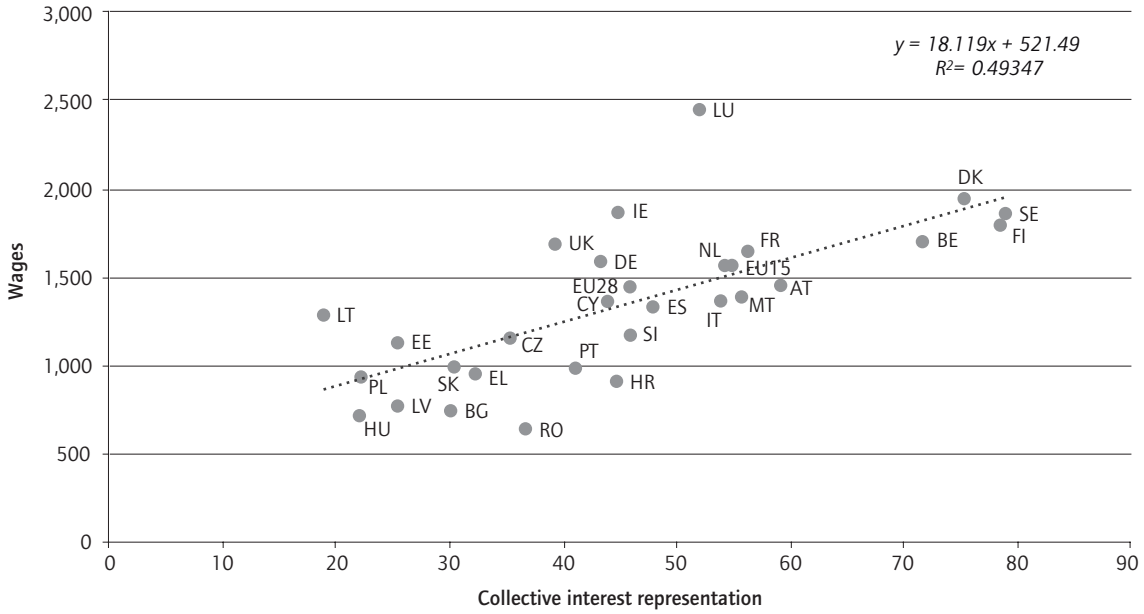

Notes: Unemployment rate from Eurostat, age 15-64.

## 4.1 Collective interest representation and other dimensions of job quality

There are positive synergies not only between the quantity and quality of jobs in the EU, but also between different dimensions of job quality. In other words, jobs that are good in one aspect also tend to have other valued features, at least at country level. In this section, we focus on the positive relationship between collective interest representation and other dimensions of job quality. This is of particular interest as the ability of trade unions to exert a positive impact on working conditions has long been debated and, at times, challenged. Our results cannot give an answer about causal direction, but they paint a rather clear picture of a positive relationship since, in countries with strong collective interest representation, jobs are of generally better quality.

The strongest positive synergy between collective interest representation and other aspects of job quality is found for wages (Figure 11). Countries that joined the EU after 2004 are characterised both by low wage levels, even after adjusting for price differences, and by very low levels of worker representation. Mediterranean and continental countries rank in the middle, while in Scandinavia and Belgium high net wages go hand-in-hand with high levels of unionisation and collective representation. UK and Ireland stand out in the sense that reported wages are higher than would be expected from their below-average levels of employee representation.

Figure 11 **Collective interest representation and wages, 2015**



Among other, non-pecuniary dimensions of job quality measured by the JQI, skills and career development, as well as working conditions, show the most noticeable positive relationship with collective interest representation (Figures 12 and 13). However, breaking down the quality of working conditions into the three components which comprise this dimension (not shown) reveals a more complex underlying pattern. In countries with more developed employee representation, workers have much more autonomy and are somewhat less exposed to physical risk factors, but report higher levels of work intensity.

Overall, trade unions play an important role in providing social support that can help workers cope with high work demands and give a sense of control over how their work is organised (Wood, 2008), while they also negotiate on behalf of members over organisational change or adverse working conditions (Bryson, Barth and Dale-Olsen, 2013). Moreover, trade unions put emphasis on promoting vocational training and lifelong learning in the workplace and they also play an active role in developing learning opportunities for their membership, through negotiating time-off and investment (Forrester and Payne, 2000; McCoshan, 2016). Therefore, the correlation at country level between collective representation and skills and career development can, arguably, provide evidence in support of the positive role of trade unions. In the case of working conditions, however, this relationship might be more nuanced and, to a large extent, linked to the sectoral segregation of employment. However, we are unable to determine the importance of compositional factors with the data at hand.

Figure 12 **Collective interest representation and skills and career development, 2015**

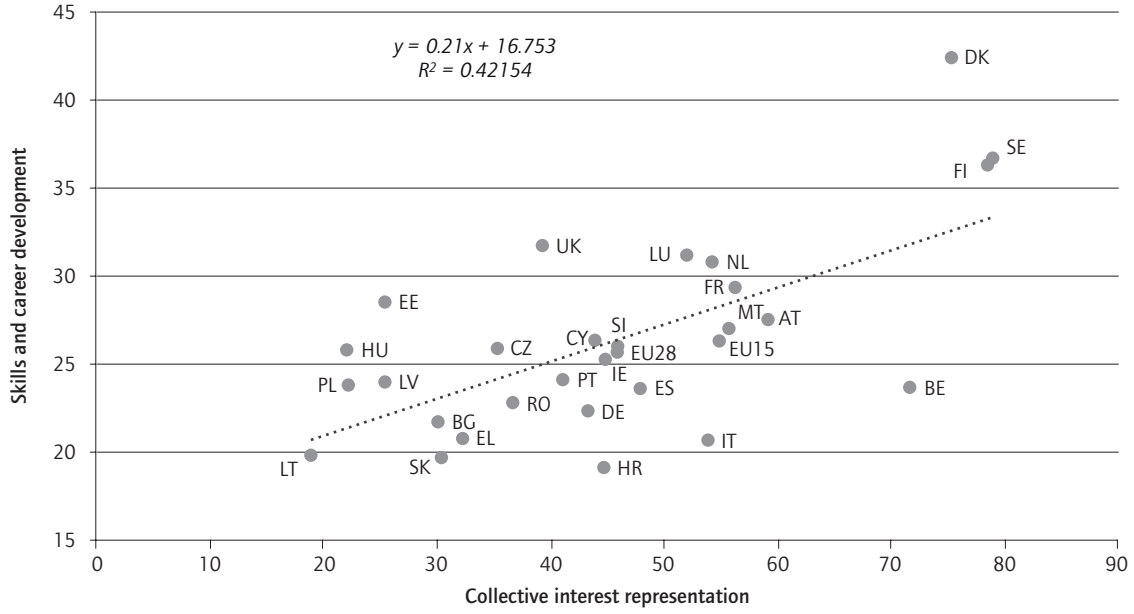
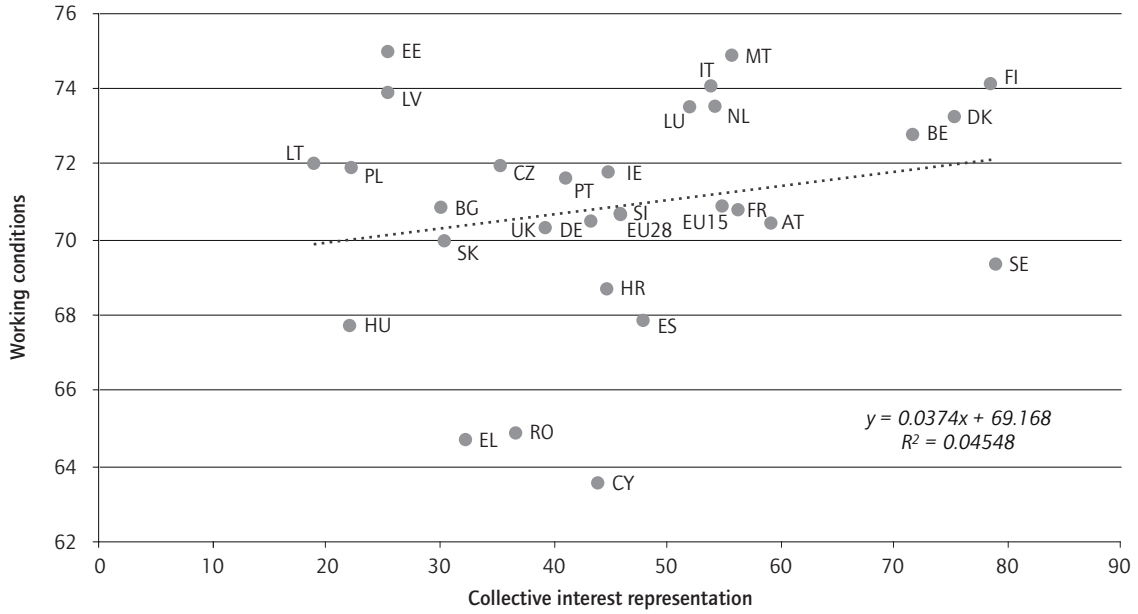


