

Monitoring EU convergence  
**Upward convergence  
in working conditions**





# Upward convergence in working conditions



European Foundation  
for the Improvement of  
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Conditions

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# Contents

	<b>Executive summary</b>	<b>1</b>
	<b>Introduction</b>	<b>3</b>
	Current policy landscape	3
	Eurofound research on working conditions	3
	Aims and objectives of the study	4
	Structure of the report	5
<b>1.</b>	<b>Approach to the study</b>	<b>7</b>
	Methodology	7
	Concepts and measures of convergence	9
<b>2.</b>	<b>Analysis of convergence in working conditions</b>	<b>13</b>
	Measuring beta-convergence	13
	Results of beta-convergence analysis	13
	Beta-convergence and convergence clubs	17
	Measuring sigma-convergence	19
	Results of sigma-convergence analysis	19
	Measuring delta-convergence	26
	Summary and conclusions	28
<b>3.</b>	<b>Convergence in working conditions of women and men</b>	<b>31</b>
	Estimating gender gaps in working conditions	31
	Beta-convergence in gender gaps	33
	Sigma-convergence in gender gaps	35
	Summary	38
<b>4.</b>	<b>Drivers of upward convergence in working conditions</b>	<b>39</b>
	Potential drivers	39
	Approach to identifying drivers	43
	Results of the analysis	45
	Discussion of the results	47
	Summary and conclusions	47
<b>5.</b>	<b>Policies promoting upward convergence</b>	<b>49</b>
	Approach to the policy analysis	49
	Directive on Transparent and Predictable Working Conditions	50
	Digital Single Market strategy	53
	Lessons from the policy analysis	57
<b>6.</b>	<b>Conclusions</b>	<b>59</b>
	Is there upward convergence?	59
	What drives convergence?	60
	What impact could policy have?	60
	Lessons for policymakers	61
	<b>References</b>	<b>65</b>

## Country codes EU28

AT	Austria	FI	Finland	NL	Netherlands
BE	Belgium	FR	France	PL	Poland
BG	Bulgaria	HR	Croatia	PT	Portugal
CY	Cyprus	HU	Hungary	RO	Romania
CZ	Czechia	IE	Ireland	SE	Sweden
DE	Germany	IT	Italy	SI	Slovenia
DK	Denmark	LT	Lithuania	SK	Slovakia
EE	Estonia	LU	Luxembourg	UK	United Kingdom
EL	Greece	LV	Latvia		
ES	Spain	MT	Malta		

# Executive summary

## Introduction

This report presents new empirical evidence on whether there has been upward convergence in working conditions in the European Union over the past two decades. In other words, it considers whether the working conditions of EU Member States are more similar to each other now than in the recent past and whether those conditions have improved. The convergence analysis centres on the seven indices or dimensions of working conditions identified in Eurofound's job quality framework: Physical environment, Work intensity, Working time quality, Social environment, Skills and discretion, Prospects and Earnings.

Additional components of the study consider the extent to which there has been upward convergence in the gender gaps in these dimensions and identify possible societal and institutional drivers of upward convergence. As a complementary exercise to the quantitative analysis, the report presents an analysis, based on interviews with experts, of the potential for two EU policy instruments to address disparities in working conditions across the Member States and promote upward convergence.

## Policy context

The aspiration to the general upward convergence of Member States has been evident in successive EU treaties. However, the term 'convergence' was initially used solely in relation to the convergence of monetary and fiscal indicators. More recently, it has been acknowledged that social convergence should accompany economic convergence. As a result, the focus of policymakers has shifted to put more emphasis on eliminating social disparities across the Union.

In 2017, the European Pillar of Social Rights was proclaimed, setting out 20 key principles and rights to provide for better employment and social outcomes for EU citizens. A key part of fulfilling these aspirations is support for a process of upward convergence towards better living and working conditions in Europe. At the same time, globalisation, the digital revolution, and other broad social, political and demographic developments have the potential to generate divergence rather than convergence.

The evidence on upward convergence in working conditions provided by this study enables Eurofound to suggest targeted interventions for improving job quality through the selection of appropriate policy instruments.