Figure 13 **Collective interest representation and working conditions, 2015**



# 5. One decade of developments in job quality: 2005-2015

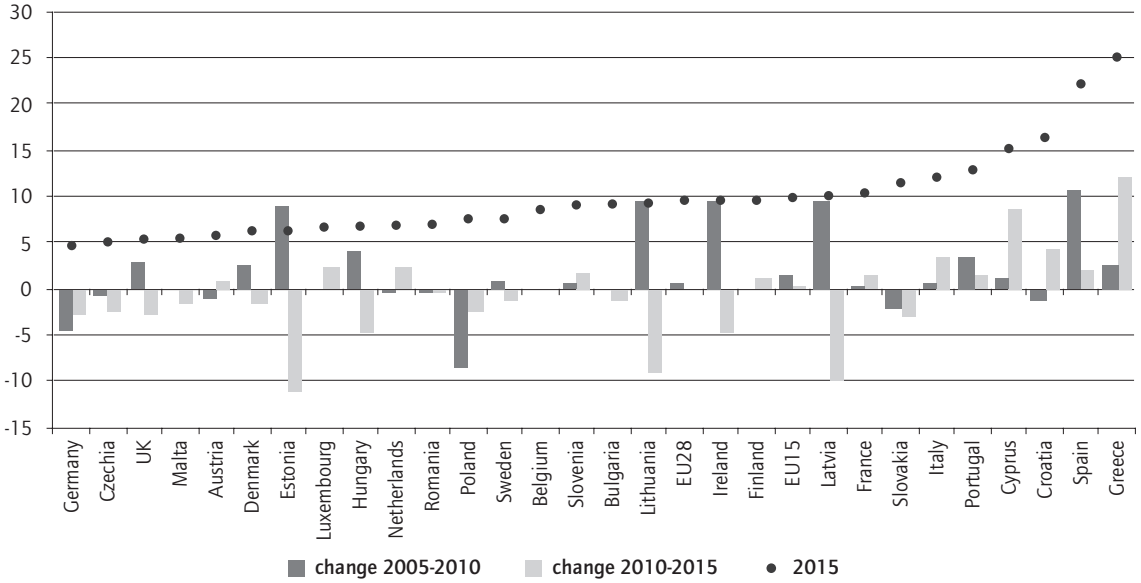
Since the height of the post-2008 crisis, some progress has been made in bringing more Europeans into paid employment and curbing the rise in unemployment. As pictured in Figure 14, between 2010 and 2015 the unemployment rate fell in 15 EU countries and on average in the EU28 as a whole. Not everywhere were the developments positive and, in particular, in the six countries with the highest unemployment levels the unemployment rate was still on the rise between 2010 and 2015.

Changes in the quality of jobs over the past decade are more difficult to pin down as they have been driven by a variety of often contradictory factors (compare discussion in Gallie, 2013; Leschke, Watt and Finn, 2012). On the one hand, many of the long-term structural trends towards a knowledge-based economy (such as a rising level of skills or technological change) were expected to bring overall improvements in the quality of work, at least for a group of highly-skilled workers. On the other hand, the jobs crisis that followed the 2008 financial crash had an impact on job quality in at least two, often contradictory, ways. The market power of workers was considerably weakened by the rise in unemployment and declining collective representation, which gave employers the upper hand in imposing less favourable work and employment conditions. This has had a largely negative effect on the quality of existing jobs. However, poor quality jobs (such as those featuring temporary contracts, but also construction jobs with poor physical working conditions) were disproportionately destroyed in the initial period of the crisis, which translates into increases in average job quality levels at country level.

Nevertheless, the post-crisis growth in employment has been accompanied by a widespread perception that many of the new jobs that are being created are 'bad jobs'. Countries that followed a policy of internal devaluation saw wages for many groups of workers decline (Myant, Theodoropoulou and Piasna, 2016). A continuation of the trend towards greater flexibility has resulted in a rise in non-standard forms of work, offering less protection for workers and less predictability in terms of income and working hours (Cappelli and Keller, 2013; Piasna and Drahokoupil, 2017; Rubery and Piasna, 2016).

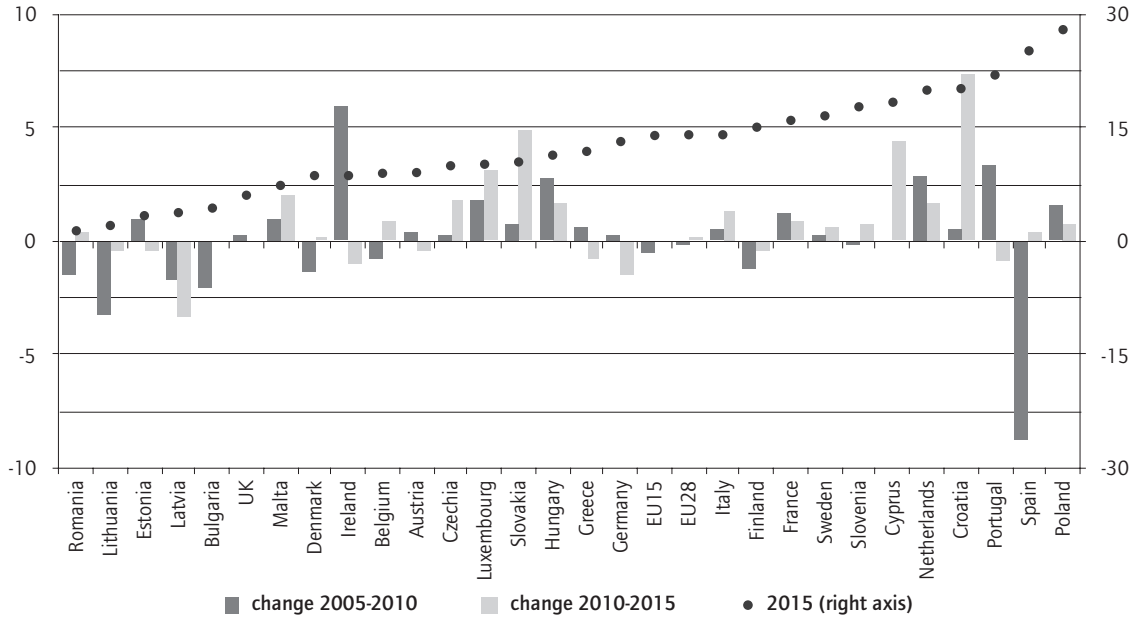
Figure 15 illustrates this trend and shows that, after the initial decline immediately following the 2008 shock, there has been a general return to temporary employment among European employers. The share of temporary work in total employment increased in 18 EU countries between 2010 and 2015, reaching the highest levels in Poland and Spain where more than one in four workers had contracts of limited duration in 2015.

Figure 14 **Unemployment rate, percentage point change 2005-2010 and 2010-2015, and rate in 2015**




Notes: age 15-64.
Data source: Eurostat (LFS)

Figure 15 **Temporary employment rate, percentage point change 2005-2010 and 2010-2015, and rate in 2015**

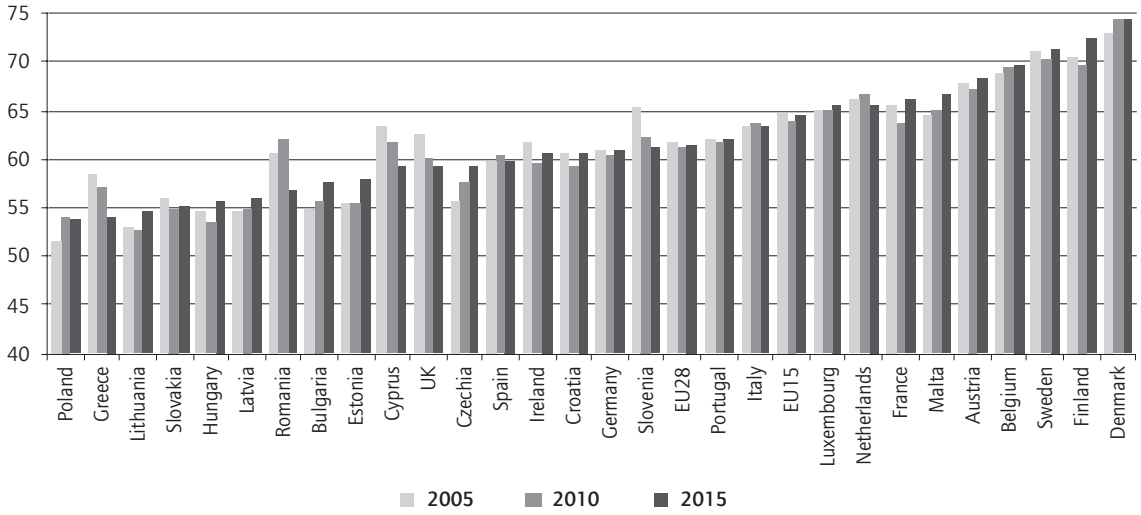



Notes: age 15-64.
Data source: Eurostat (LFS)

In this section, we aim to document changes in a broad range of dimensions of job quality over the last decade across the EU. As the main data source for the Job Quality Index is the European Working Conditions Survey, which is carried out every five years, the time comparison is based on three points in time: 2005, 2010 and 2015. We begin our analysis with an overview of changes in non-wage dimensions of job quality across countries. Non-wage job quality is the average score for each country in dimensions 2-5 of the Job Quality Index: forms of employment and job security; working time and work-life balance; working conditions; skills and career development; and collective interest representation. Wages are not included in this composite measure due to the non-comparability of the EWCS wage data over time. We then move on to examining changes in each dimension of the JQI separately.