## Key findings

- The study found convergence in the seven dimensions of working conditions, in terms of poorer-performing Member States catching up with better-performing Member States. In six, this was upward convergence, meaning convergence occurred in a context of improvements in these dimensions for the EU as a whole. However, not all countries demonstrated improvement in the individual dimensions.
- In the seventh dimension, Prospects (representing the area of job security and career advancement), there was convergence, but it was downward, meaning that while Member States became more alike, there was deterioration in this dimension.
- Evidence of upward convergence in the gender gaps in working conditions – towards more similar working conditions between men and women – was found in five dimensions. The exceptions were Physical environment and Prospects, where downward convergence was apparent. This implies a widening of the gender gap. Women experience better conditions than men in Physical environment, but the gender gap in Prospects is small.
- Several potential drivers of convergence in working conditions were examined – for example, welfare policies, structural change and immigration – but they were found to have limited explanatory power. This is probably due to the fact that convergence is not a single-country phenomenon, but one related to joint movement of the units of analysis (the Member States). However, with certain caveats, the findings suggest that globalisation and labour market institutions have a role to play in promoting convergence in working conditions.
- Two EU policy initiatives were examined for their potential to foster upward convergence in working conditions in the EU: the Directive on Transparent and Predictable Working Conditions and the Digital Single Market strategy. Experts interviewed about these initiatives expressed some optimism regarding EU-level policy interventions centred on improving job quality. However, it will not be possible to curtail bad practice in working conditions without adequate and targeted EU resourcing, as well as effective enforcement. While the EU plays an important role in awareness-raising and agenda-setting, the onus for implementation and enforcement largely rests with individual Member States.

## Policy pointers

- Labour market institutions operating at different levels of government contribute to upward convergence. However, EU policy implementation is the responsibility of Member States, and their national labour market institutions vary. The European Commission should undertake a review of Member States' national policy and support measures as they pertain to EU policy aspirations for the different aspects of working conditions in order to identify effective translation into good practice at organisational level.
- A focus on gender equality in working conditions remains important. Generally, gender gaps in working conditions are decreasing in the EU, and there is convergence though not across all Member States. Targeting the poorer-performing countries would help to close the gender gaps and raise the overall performance of the EU.
- The lack of progress with regard to the Prospects dimension is a concern. This dimension includes career prospects, job security and employment status, all of which came under pressure during the economic crisis. Problems in this area are compounded by non-standard forms of employment. The impact of these on workers' prospects requires further investigation and action if workers are to feel the benefits of economic growth.
- Formal recognition of the skills acquired by workers would improve their job prospects. Skills learnt on the job, in particular, tend to go uncertified, especially when workers have multiple, and often temporary, employers. The experts interviewed for this study emphasised the need for proper accreditation of skills acquired in the workplace. One option suggested was the introduction of a skills passport held by all workers.
- Policy on the digital market must avoid exacerbating the digital divide between highly skilled and less-skilled workers and between more digitally advanced and less-advanced Member States. EU investment should be targeted where most need exists, such as the worst-performing countries and regions, and vulnerable or excluded workers.
- Monitoring and enforcement of policy implementation in respect of working conditions needs to exist at national level. If Member States lack the resources for such activities, they might be achieved through an expanded remit for the European Labour Authority.
- Social partnership can help to support upward convergence in working conditions by improving the implementation and operation of policy at EU, Member State, sector and organisational levels. The policy analysis uncovered a strong preference for such an approach among stakeholders. Given that it is supported and seemingly effective, the European Commission should enlist social partnership in its endeavours to promote upward convergence.
- There is a need to increase awareness of the benefits of improving working conditions among company management. Accumulating research links working conditions to critical issues for firms, such as productivity, innovation, employee recruitment and retention, and job satisfaction. However, this study found little evidence that this research features in management education. The European Commission might initiate a review of leading EU business schools' pedagogy in this respect.

# Introduction

## Current policy landscape

Successive European Union treaties have endorsed the overall desire for upward convergence among Member States. In the original Treaty of Rome (1957), Article 2 stated that the intention of the then European Economic Community was to ‘promote throughout the Community a harmonious development of economic activities, a continuous and balanced expansion, an increased stability, an accelerated raising of the standard of living’. Fifty years later, the Treaty on the Functioning of the European Union, signed in Lisbon in 2007, stated in Article 174 that: ‘In order to promote its overall harmonious development, the Union shall develop and pursue its actions leading to the strengthening of its economic, social and territorial cohesion.’

As Eurofound (2018b) notes, the term ‘convergence’ was initially used in the EU solely in the context of convergence of Member States in respect of monetary and fiscal indicators. More recently, there has been an acknowledgement that economic and social convergence should be complementary. However, the reality of convergence is complex. While market integration can help to bind Member States together and potentially increase living standards in all participating countries, it does not guarantee convergence in their performance. Indeed, it may generate inequalities within Member States, Member State specialisation and centre–periphery dichotomies within the EU. To this end, upward convergence specifically is a priority for the EU: it is ‘fundamental to sustaining the political cohesion and legitimacy of the Union’ (Eurofound, 2018b, p. 5).