Overall, non-wage job quality has deteriorated in the most recent decade in the EU. Figure 16 provides an overview of changes over time in the non-wage Job Quality Index by country, alongside the EU average. Countries are ordered according to their score in 2015. The impact of recession emerges from the picture, with the dominant pattern of change in non-wage job quality found across EU28 countries being a decline in 2010 followed by an increase in 2015. However, compared with a decade ago, the average levels were lower in 2015, both at EU28 and EU15 level. Nevertheless, most of the changes at country level are relatively minor, with considerable stability in average scores over the ten-year period. On a 0-100 scale, an increase of at least one point is noted in ten countries: Poland, Lithuania, Hungary, Latvia, Bulgaria, Estonia, Czech Republic, Malta, Finland and Denmark. Declines in non-wage job quality occurred in fewer countries, but they are much more pronounced, most notably in Greece, Romania, Cyprus, the UK, Ireland and Slovenia.

Figure 16 **Non-wage job quality, change 2005-2015**

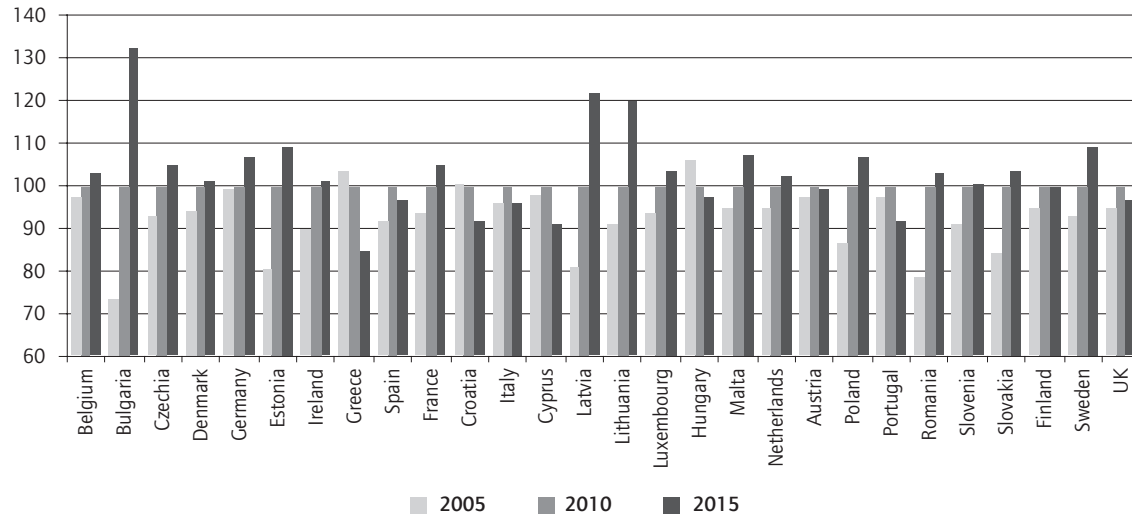



Note: Unweighted average of the five non-wage dimensions of JQI.

In an analysis of changes in wages over time, we rely on data from the AMECO data base (Figure 17). Data from the EWCS cannot be used for this purpose due to changes in the way respondents are asked on the EWCS questionnaire about their income. Thus, Figure 17 shows the evolution of real compensation expressed as a share of 2010 levels. Values below 100 mean that wages were lower than in 2010 while ones above this threshold indicate a wage increase.

Figure 17 shows that developments in real compensation per employee have been rather diverse across the EU. In Bulgaria, Latvia, Lithuania and Estonia, there is a high degree of volatility and the proportionate increase in real wages has been vast. This is due to relatively low nominal wages, where even a small increase in nominal values translates into a substantial increase in percentage terms, as well as to conversion to the Euro in the Baltic States over this period (although detailed studies suggest that the Euro had, at most, a very small effect on prices, see e.g. Meriküll and Rõõm, 2015). On the other hand, all Mediterranean countries, including Croatia and Cyprus, as well as Hungary, Austria and the UK, note real wage declines between 2010 and 2015.

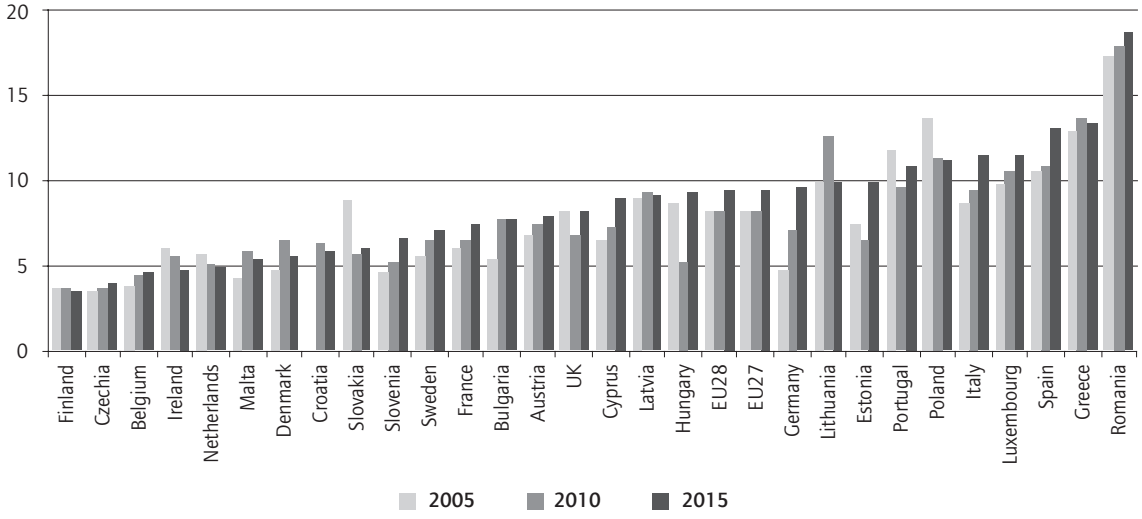
Figure 17 **Changes in real compensation per employee, 2010=100**




To arrive at a better understanding of developments in wages, their distributional aspect should also be taken into account. Figure 18 illustrates changes in the share of the so-called 'working poor'; that is, the percentage of workers (employed or self-employed) in the total population who are at risk of poverty (i.e. with an equivalised disposable income below the risk-of-poverty threshold, which is set at 60 per cent of national median equivalised disposable income after social transfers). In 19 EU countries, the share of the working poor was higher in 2015 compared to 2005, and in 16 EU countries such an increase can be observed over the period 2010-2015. In Estonia,

Portugal, Poland, Italy, Luxembourg, Spain and Greece, at least every tenth worker was at risk of poverty in 2015. In Romania this was a striking 19 per cent of workers.

Figure 18 **In-work at risk of poverty rate, 2005-2015**

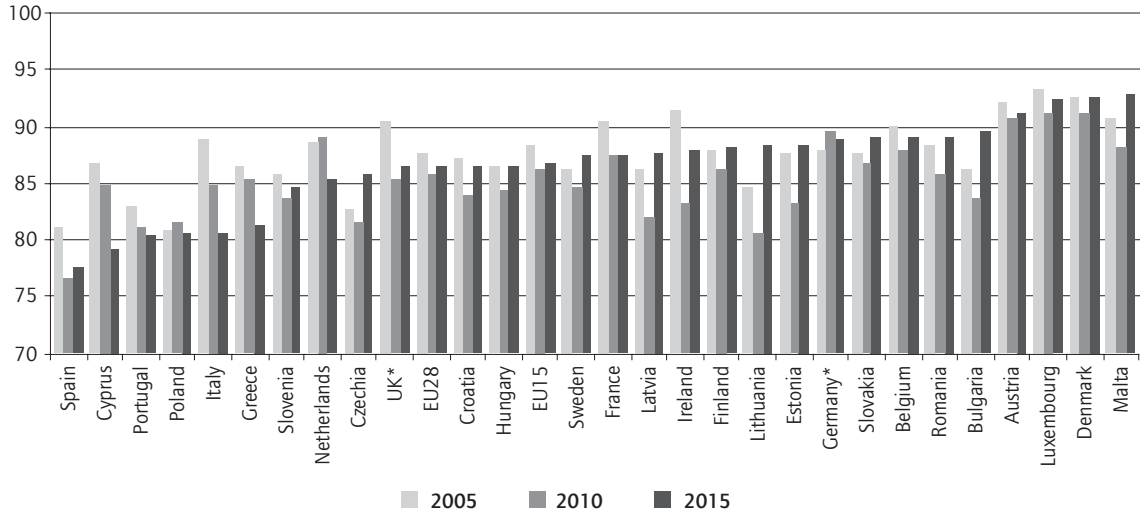



Source: Eurostat (EU-SILC)

For the period between 2005 and 2010, when the European labour market first took a hit from the financial crisis, almost all EU countries note a decline in job quality measured in terms of forms of employment and job security (Figure 19). There are only three exceptions: Poland, the Netherlands and Germany. In the following period, between 2010 and 2015, the quality of forms of employment and job security worsened in eight countries: Cyprus, Portugal, Poland, Italy, Greece, the Netherlands, France and Germany. The first six countries also rank below the EU average on this dimension of job quality; thus, further declines observed in these countries has led to a deepening of polarisation within the EU. Overall, in 15 EU countries the quality of forms of employment and job security was lower in 2015 than before the crisis in 2005.

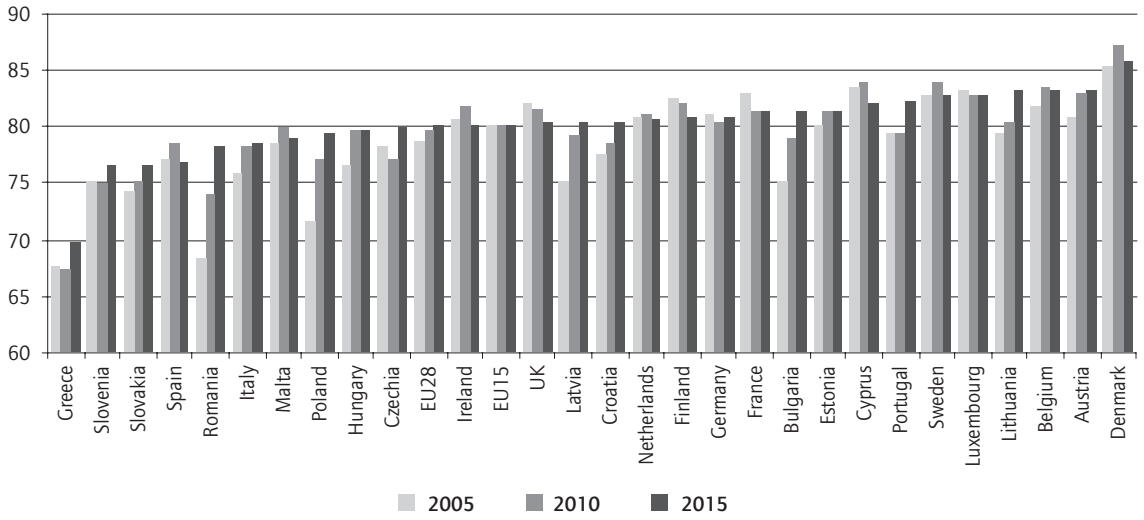
The quality of working time and work-life balance has been improving slightly but steadily over the past ten years in the EU28 as a whole (Figure 20). However, the improvement appears to be very small in view of the substantial decline in weekly working hours in the EU which, in theory, should have led to better work-life balance and less spill-over of working hours into unsocial times. However, as more detailed analysis of recent working time reduction in the EU shows, the changes have been mainly driven by employers' needs for greater flexibility and thus their impact on job quality for workers has been, at best, mixed (see e.g. De Spiegelaere and Piasna, 2017).

Figure 19 **Forms of employment and job security, 2005-2015**




Notes: *missing data on involuntary temporary employment.

Figure 20 **Working time and work-life balance, 2005-2015**



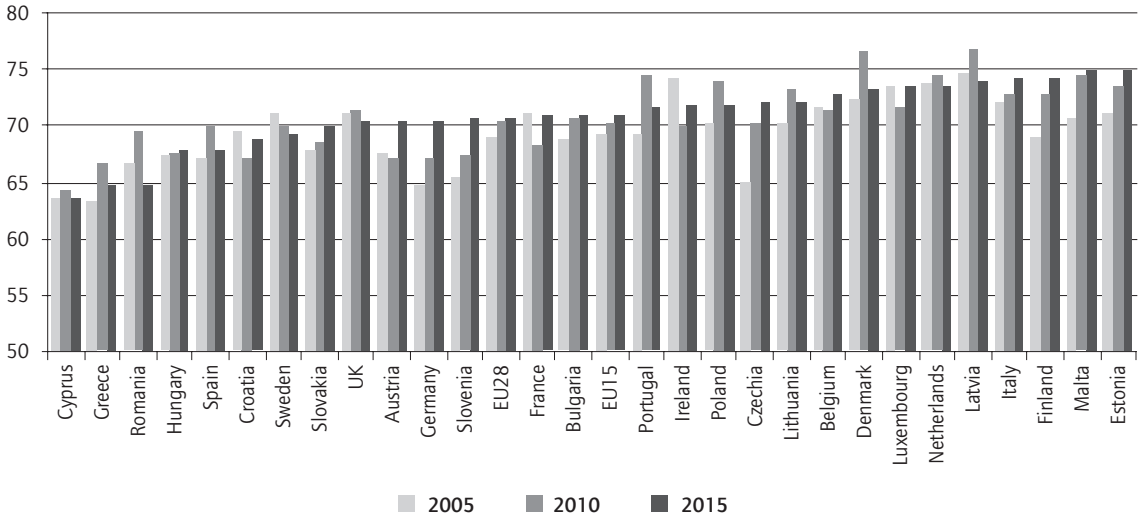

Notes: Missing data for work in the evening in 2005 in Portugal.

As ever, the experiences of particular countries have been quite diverse. The situation in 18 Member States was better in 2015 than in 2005 but, at the same time, the quality of working time deteriorated over the last five-year period in 12 EU countries, most notably in Spain, Ireland, Cyprus and Denmark. The outcomes on this dimension of job quality have improved substantially in Romania, Poland, Latvia and Bulgaria. In all these countries, weekly working hours are, on average, much longer than in the EU at country level but also when comparing only full-time workers. In the analysed period, and in particular between 2005 and 2010, weekly working hours in all these

countries dropped substantially, which also lowered the incidence of very long hours and work during unsocial hours, important elements of the working time quality measure. This is likely to be one of the paradoxical effects of the crisis, whereby a drop in labour demand and in available work has resulted in a re-distribution of work through a shortening of average weekly working hours (for a discussion see De Spiegelaere and Piasna, 2017).

The quality of working conditions displays not only huge dispersion across EU countries, but also considerable variation over time (Figure 21). At EU28 level, there has been a steady improvement in the analysed period. At country level, two patterns of change are most common. In eleven countries, the quality of working conditions improved in the first period of the crisis (2005-2010) and then declined between 2010 and 2015. This pattern can be found, among others, in Spain, Romania, Portugal, Poland, Lithuania and Latvia. To a large extent, such changes can be linked to structural shifts in the economy following the post-2008 jobs crisis (see e.g. Bothfeld and Leschke, 2012), with sectors such as construction or manufacturing, characterised by a high degree of physical risk factors, being hit particularly hard. Decline here contributed to an increase in the average level of job quality, while recovery and the renewed growth of these sectors contributed to a drop in the average level of quality of working conditions. The second dominant pattern of change is an improvement both in the period 2005-2010 and 2010-2015. This can be observed in ten countries, including Germany, Slovenia, Slovakia, Czech Republic and Finland. It remains to be seen whether this improvement is sustained in the following years and to what extent it can be linked to technological advances that promise greater autonomy and control for workers and a shift of the most strenuous physical work to being done by machines.

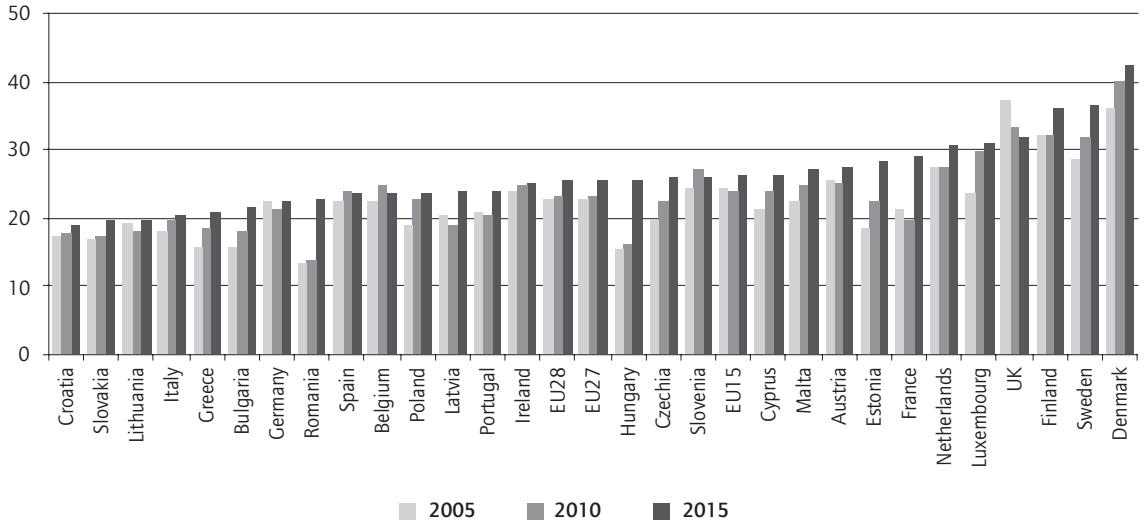
Figure 21 **Working conditions, 2005-2015**



An important prerequisite for the successful development of the knowledge-based economy is a highly-skilled workforce and continuous investment in adapting qualifications to new market needs and technologies. Not surprisingly, skills and career development have improved in the EU28 in the last five years; a welcome advance after the stagnation observed between 2005 and 2010 (Figure 22). Spain, Belgium, Slovenia and the UK stand out as the only Member States with worse outcomes in this dimension of job quality in 2015 than five years earlier. Training behaviour is assumed to vary by severity of recession, institutional support for the training effort and employment regulation (Dieckhoff, 2013; Felstead, Green and Jewson, 2012). The variation of responses across EU countries displayed in Figure 22 seems to confirm the expectation that a deregulated training market, such as in the UK, is particularly sensitive to changing economic conditions while the inclusive regimes in Nordic countries have substantially stepped up their training efforts in times of economic downturns.