In addition, there are specific concerns about changing labour markets, patterns of work and long-term employment trends that reveal, in some Member States, labour market polarisation into ‘good’ and ‘bad’ jobs (Eurofound, 2015a) and the expansion of some forms of non-standard employment since the Great Recession (Eurofound, 2018a). These concerns arise in the context of broader developments such as globalisation, the digital revolution, and social, political and demographic change in the EU, all of which have the potential to generate divergence rather than convergence in working conditions and so need remedial policy options.

The starting point for policy thinking is recognition that fair and well-functioning labour markets and welfare systems are essential in the EU. To this end, a European Pillar of Social Rights was proclaimed by the European Parliament, the Council and the Commission in 2017 at the Gothenburg Social Summit for Fair Jobs and Growth. The Pillar sets out 20 key principles and rights to provide for better employment and social outcomes for EU citizens (European Commission, 2017b). A key part of fulfilling these aspirations is support for a process of upward convergence towards better working and living conditions in Europe (European Commission, 2018). Economic and social convergence has thus become an important route to cohesion in the EU. The aim is to ensure that EU citizens share in economic prosperity, with the European Commission pledging a ‘new start for Europe’ as the EU recovers and grows after the Great Recession (cited in Eurofound, 2018a). In the Sibiu Declaration of 2019, the then President of the European Commission, Jean-Claude Juncker, made a clear reference to the need to reduce disparities in order to achieve an EU based on fairness for the people (Council of the European Union, 2019). Continuing this theme, the new President, Ursula von der Leyen, included ‘an economy that works for the people’ as one of her headline ambitions for the five years of her presidency (Von der Leyen, 2019).

## Eurofound research on working conditions

A range of methodologies has been used to research working conditions in the EU, and these have been applied to different sets of countries, time periods and conceptual frameworks. The studies cover general developments as well as specific issues. Mapping the findings from the current study to this body of research is therefore not straightforward.

Research on general developments in working conditions is not new. Eurofound initiated the first round of the European Working Conditions Survey (EWCS) in 1990. Its purpose was, and still is, to provide an inventory of working conditions in Europe and to enable changes and trends affecting work to be measured. In 2002, Eurofound attempted its first definition of what constitutes job and employment quality, identifying four aspects: ensuring career and employment security; maintaining and promoting the health and well-being of workers; developing skills and competencies; and reconciling working and non-working life (Eurofound, 2002).

Similarly, plotting trends using EWCS data from 1990 to 2005 and applying a multidimensional approach to working conditions, Eurofound (2009) examined the convergence and divergence of working conditions in the EU. Based on four dimensions (career and employment; health and well-being; skills development; and work–life balance) and adopting a cluster approach to look at groups of countries (based on Esping-Andersen, 1990), the study found a relative divergence in Europe after the EU expansion of 2004. On average, although the new Member States had poorer performance in terms of job quality, they were also reducing the gap with the older Member States. Among the latter, the convergence process appeared to be moving towards the average, rather than upwards towards the best results. The diversity in working conditions by clusters and countries was explained, in part, by different public policies and economic specialisation.

In 2012, Eurofound built on the 2002 framework to identify four ‘core elements’ of job quality: earnings, prospects, intrinsic job quality and working time quality. An index of each was developed. Because many of the items needed to construct the indices were included in the EWCS for the first time only in 1995, the analysis examined job quality in the 15 pre-2004 Member States (EU15) for the period 1995–2010. For overall average job quality in the EU15, a cautious observation was made of comparative stability with some improvements (Eurofound, 2012). On the question of whether the observed changes implied there had been some convergence in job quality among Member States over the period, some weaker and stronger convergence patterns were identified among the core elements. Importantly, the report noted that national institutions, policies and cultures could result in differential effects on how job quality evolves over time.

Eurofound explicitly returned to the issue of convergence and divergence of job quality in Europe in 2015. The analysis again drew on data from the EWCS, this time covering the period 1995–2010 and so taking account of the immediate effects of the Great Recession and fears about deteriorating working conditions. This time, four key dimensions of job quality were examined: Skills and discretion, Work risks, Work intensity, and Working time quality. The study found no clear pattern of convergence or divergence across all aspects of job quality between 1995 and 2010, with ‘neither harmonisation nor polarisation’ of job quality across the EU15 (Eurofound, 2015a, p. 1). When the analysis was expanded to the 27 Member States, similarities and differences were found compared to the EU15, but again it could not decipher a pattern. Within the report,

six potential reasons for divergence and convergence were discussed: institutional characteristics, institutional regimes, occupation, computer use, macroeconomic and sectoral factors, and individual worker characteristics.