There is ample scope for the development of effective policies that will encourage employers to invest in their workforce. On the one hand, this is the expectation of a long-term continuation of the employment relationship and the retention of skilled workers that makes investment in adult learning attractive. On the other hand, legislation can promote skill development and training by employers through measures such as the right to training and portable personal training accounts for workers that were introduced in France in 2015.

Figure 22 **Skills and career development, 2005-2015**

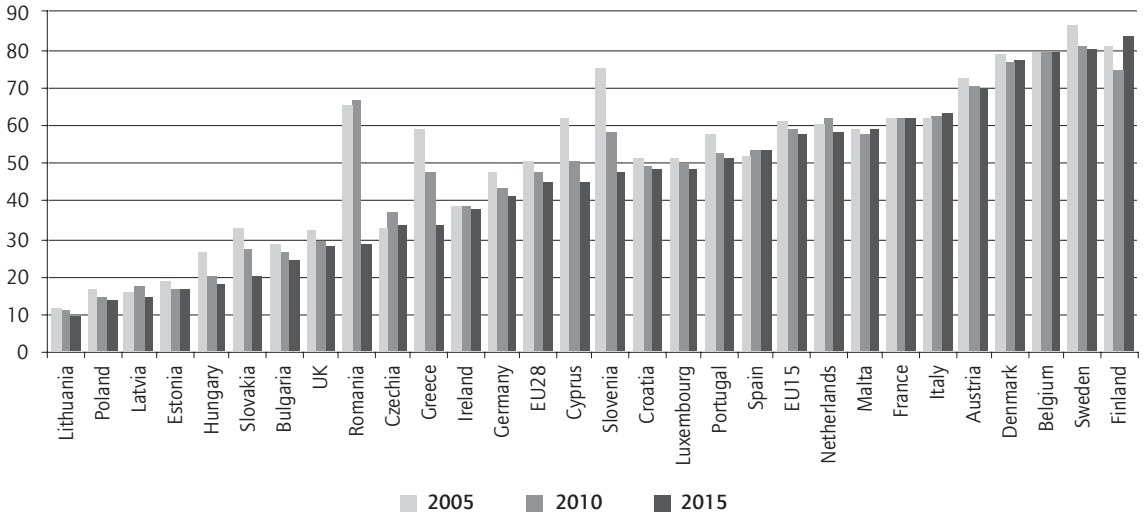



Several of the dimensions of job quality discussed above have shown improvement at EU level in recent years, but collective interest representation has substantially declined (Figure 23). As noted earlier, data constraints mean that the analysis of change over time can only be carried out for trade union density and collective bargaining coverage. Overall, the huge divergence

across EU countries with respect to collective bargaining has further deepened in recent years, as countries with strong collective actors retained or even improved their outcomes while countries at the bottom of the ranking saw a further deterioration in collective interest representation.

When analysed in greater detail, changes across Member States to a great extent reaffirm the clustering into institutional and regulatory regimes (Esping-Andersen, 1990; Hall and Soskice, 2001). The Nordic countries, including Finland, Sweden and Denmark, with a strong bargaining culture and union mobilisation, have preserved high levels of bargaining coverage and membership rates. The continental cluster has experienced an overall decline in collective interest representation, mainly driven by shrinking trade union density, although the high degree of bargaining coordination has preserved much of its coverage, except for Germany. In Mediterranean countries, the consequence of the reforms implemented after the crisis and the conditionality imposed in programme countries has been that collective bargaining has been weakened substantially, especially in Greece. In both liberal and post-transition clusters, collective interest representation, starting from an already low position, has further weakened over the analysed period, in some cases (notably Romania) actively supported by changes in national legislation.

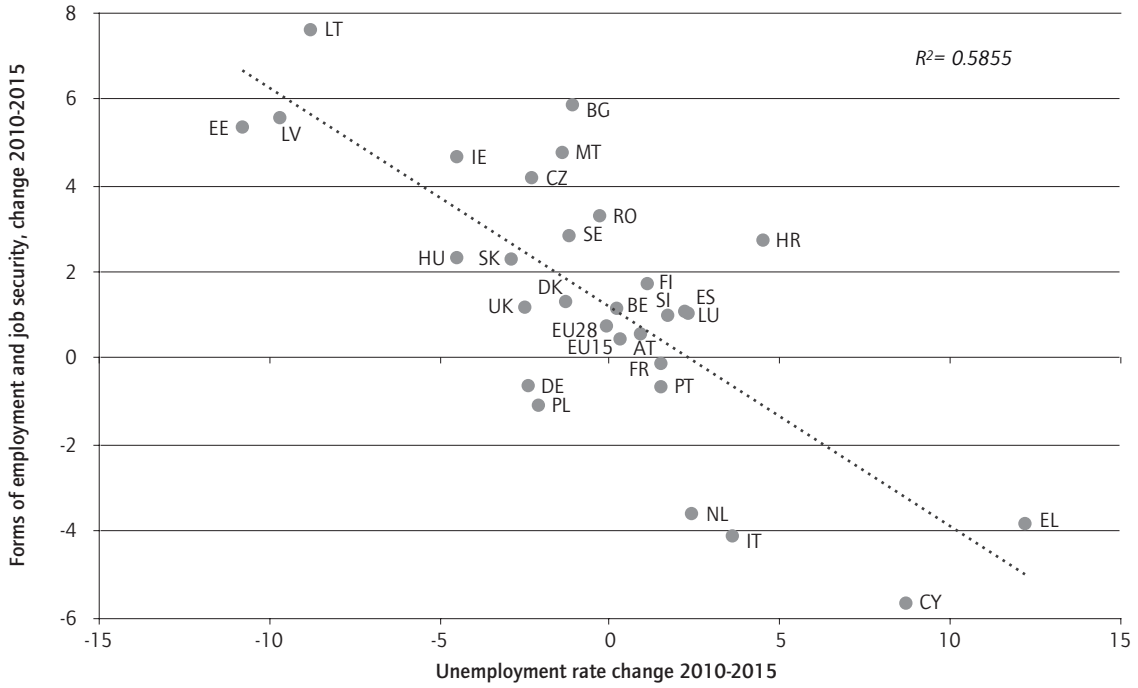
Figure 23 **Collective interest representation (collective bargaining coverage and trade union density), 2005-2015**




The changes in job quality discussed in this section have not unfolded in a vacuum. A major role has been played by the changing macroeconomic situation and the policy responses to it. A rise in unemployment and a weakened position of collective actors has given employers the upper hand in the post-2008 period. For instance, changes in the quality of forms of employment and job security are closely related to the scale of unemployment changes at country level. This is pictured in Figure 24 for the period 2010-2015.

The strong negative relationship means that, in countries where unemployment is growing, employers offer more atypical work and workers are compelled to take it up involuntarily out of a lack of other, better quality alternatives. At the other end of the spectrum, in countries with falling unemployment, workers are in a better position to decline atypical work and, as a result, the quality of employment arrangements and job security has improved.

Figure 24 **Changes in unemployment and in the JQI dimension on forms of employment and job security, 2010-2015**




Another important observation that has already surfaced in our analysis is that many of the divides between EU countries have been growing in the recent period. Thus, in many cases divergence took precedence over (upwards) convergence. This is illustrated in Figures 25 and 26, which compare levels of two dimensions of job quality in 2015 against changes in these two dimensions over the period 2010-2015. In the case of forms of employment and job security, as well as working conditions, we can clearly see that countries with better quality jobs have continued to improve while the worst performers have further deteriorated. Finally, various dimensions of job quality appear to be correlated at country level; that is, countries with good jobs measured on one dimension also tend to rank highly on other dimensions of job quality. As a result, the divergence in job quality outcomes results in a small group of countries drifting away from the EU average, alongside the existence of a group of top performers. This poses great challenges to the cohesion of the EU and to living standards for workers in countries which are most adversely affected by a deterioration in the quality of jobs.