More recently, data from the EWCS 2015 were used to construct seven job quality indices: Physical environment, Work intensity, Working time quality, Social environment, Skills and discretion, Prospects, and Earnings (Eurofound, 2017b). Examining the period 2005–2015, there were mixed findings of improvement and deterioration for Physical environment and Work intensity in the EU. In contrast, the Working time quality index had improved, and results for the Social environment index were generally positive. Moreover, a narrowing of the gender gap was found for the Skills and discretion index. In terms of Prospects, part-time workers reported, on average, poorer career prospects than full-time workers, and job security remained at the same level in 2015 as in 2010. Finally, for Earnings, most workers were concentrated at the lower end of the income distribution, with very few at the upper end. Additionally, the income of men was found to be substantially higher than that of women.

The conceptual framework developed by Eurofound for the analysis of job quality based on the EWCS 2015 has been employed in the convergence analysis of this study.

## Aims and objectives of the study

The aim of the current study is to analyse whether there has been upward convergence of working conditions in the European Union over the past two decades. In other words, it considers whether the working conditions of EU Member States are more similar to each other now than in the recent past. The study also seeks to understand what structural and institutional factors drive upward convergence and whether existing policy instruments might support it. To this end, the project has three objectives:

- analyse long-term trends in working conditions in EU Member States
- identify the drivers behind these trends
- identify policy instruments to help promote upward convergence

The findings are intended to provide an evidence base to enable a more targeted policy approach to improving working conditions and job quality in the EU. Given that Member States’ trajectories have diverged since 2010 (Eurofound, 2017a), emphasis is placed upon what will help to avoid continuing divergence in the future.

## Structure of the report

**Chapter 1** describes the methodology used in this study to assess convergence in working conditions in the EU. It describes the seven indices or dimensions of working conditions analysed and outlines the different approaches that have been used to measure convergence.

**Chapter 2** presents the results from applying three different measures of convergence – beta-, sigma- and delta-convergence – to the seven dimensions of working conditions.

**Chapter 3** presents an analysis from a gender perspective, examining whether there is evidence of convergence in the working conditions of men and women.

**Chapter 4** focuses on the possible drivers of convergence in job quality (or the lack of it) in the EU and identifies the main factors that accelerate or decelerate the process of convergence.

**Chapter 5** turns the focus towards policy and assesses the potential of two prominent EU policies to promote upward convergence in working conditions, with findings based on expert interviews.

The conclusion of the report summarises the main findings of the empirical analysis. It then outlines the drivers behind and obstacles to upward convergence and provides some policy pointers arising from the study.

Annexes are published online, providing further details on the statistical analyses – go to <http://eurofound.link/ef19049>



# 1 Approach to the study

This chapter addresses the analysis of convergence in working conditions in the EU. It presents the methodology used to measure job quality in each of the dimensions of working conditions, describes the datasets from which the data are drawn, and discusses the tools employed for identifying the existence (or absence) of convergence.

## Methodology

### Measuring working conditions

As proposed by Eurofound in its EWCS, job quality is objective (measurable independently of the opinion of the worker) and comprises multiple dimensions. The seven dimensions of job quality identified by Eurofound are based on aspects of work that have an independent influence (positive or negative) on health and well-being. These dimensions comprise 21 subdimensions, measured using a total of 47 underlying variables.

Convergence takes time, so it is important to study it over as long a period as possible. To make the most of the available information, this study uses the longest time period possible for each of the dimensions and subdimensions of job quality explored. Consequently, different time periods are used depending on the dimension or subdimension analysed. When adding different subdimensions to a given dimension, the analysis is limited to those years with complete information for all the underlying variables and subdimensions. Thus, within each level of aggregation, the same period of analysis is used, but in order to extract as much information as possible, the period of analysis can differ across dimensions.

Table 1 shows the dimensions and subdimensions considered in the analysis of job quality. The variables used to construct the subdimensions, as well as the country coverage, are available in Annex 1.

**Table 1: Dimensions and subdimensions of working conditions**

Dimension	Subdimension	Period of analysis
Physical environment	Ambient risks	1995–2015
	Biological and chemical risks	
	Posture-related risks	
Social environment	Adverse social behaviour	2005–2015
	Social support	
Work intensity	Quantitative demands	2005–2015
	Pace determinants and interdependency	
Skills and discretion	Cognitive discretion	1995–2015
	Decision latitude	
	Training	
Working time quality	Duration	2005–2015
	Atypical working time	
	Working time arrangements	
	Flexibility	
Prospects	Career prospects	2005–2015
	Job security	
	Employment status	
Earnings	Hourly earnings	1995–2015
	Share of low-wage workers	
	Wage inequality	
	Wage polarisation	

### Physical environment

The extensive literature on health and safety shows the existence of a close relationship between what workers do in their jobs, their work environment, and their health and risk of accidents. This dimension draws on information about ambient risks (vibrations, noise and extreme temperatures), biological and chemical risks (breathing fumes and vapours, and exposure to chemicals) and posture-related risks (jobs involving tiring positions, carrying heavy loads or repetitive movements).

### Social environment

This dimension aims to capture the exposure of workers to physical violence and unwanted sexual attention, and the level of social support for workers from colleagues and managers.

### Work intensity

This measures the quantitative demands faced by workers in terms of pace of work, tight deadlines and work pressure, as well as their capacity to control work intensity, which has major implications for job quality (Green, 2006).

### Skills and discretion

This addresses the cognitive skills required by the job, the right to decide the order of tasks, the speed of work and the methods used (so-called decision latitude). It also includes access to training, both formal and on the job (learning new things).

### Working time quality

Working time is a central aspect of working conditions and a major source of concern for workers. This dimension focuses on three elements. The first element is the existence of 'abnormal' working time arrangements, including very long (more than 48 hours) and very short (fewer than 10 hours) working weeks, long working days (more than 10 hours a day) and involuntary part-time hours. The second element deals with atypical or unsocial working hours – night work, shift work and weekend work – which have well-documented implications for the physical and social health of workers. The third element is the flexibility of working time arrangements (who sets the work schedule, uncertainty of working time and work–life balance).

### Prospects

This relates to the prospects for career advancement, the risk of losing one's job in the future and the type of contract held.

### Earnings

Earnings are so central that wages are often taken as the sole variable used to define a 'good' job (see Osterman and Shulman, 2011). For this study, Earnings

combines information about hourly earnings with three other indicators related to wage distribution: the share of low-wage workers (defined as workers with an hourly wage less than two-thirds of the median wage); wage inequality, as measured by the Gini index; and wage polarisation (the concentration of wages at both ends of the wage distribution), as measured by the Foster and Wolfson (2010) bipolarisation index.

### Underlying variables

Most of the subdimensions in the model are constructed using more than one variable. In those cases, and in line with previous Eurofound (2018b) work, a simple method of aggregation is used, based on the arithmetic average of the variables included in each dimension. All the variables have been transformed into the same metric (0–100), where higher values always mean better working conditions. The details of the transformations used in the construction of the matrix of working conditions can be found in Annex 2.

### Data gaps

Eurofound's work from the different rounds of the EWCS provides rich information on many aspects of working conditions, but the quality of data from earlier rounds is less robust than data from later rounds. This creates problems in studying convergence because it occurs over time and requires compatible longitudinal data. The construction of the different subdimensions and dimensions of working conditions is performed for the Member States – with some inevitable exceptions due to occasional lack of data, notably Croatia and Malta – all workers, and the periods 1995–2015, 2000–2015 and 2005–2015, depending on the data available and the methodology used. Each analysis of upward convergence states clearly both the time period covered and the countries, if any, excluded due to lack of data.

### Analysing gender and convergence

In terms of gender and convergence in working conditions, rather than analyse the convergence of working conditions by gender (whether there is convergence between the group of male and the group of female workers), it is more useful to study the evolution of differences in the values of the working condition dimensions between genders, that is, the evolution of gender gaps. The gender gaps in the seven dimensions (and corresponding subdimensions) have been analysed using the following equation:

$$Gap = \frac{|Dm^i - Df^i|}{Dmax^i} \quad [1]$$

where  $Dm^i$  is the value of the dimension  $i$  for male workers,  $Df^i$  is the value of the dimension  $i$  for female workers and  $Dmax^i$  is the value of the dimension  $i$  for the group of workers (male or female) with the highest value (Eurofound, 2016).

By considering the difference in the values of the dimension between genders in absolute terms, the gap can be calculated regardless of which group has the higher value. This is relevant because it could be the case that the male–female ranking is different across the dimensions and subdimensions, or between countries. In discussing these results, information is provided regarding which group (men or women) has better results in each dimension and subdimension.

## Datasets

The working conditions indices are constructed from four datasets, described below. These datasets not only have different coverage in terms of countries and dimensions, but also have differing levels of detail and data quality (see Annex 1 for details).