Figure 25 **Polarisation in quality of forms of employment and job security across EU28 countries**

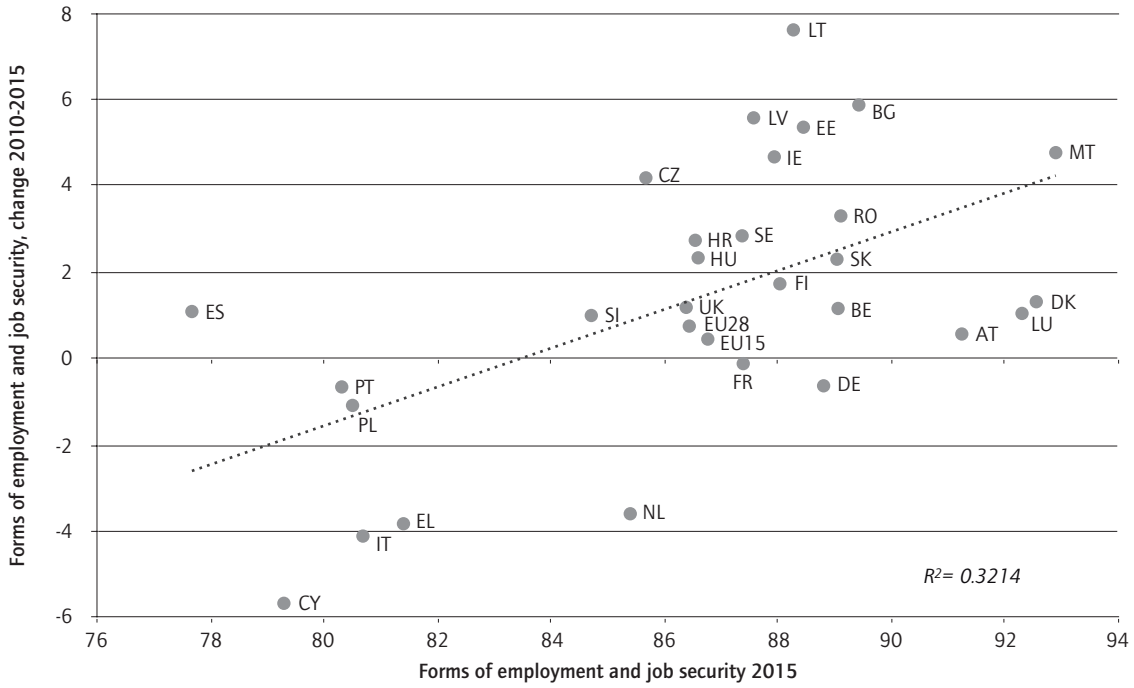
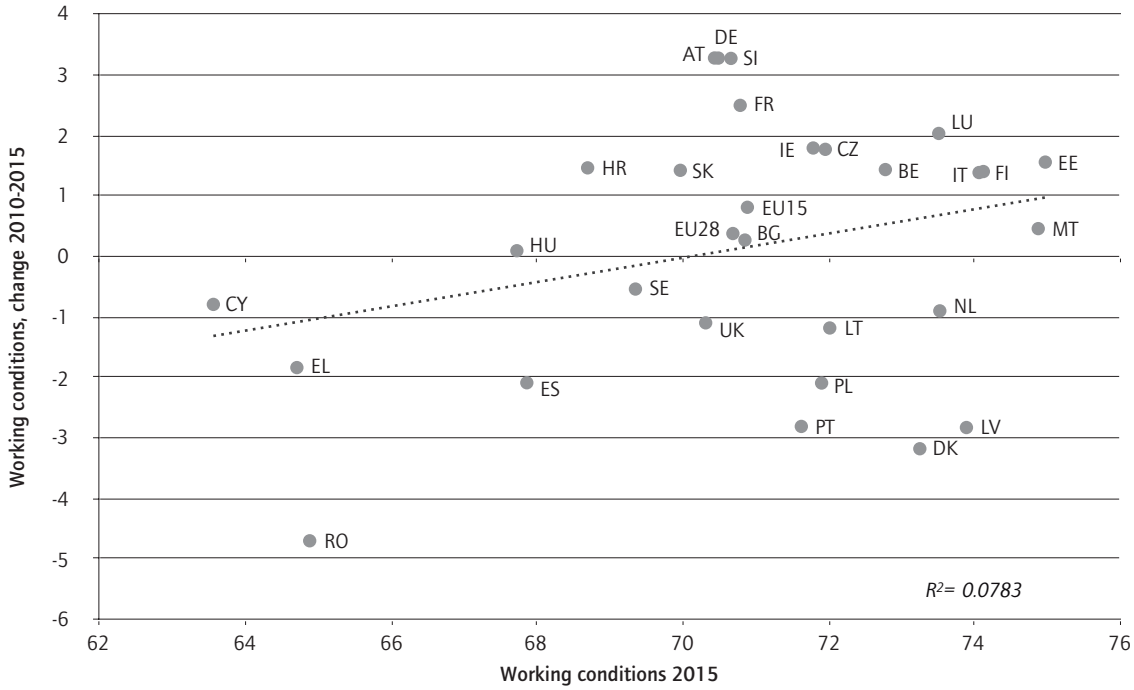



Figure 26 **Polarisation in quality of working conditions across EU28 countries**



# 6. Conclusions

This paper presents the results of the most recent update of the European Job Quality Index for EU28 countries. Where available, data for 2015 are used, with the small exception of collective interest representation for which we use the nearest available year (for most countries, 2013). Moreover, an overview of changes in the JQI over the last decade (2005-2015) is provided. We analyse the six dimensions of job quality separately and present a synthetic measure which combines all six.

The most common pattern of change in job quality in the EU over the last decade is decline, in consequence of the post-2008 crisis, followed by modest improvement. Overall, non-wage job quality has worsened over the most recent decade in the EU28. Pre-crisis real wage growth considerably slowed down after 2010, while in-work poverty amplified between 2010 and 2015 at EU level. A worrying development is that, in many aspects of job quality, the worst performing countries have seen a further deterioration. As a result, divergence rather than upwards convergence has taken place. Therefore, the resumed growth in employment levels following the post-2008 jobs crisis has been, to some extent, a 'bad jobs' recovery, marked by a return to non-standard forms of employment and with average levels of job quality in the EU remaining below pre-crisis levels.

On a positive note, the results support the view that job quality and job quantity can go hand-in-hand. There is a strong positive relationship between employment rates and overall job quality at country level, while countries with a lower quality of jobs also note higher rates of unemployment. Moreover, when looking at aggregate level, we find positive synergies between various valued features of jobs. Among others, high levels of collective interest representation are associated with higher wages, better outcomes in terms of skills and career development, and better quality of working conditions.

The Job Quality Index, at a high level of aggregation, allows for an easy yet comprehensive assessment of levels and trends in job quality. However, a closer look at each dimension, or at the results for different groups of workers (here considered in terms of gender and sector), paints a more nuanced picture. For instance, women work in jobs with better working conditions and a better quality of working time; but women are still paid much less than men and they work in less secure jobs, are more often involuntarily in atypical forms of work and have less scope for skills and career development and less access to collective interest representation.

Overall, this update of the Job Quality Index confirms that a complex phenomenon such as job quality can and should be measured. In EU employment policy, the quality of jobs remains a contested concept which has not sufficiently penetrated policy formulation, monitoring and evaluation. What is needed is a clear definition and synthetic measurement of job quality that clearly indicates the desired direction of change and the policy steps necessary to achieve it. With this update of the JQI, we deliver such an empirical tool to the policy debate on job quality at EU and national level.

## References

Benach J. and Muntaner C. (2007) Precarious employment and health: developing a research agenda, Journal of Epidemiology and Community Health, 61 (4), 276–277.

Bothfeld S. and Leschke J. (2012) 'More and better jobs': is quality of work still an issue – and was it ever?, Transfer, 18 (3), 337–353.

Bryson A., Barth E. and Dale-Olsen H. (2013) The effects of organizational change on worker well-being and the moderating role of trade unions, ILR Review, 66 (4), 989-1011.

Burchell B., Ladipo D. and Wilkinson F. (2002) Job insecurity and work intensification, London, Routledge.

Burchell B., Sehnbruch K., Piasna A. and Agloni N. (2014) The quality of employment and decent work: definitions, methodologies, and ongoing debates, Cambridge Journal of Economics, 38 (2), 459-477.

Cappelli P.H. and Keller J. (2013) A study of the extent and potential causes of alternative employment arrangements, ILR Review, 66 (4), 874–901.

De Spiegelaere S. and Piasna A. (2017) The why and how of working time reduction, Brussels, ETUI.

Dieckhoff M. (2013) Continuing training in times of economic crisis, in D. Gallie (ed.) Economic crisis, quality of work, and social integration: the European experience, Oxford, Oxford University Press, 88–114.

Drahokoupil J. and Piasna A. (2017) What drives wage gaps in Europe?, Working Paper 2017.04, Brussels, ETUI.

Esping-Andersen G. (1990) The three worlds of welfare capitalism, Princeton, Princeton University Press.

ETUI (ed.) (2017) The Social Scoreboard revisited, Brussels, ETUI.

European Commission (2012) New skills and jobs in Europe: pathways towards full employment, Luxembourg, Publications Office of the European Union.

European Commission (2017) Reflection paper on the social dimension of Europe, COM(2017) 206 final, 26 April 2017.

Felstead A., Green F. and Jewson N. (2012) An analysis of the impact of the 2008–9 recession on the provision of training in the UK, Work, Employment and Society, 26 (6), 968–986.

Forrester K. and Payne J. (2000) Trade union modernisation and lifelong learning, Research in Post-Compulsory Education, 5 (2), 153–171.

Gallie D. (ed.) (2013) Economic crisis, quality of work, and social integration, Oxford, Oxford University Press.

Hall P.A. and Soskice D. (2001) Varieties of capitalism: the institutional foundations of comparative advantage, Oxford, Oxford University Press.

Leschke J. and Watt A. (2014) Challenges in constructing a multi-dimensional European Job Quality Index, Social Indicators Research, 118 (1), 1–31.

Leschke J., Watt A. and Finn M. (2008) Putting a number on job quality? Constructing a European Job Quality Index, Working Paper 2008.03, Brussels, ETUI.

McCoshan A. (2016) How trade unions ensure quality in workplace learning, Blog [European Commission]. https://ec.europa.eu/epale/en/blog/how-trade-unions-ensure-quality-workplace-learning

Meriküll J. and Rõõm T. (2015) One currency, one price? Euro changeover-related inflation in Estonia, JCMS: Journal of Common Market Studies, 53 (4), 822–839.

Myant M., Theodoropoulou S. and Piasna A. (eds.) (2016) Unemployment, internal devaluation and labour market deregulation in Europe, Brussels, ETUI.
Norlund S. et al. (2010) Burnout, working conditions and gender - results from the northern Sweden MONICA Study, BMC Public Health, 10, 326.
Piasna A. (2017) Scheduled to work hard: the relationship between non standard working hours and work intensity among European workers (2005–2015), Human Resource Management Journal. https://doi.org/10.1111/1748-8583.12171
Piasna A., Burchell B., Sehnbruch K. and Agloni N. (2017) Job quality: conceptual and methodological challenges for comparative analysis, in D. Grimshaw et al. (eds.) Making work more equal: a new labour market segmentation approach, Manchester, Manchester University Press, 168–187.
Piasna A. and Drahokoupil J. (2017) Gender inequalities in the new world of work, Transfer, 23 (3), 313–332.
Piasna A. and Myant M. (eds.) (2017) Myths of employment deregulation: how it neither creates jobs nor reduces labour market segmentation, Brussels, ETUI.
Piasna A. and Plagnol A. (2017) Women's job quality across family life stages: an analysis of female employees across 27 European countries, Social Indicators Research. https://doi.org/10.1007/s11205-017-1743-9
Quinlan M., Mayhew C. and Bohle P. (2001) The global expansion of precarious employment, work disorganization, and consequences for occupational health: a review of recent research, International Journal of Health Services, 31 (2), 335–414.
Rubery J. and Piasna A. (2016) Labour market segmentation and the EU reform agenda: developing alternatives to the mainstream, Working Paper 2016.10, Brussels, ETUI.
Tahlin M. (2007) Skills and wages in European labour markets: structure and change, in D. Gallie (ed.) Employment regimes and the quality of work, Oxford, Oxford University Press, 35–76.
Vision (2016) Välfärdens yrken hårdast drabbade av stress, 26 March 2016. https://vision.se/nyheter/2016/mars/vision-valfardens-yrken-hardast-drabbade-av-stress/
Wood S. (2008) Job characteristics, employee voice and well-being in Britain, Industrial Relations Journal, 39 (2), 153–168.

# Annex

Table A1 **Dimensions of the Job Quality Index and their indicators: 2005-2015**

| Sub-indices | Indicators | Data source | Weighting |
|---|---|---|---|
| 1. Wages | Average net monthly earnings from main paid job, adjusted for PPP (2015) | EWCS / Eurostat | <separate> |
| | Real compensation per employee | AMECO | |
| 2. Forms of employment and job security | Temporary employment as a share of total number of employees*share of temps indicating that main reason was that they could not find permanent job | Eurostat (LFS) | 1/3 |
| | Part-time employment as a share of total number of employees*share of part-timers indicating that main reason was that they could not find full-time job | Eurostat (LFS) | 1/3 |
| | ' I might lose my job in the next six months' | EWCS | 1/3 |
| 3. Working time and work-life balance | Share of workers working more than 48 hours a week | EWCS | 1/3 |
| | Average of share of workers on shift work; Saturday work; Sunday work; night work; evening work. | Eurostat (LFS) | 1/3 |
| | ' Working hours fit with family/social commitments' | EWCS | 1/3 |
| 4. Working conditions | 'Work intensity' (working at a very high speed, working to tight deadlines and not having enough time to get the job done) | EWCS | 1/3 |
| | 'Work autonomy' (can choose/change order of tasks, methods of work, speed of work; can take a break when you wish) | EWCS | 1/3 |
| | 'Physical work factors' (vibrations; noise; high/low temperature; breathing in smoke, fumes, powder, dust, vapours such as solvents and thinners; handling chemical substances; radiation (b), tobacco smoke from other people; infectious materials; tiring or painful positions; lifting or moving people; carrying or moving heavy loads; repetitive hand or arm movements) | EWCS | 1/3 |
| 5. Skills and career development | Share of population (25-64 years) participating in education/training over four weeks prior to survey | Eurostat (LFS) | 3/5 |
| | 'My job offers good prospects for career advancement' | EWCS | 2/5 |
| 6. Collective interest representation | Collective bargaining coverage | ICTWSS database | 1/3 (2015)<br>3/5 (2005-2015) |
| | Trade union density | ICTWSS database | 1/3 (2015)<br>2/5 (2005-2015) |
| | Employee representation in the company/organisation (trade union or works council; health and safety delegate; regular meetings with employees) | EWCS | 1/3 (2015) |

Table A2 **Job quality in 2015, by each non-wage dimension and for overall JQI (sorted by scores on each dimension)**

| Forms of empl. and job sec. | | Working time and W-LB | | Working conditions | | Skills and career dev. | | Collective interest rep. | | Overall JQI (normalised) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| ES | 77.7 | EL | 69.8 | CY | 63.6 | HR | 19.2 | LT | 9.5 | EL | 0.135 |
| CY | 79.3 | SI | 76.5 | EL | 64.7 | SK | 19.7 | PL | 13.9 | RO | 0.308 |
| PT | 80.3 | SK | 76.7 | RO | 64.9 | LT | 19.8 | LV | 14.2 | ES | 0.312 |
| PL | 80.5 | ES | 76.8 | HU | 67.7 | IT | 20.7 | EE | 16.4 | PL | 0.322 |
| IT | 80.7 | RO | 78.3 | ES | 67.9 | EL | 20.8 | HU | 18.1 | HU | 0.323 |
| EL | 81.4 | IT | 78.6 | HR | 68.7 | BG | 21.7 | SK | 20.3 | CY | 0.333 |
| SI | 84.7 | MT | 79.0 | SE | 69.4 | DE | 22.4 | BG | 24.4 | SK | 0.357 |
| NL | 85.4 | PL | 79.4 | SK | 70.0 | RO | 22.8 | UK | 28.0 | HR | 0.379 |
| CZ | 85.7 | HU | 79.6 | UK | 70.3 | ES | 23.6 | RO | 28.9 | PT | 0.406 |
| UK | 86.4 | CZ | 79.9 | AT | 70.4 | BE | 23.7 | CZ | 33.5 | BG | 0.414 |
| EU28 | 86.4 | EU28 | 80.0 | DE | 70.5 | PL | 23.8 | EL | 33.8 | SI | 0.424 |
| HR | 86.5 | IE | 80.0 | SI | 70.7 | LV | 24.0 | IE | 37.8 | LV | 0.434 |
| HU | 86.6 | EU15 | 80.2 | EU28 | 70.7 | PT | 24.1 | DE | 41.6 | LT | 0.442 |
| EU15 | 86.8 | UK | 80.3 | FR | 70.8 | IE | 25.3 | EU28 | 44.5 | IT | 0.452 |
| SE | 87.4 | LV | 80.4 | BG | 70.9 | EU28 | 25.7 | CY | 45.2 | CZ | 0.456 |
| FR | 87.4 | HR | 80.5 | EU15 | 70.9 | HU | 25.8 | SI | 47.5 | EU28 | 0.502 |
| LV | 87.6 | NL | 80.6 | PT | 71.6 | CZ | 25.9 | HR | 48.4 | DE | 0.516 |
| IE | 87.9 | FI | 80.8 | IE | 71.8 | SI | 26.0 | LU | 48.5 | EE | 0.535 |
| FI | 88.0 | DE | 80.9 | PL | 71.9 | EU15 | 26.3 | PT | 51.1 | UK | 0.546 |
| LT | 88.3 | FR | 81.3 | CZ | 72.0 | CY | 26.4 | ES | 53.3 | EU15 | 0.551 |
| EE | 88.4 | BG | 81.3 | LT | 72.0 | MT | 27.0 | EU15 | 57.8 | IE | 0.568 |
| DE | 88.8 | EE | 81.4 | BE | 72.8 | AT | 27.5 | NL | 58.1 | FR | 0.600 |
| SK | 89.0 | CY | 82.1 | DK | 73.3 | EE | 28.5 | MT | 58.8 | NL | 0.609 |
| BE | 89.1 | PT | 82.4 | LU | 73.5 | FR | 29.4 | FR | 61.9 | AT | 0.635 |
| RO | 89.1 | SE | 82.7 | NL | 73.5 | NL | 30.8 | IT | 62.9 | MT | 0.655 |
| BG | 89.4 | LU | 82.7 | LV | 73.9 | LU | 31.2 | AT | 69.8 | BE | 0.674 |
| AT | 91.2 | LT | 83.1 | IT | 74.1 | UK | 31.7 | DK | 77.1 | SE | 0.730 |
| LU | 92.3 | BE | 83.1 | FI | 74.1 | FI | 36.3 | BE | 79.6 | FI | 0.777 |
| DK | 92.6 | AT | 83.2 | MT | 74.9 | SE | 36.7 | SE | 80.4 | LU | 0.785 |
| MT | 92.9 | DK | 85.8 | EE | 75.0 | DK | 42.4 | FI | 83.4 | DK | 0.915 |