- **EWCS**, 1995, 2000, 2005 and 2015: This dataset provides the most comprehensive data of all the sources used in the empirical analysis. The most recent rounds of the EWCS include all the dimensions of working conditions, including wages, thus providing the key dataset for analysing the quality of jobs across Europe for almost 30 years. However, not all the variables are present in all the rounds of the survey, with particular absences in the first rounds. Moreover, the sample sizes at national level, until the most recent rounds, are quite limited.
- **European Union Labour Force Survey (EU-LFS)**, 1983–2016 (yearly files): The EU-LFS is a large survey covering all the EU Member States and five additional European countries. Its aim is to describe the evolution of the core indicators of national labour markets, which means it is less detailed than the EWCS. However, the time and spatial coverage of the EU-LFS, along with the large sample sizes, allows some assessment of progress in some core labour market conditions, such as type of contractual relationship, working time schedule, existence of non-standard employment relationships, participation in training, occupational status and, with certain limits, earnings. In this study, the EU-LFS is used for the analysis of working time and type of contract.
- **European Union Statistics on Living Conditions (EU-SILC)**, 2004–2016 (cross-sectional yearly files): The strengths of the EU-SILC are similar to those of the EU-LFS, as are its shortcomings. It provides information on working time, type of contract, occupational status and wages. Data are of a much higher quality than in the EU-LFS, but the sample sizes are smaller and time coverage is shorter. Furthermore, it is important to note that there have been substantial methodological changes in some countries, such as the collection of earnings information from administrative registers rather

than surveys, which can limit the comparability of data for some countries in specific periods. In this research, the EU-SILC is used for the analysis of the four subdimensions of Earnings from 2005 to 2015.

- **European Community Household Panel (ECHP)**, 1994–2001: The ECHP is the predecessor of the EU-SILC. It covers only 13 Member States, providing information on working time, type of contract, occupational status and wages (with much higher data quality than the EU-LFS). The ECHP is used in the current study for analysis of the four subdimensions of Earnings in the period prior to 2005.

## Concepts and measures of convergence

The concept of convergence has a long tradition in the social sciences, particularly in economics. Although the study of income disparities has deep roots, it gained prominence as a result of the rise of neoclassical growth theories since the 1950s and the contributions of Barro and Sala-i-Martin in the early 1990s (Temple, 1999; Islam, 2003; Acemoglu, 2009; Aghion and Howitt, 2009).

The social sciences literature does not provide a clearly delimited concept of convergence, particularly with respect to its non-economic aspects. The most widespread measure of convergence is beta-convergence. This is based on neoclassical growth models developed in the middle of the last century. However, researchers have developed other measures, particularly when employing broader definitions of what constitutes convergence. Four main measures and concepts of convergence can be identified in the literature (Heichel et al, 2005): beta-, sigma-, gamma- and delta-convergence.

- **Beta-convergence** occurs when the outcomes for those at the bottom end of the distribution improve faster than the outcomes for those at the top, resulting in catch-up. The approach explores the correlation between growth rate in a certain variable and its initial level. Mathematically, in its most standard formulation, beta-convergence can be described using the following equation:

$$\ln\left(\frac{y_t}{y_{t-1}}\right) = \alpha + \beta \ln(y_{t-1}) + \varepsilon_{it} \quad [2]$$

where  $y_t$  and  $y_{t-1}$  denote the outcome of the variable of interest in  $t$  and  $t-1$ , respectively, while  $\alpha$  is an intercept and  $\varepsilon_{it}$  a random disturbance. The focus of the analysis is beta ( $\beta$ ), the slope of the regression of the growth of the outcome of the variable of interest from the initial period. If  $\beta < 0$ , convergence exists.

- **Sigma-convergence** refers to a reduction in disparities over time, as measured by the standard deviation (STD) or the coefficient of variation (CV) of the variable of interest. The choice of STD or CV depends on whether the aim is analysis of the absolute differences between the variables (STD) or the differences relative to the mean (CV). These options can be presented together to show the evolution of the standard deviation with the evolution of the mean. The concept of sigma-convergence is expressed as:

$$STD = \sum \frac{|X_t - \mu_t|}{\mu_t} \quad CV_t = \frac{\sigma_t}{\mu_t} \quad [3]$$

where  $\sigma_t$  denotes the standard deviation and  $\mu_t$  the mean of the variable of interest. Although beta-convergence generally leads to sigma-convergence, the former is a necessary but not a sufficient condition for the latter. While the academic literature prioritises the use of beta-convergence, policy analysis widely employs sigma-convergence.

- **Gamma-convergence**, developed by Boyle and McCarthy (1997, 1999), proposes an ordinal approach focused on variation in the rankings of countries. The index of gamma-convergence can be expressed as:

$$\gamma_t = \frac{\text{var}(\text{ranking}[y_t] + \text{ranking}[y_{t-1}])}{\text{var}(2 \cdot \text{ranking}[y_{t-1}])} \quad [4]$$

- **Delta-convergence** uses an exemplary case or frontrunner, often chosen in a discretionary way, and assesses the distance of the other units of analysis from this frontrunner. It can be expressed as:

$$\delta = \sum_{i=1}^n [\max(x_{it}) - x_{it}] \quad [5]$$

This approach is rarely employed in studies of convergence, being used primarily in qualitative research. There is no clear advantage in using delta-convergence over the other measures, except perhaps in terms of communication to a non-academic audience (see, for instance, Noy and Sprague-Jones, 2016).