Table A3 **Working conditions in 2015, for each sub-dimension and overall measure (ordered by scores on each dimension; higher scores always represent better job quality)**

| Work intensity | | Autonomy | | Physical risks | | Working conditions (overall) | |
|---|---|---|---|---|---|---|---|
| CY | 51.1 | BG | 54.2 | RO | 78.1 | CY | 63.6 |
| RO | 55.2 | HR | 56.8 | FR | 79.7 | EL | 64.7 |
| SE | 56.1 | EL | 57.6 | ES | 80.0 | RO | 64.9 |
| EL | 56.4 | HU | 58.3 | EL | 80.1 | HU | 67.7 |
| DK | 56.9 | SK | 59.0 | CY | 80.2 | ES | 67.9 |
| UK | 57.8 | CY | 59.3 | HR | 82.4 | HR | 68.7 |
| ES | 59.5 | PT | 61.1 | LT | 82.6 | SE | 69.4 |
| MT | 60.5 | RO | 61.3 | FI | 82.8 | SK | 70.0 |
| HU | 61.1 | CZ | 61.4 | LV | 83.1 | UK | 70.3 |
| DE | 61.2 | PL | 63.8 | PL | 83.2 | AT | 70.4 |
| EU15 | 61.2 | ES | 64.1 | EE | 83.2 | DE | 70.5 |
| FI | 61.4 | LT | 64.1 | SE | 83.2 | SI | 70.7 |
| BE | 62.0 | DE | 64.2 | MT | 83.4 | EU28 | 70.7 |
| EU28 | 62.1 | AT | 64.6 | SI | 83.5 | FR | 70.8 |
| AT | 62.3 | SI | 65.1 | EU28 | 83.8 | BG | 70.9 |
| IE | 62.3 | LV | 65.3 | HU | 83.8 | EU15 | 70.9 |
| FR | 63.0 | EU28 | 66.2 | LU | 83.9 | PT | 71.6 |
| NL | 63.0 | IE | 66.8 | EU15 | 84.0 | IE | 71.8 |
| SI | 63.4 | EU15 | 67.4 | BG | 84.2 | PL | 71.9 |
| LU | 64.3 | UK | 68.3 | SK | 84.2 | CZ | 72.0 |
| IT | 65.3 | SE | 68.8 | AT | 84.4 | LT | 72.0 |
| HR | 66.5 | FR | 69.7 | UK | 84.9 | BE | 72.8 |
| SK | 66.6 | BE | 70.3 | DK | 84.9 | DK | 73.3 |
| EE | 67.1 | IT | 70.3 | PT | 85.6 | LU | 73.5 |
| CZ | 67.8 | NL | 71.2 | BE | 85.7 | NL | 73.5 |
| PT | 68.1 | LU | 72.4 | DE | 86.1 | LV | 73.9 |
| PL | 68.7 | EE | 74.6 | IE | 86.2 | IT | 74.1 |
| LT | 69.4 | DK | 77.9 | NL | 86.3 | FI | 74.1 |
| LV | 73.0 | FI | 78.1 | IT | 86.5 | MT | 74.9 |
| BG | 74.1 | MT | 80.7 | CZ | 86.7 | EE | 75.0 |

Table A4 **Working conditions in 2015, by country and sector of economic activity (ordered by country)**

| | Agriculture | Manufacturing | Construction | Commerce and hospitality | Transport | Financial services | Public administration and defence | Education | Health | Other services |
|---|---|---|---|---|---|---|---|---|---|---|
| Austria | 79.1 | 65.1 | 61.9 | 69.1 | 64.9 | 74.3 | 76.4 | 78.7 | 67.8 | 74.2 |
| Belgium | 74.3 | 67.2 | 68.6 | 72.4 | 64.8 | 78.1 | 76.5 | 77.2 | 70.0 | 76.5 |
| Bulgaria | 73.4 | 60.1 | 64.5 | 75.4 | 69.0 | 80.1 | 72.2 | 78.8 | 73.1 | 75.2 |
| Croatia | 79.8 | 61.2 | 66.4 | 66.6 | 57.8 | 76.5 | 62.9 | 80.8 | 63.3 | 73.9 |
| Cyprus | 59.4 | 54.4 | 58.3 | 65.5 | 62.0 | 69.8 | 55.7 | 71.0 | 59.8 | 66.4 |
| Czechia | 71.1 | 65.2 | 65.5 | 73.7 | 64.7 | 79.2 | 68.1 | 82.8 | 73.8 | 79.3 |
| Denmark | 81.3 | 72.2 | 71.4 | 72.4 | 66.8 | 73.3 | 78.4 | 73.7 | 70.9 | 76.5 |
| Estonia | 75.5 | 68.1 | 71.9 | 74.9 | 71.8 | 77.4 | 76.1 | 82.1 | 74.0 | 80.5 |
| Finland | 76.1 | 72.6 | 69.8 | 72.8 | 66.6 | 74.1 | 76.2 | 76.0 | 72.3 | 77.7 |
| France | 64.6 | 64.3 | 63.6 | 67.3 | 62.6 | 78.6 | 76.7 | 78.1 | 70.3 | 75.2 |
| Germany | 75.2 | 63.8 | 63.2 | 71.3 | 63.6 | 80.0 | 77.6 | 78.4 | 69.2 | 75.0 |
| Greece | 65.5 | 58.5 | 64.2 | 63.3 | 60.7 | 70.7 | 65.2 | 75.2 | 61.4 | 66.6 |
| Hungary | 69.4 | 59.3 | 61.1 | 69.5 | 58.3 | 72.1 | 67.6 | 72.5 | 71.7 | 75.5 |
| Ireland | 78.9 | 65.9 | 72.6 | 70.7 | 68.3 | 69.8 | 76.3 | 77.5 | 64.3 | 77.3 |
| Italy | 73.2 | 67.2 | 68.1 | 75.3 | 68.3 | 80.7 | 77.7 | 80.3 | 70.4 | 77.3 |
| Latvia | 76.7 | 69.5 | 71.5 | 71.9 | 67.0 | 76.9 | 75.3 | 80.5 | 71.8 | 78.6 |
| Lithuania | 72.0 | 64.1 | 67.5 | 72.7 | 65.8 | 75.0 | 78.3 | 76.3 | 70.9 | 79.0 |
| Luxembourg | 75.4 | 68.0 | 64.6 | 70.4 | 64.5 | 78.9 | 75.6 | 79.1 | 70.0 | 76.3 |
| Malta | 72.3 | 68.8 | 69.6 | 76.6 | 69.1 | 78.7 | 76.4 | 77.9 | 73.5 | 78.5 |
| Netherlands | 75.3 | 73.6 | 69.4 | 70.6 | 69.0 | 80.5 | 74.1 | 76.2 | 72.2 | 76.6 |
| Poland | 72.8 | 66.1 | 65.5 | 71.9 | 66.2 | 78.6 | 76.7 | 79.3 | 74.8 | 74.6 |
| Portugal | 83.4 | 60.6 | 66.4 | 71.3 | 61.3 | 76.5 | 76.2 | 74.6 | 67.4 | 76.2 |
| Romania | 69.4 | 57.1 | 59.8 | 66.2 | 64.1 | 64.5 | 64.1 | 75.4 | 64.8 | 69.5 |
| Slovakia | 69.2 | 59.1 | 74.3 | 70.6 | 67.0 | 74.1 | 75.8 | 79.6 | 72.0 | 77.7 |
| Slovenia | 74.7 | 65.8 | 67.6 | 69.4 | 65.4 | 74.8 | 74.6 | 76.3 | 66.1 | 76.5 |
| Spain | 64.1 | 62.8 | 63.2 | 66.9 | 60.8 | 72.4 | 72.6 | 75.7 | 65.5 | 71.4 |
| Sweden | 77.6 | 69.6 | 70.3 | 67.9 | 58.4 | 69.1 | 73.2 | 70.7 | 65.7 | 73.0 |
| UK | 82.1 | 68.0 | 68.9 | 67.6 | 62.6 | 74.4 | 74.9 | 72.2 | 67.0 | 74.2 |

## ETUI Working Papers

**Bridging the gaps or falling short? The European Pillar of Social Rights and what it can bring to EU-level policymaking**
Working Paper 2017.05
Zane Rasnača

**What drives wage gaps in Europe?**
Working Paper 2017.04
Jan Drahokoupil and Agnieszka Piasna

**Foreign Direct Investment and the development of the automotive industry in Eastern and Southern Europe**
Petr Pavlínek, Ricardo Aláez-Aller, Carlos Gil-Canaleta and Miren Ullibarri-Arce
Working Paper 2017.03

**Is Europeanised board-level employee representation specific? The case of European Companies (SEs)**
Working Paper 2017.02
Jeremy Waddington and Aline Conchon

**Why central and eastern Europe needs a pay rise**
Working Paper 2017.01
Béla Galgóczi

**Uses and abuses of the OECD's Employment Protection Legislation index in research and EU policy making**
Working Paper 2016.11
Martin Myant and Laura Brandhuber

**Labour market segmentation and the EU reform agenda: developing alternatives to the mainstream**
Working Paper 2016.10
Jill Rubery and Agnieszka Piasna

**What role can minimum wages play in overcoming the low-wage model in central and eastern Europe?**
Working Paper 2016.09
Jan Drahokoupil

**Unit labour costs: no argument for low wages in eastern and central Europe**
Working Paper 2016.08
Martin Myant

These publications can be downloaded free of charge from our website.
Please visit: www.etui.org/publications