## Approach of the current study

The main measure of convergence used in this study is beta-convergence. This is complemented by analyses using sigma-convergence and delta-convergence, offering a complete account of the dynamics of convergence. For the purpose of this study, the three measures can be defined as follows.

- Beta-convergence occurs when Member States with poorer working conditions catch up with those Member States that have better working conditions.

- Sigma-convergence is the reduction of disparities among the Member States in terms of working conditions.
- Delta-convergence focuses on the gap between the best-performing Member State in each of the dimensions of working conditions and the rest.

Apart from its deep theoretical roots, the key benefit of using beta-convergence is that it enables rigorous exploration of other issues relating to convergence, in particular the existence of conditional convergence and convergence clubs, discussed next.

## Conditional convergence

Convergence can be conditional or unconditional. Unconditional convergence is difficult to establish, as countries can exhibit very different underlying structural characteristics that promote or inhibit different aspects of convergence, leading to dissimilar long-term situations. Consequently, the most useful extension of the beta-convergence approach is in exploring progress towards sustained outcomes (in growth theory, this would include per capita income or productivity per worker) between countries with similar structural endowments, such as human capital or infrastructure. This is conditional beta-convergence, which one can operationalise by including controls in equation [1] above. For instance, to study the existence of conditional beta-convergence, given a characteristic  $z_i$  (a particular institutional feature), one can regress the growth of an outcome on its initial level and the endowment, as follows:

$$\ln\left(\frac{y_t}{y_{t-1}}\right) = \alpha + \beta \ln(y_{t-1}) + \phi z_i + \varepsilon_{it} \quad [6]$$

It could be that there is no *unconditional* convergence between a set of countries, but, when controlling for a certain variable – that is, considering the impact on working conditions of other variables not included in the analysis in the unconditional form of convergence – the growth of the outcome is negatively correlated to the initial level (convergence conditioned on that control variable), in which case *conditional* convergence exists. The concept of conditional convergence is of particular use in the analysis of the drivers of convergence, which is central to the analysis presented in this report.

## Convergence clubs

The second extension of the concept of beta-convergence is in the investigation of convergence clubs. Empirical evidence provides little support for absolute (unconditional) convergence, but there is evidence to suggest that lagging countries tend to catch up with the leading countries, and these countries can be divided into subgroups known as ‘convergence clubs’.

Although, in principle, it is possible to analyse trajectories towards a common outcome level within a group of countries using different concepts of convergence, beta-convergence is the most applicable analytical tool for addressing this issue. The existence of different types of convergence between different sets of countries using, for example, tests like the one proposed by Phillips and Sul (2007), is beyond the scope of this report. However, to demonstrate the broad geographical patterns of convergence, the findings from analysis of beta-convergence for the whole EU and for two different sets of countries are presented later in this report: the EU15 versus the EU13 (the Member States that joined the EU from 2004 onwards); and the centre countries (Austria, Belgium, Denmark, Finland, France, Germany, the Netherlands, Sweden and the United Kingdom) versus the periphery (the remaining 19 Member States).<sup>1</sup>

### Strict and weak upward convergence

One shortcoming of the concept of convergence is that, as it is traditionally concerned with the reduction of disparities in a given variable among a group of countries, it does not explain whether such convergence is the result of deterioration of the variable in the better-performing countries or an improvement of the variable in the worse-performing countries. Either way, in terms of convergence, the result is the same. For this reason, the evolution of the standard deviation (or the beta value in the case of beta-convergence) is presented together with the evolution of the mean to determine whether convergence is achieved by an overall improvement in performance or a decline in the better-performing countries.

Starting from the definition of upward convergence as the sum of the reduction of disparities in the country values in a context of an improving mean, two different

situations can be identified. Firstly, weak upward convergence takes  $y_{it}$  as a continuous random variable, the outcome or indicator of interest,  $g(\cdot)$  as a monotonically increasing function of dispersion and  $\mu(\cdot)$  as the mean function, such that there is weak upward convergence if:

$$\begin{cases} g(y_t) < g(y_{t-1}) \\ \mu(y_t) \geq \mu(y_{t-1}) \end{cases} \quad [7]$$

In other words, there is weak convergence if the dispersion of the analysed outcome decreases and the average of the indicator of interest increases over time.

Eurofound (2018b) also proposes a strict definition of upward convergence:

$$\begin{cases} g(y_t) < g(y_{t-1}) \\ y_{it} \geq y_{it-1} \quad \forall i \end{cases} \quad [8]$$

Using this strict definition, the existence of upward convergence requires the decrease of dispersion and the increase of the indicator of interest in all the countries considered in the analysis. The existence of strict upward convergence implies that weak upward convergence also exists, but weak upward convergence is a necessary, though not a sufficient, condition for strict upward convergence. In principle, the analysis of dispersion does not require the choice of a single approach to convergence. For example,  $g(\cdot)$  can be linked to either beta- or sigma-convergence.

Table 2, overleaf, describes the different convergence and divergence dynamics that can be observed. Out of all the possibilities, the most desirable outcome is strict upward convergence: a reduction in the country differences in the context of an improvement in the overall average, as well as improvements in each country's average.

<sup>1</sup> This is a widely used classification of 'centre' and 'periphery' countries (Rozmahel et al, 2014).

**Table 2: Summary of convergence and divergence dynamics**

<b>Beta-convergence</b>	The growth rate of the variable of interest is inversely related to the level of the variable in the base year
<b>Sigma-convergence</b>	Reduction in the dispersion of the variable of interest in the Member States (as measured by the standard deviation) over the period analysed
<b>Upward convergence (weak)</b>	Collective improvement in the average of the variable of interest in the Member States and a reduction in disparities over the period analysed
<b>Strict upward convergence</b>	Improvement in the performance of the variable of interest in all the Member States and a reduction of disparities over the period analysed
<b>Downward convergence (weak)</b>	Collective deterioration in the average of the variable of interest in the Member States and a reduction of disparities over the period analysed
<b>Strict downward convergence</b>	Deterioration of the performance of the variable of interest in all the Member States and reduction of disparities over the period analysed
<b>Beta-divergence</b>	The growth rate of the variable of interest is directly related to the level of the variable in the base year
<b>Sigma-divergence</b>	Increase in the dispersion of the variable of interest in the Member States (as measured by the standard deviation) over the period analysed
<b>Upward divergence (weak)</b>	Collective improvement in the average of the variable of interest in the Member States in a context of an increase in disparities over the period analysed
<b>Downward divergence (weak)</b>	Collective deterioration in the average of the variable of interest in the Member States in a context of an increase in disparities over the period analysed
<b>Strict downward divergence</b>	Deterioration of the performance of the variable of interest in all the Member States and an increase in disparities over the period analysed

Source: Authors' analysis, based on Eurofound (2018b)

## 2 Analysis of convergence in working conditions

### Measuring beta-convergence

The main measure of convergence used in this study is beta-convergence. Beta-convergence occurs when countries with lower values in, for example, the Physical environment dimension experience higher growth rates than those countries starting from better positions, in a context of overall improvement of the average value. Therefore, upward beta-convergence can be interpreted as the poorer-performing countries catching up with the top performers in a dimension of working conditions, together with an overall improvement of the EU average in the dimension. Furthermore, if all the countries in the sample show improvement in a dimension, the situation is described as strict upward convergence. Conversely, if one or more countries fail to show an improvement, the situation is described as weak upward convergence.

In order to maximise the number of cases and improve the statistical properties of the analysis, a regression analysis has been conducted using growth rates in the different subperiods (1995–2000, 2000–2005, 2005–2010 and 2010–2015) as the independent variable and the value of the variable in the base year (1995, 2000, 2005 and 2010, respectively) as the dependent variable. To maximise the data points of the analysis, all countries for which there are data at a given time point are included, so the number of countries included increases over the time period studied, reaching the EU28 in most cases from 2005 onwards.<sup>2</sup>

Beta-convergence analysis estimates a beta coefficient. A negative value of this coefficient can be interpreted as confirmation of the existence of convergence in the specific working condition analysed. This is because it implies the existence of an inverse relationship between the value in the base year and its growth rate: the higher the value in the base year, the lower the growth of the variable during the period of analysis. Following this, the absolute value of the coefficient can be interpreted in terms of the speed of the convergence process, with higher values indicating faster convergence.

In line with the method followed to estimate the beta coefficient, the growth of the dimensions analysed has been calculated as the average of the mean growth in the different five-year periods considered. The results

are expressed as a yearly average rate of growth to allow for the comparison of results among dimensions with different time periods.

### Results of beta-convergence analysis

#### Findings on seven dimensions

Table 3 shows that there was beta-convergence in six of the seven dimensions of working conditions over two decades. In all six cases, the convergence can be characterised as weak upward convergence because improvements did not occur in all Member States. The seventh dimension, Prospects, shows weak downward convergence, meaning that countries have become more alike on this dimension but in a context of a decrease in the overall value – the decrease being apparent in 25 of the 28 EU Member States. Thus, in the area of job security and career advancement, the narrowing of the performance gap between the Member States has occurred due to a deterioration of these working conditions in the majority.

Although the other six dimensions all show weak upward convergence, there are large differences across the dimensions in the number of countries contributing to it. For example, for Earnings, only Bulgaria fails to show progress during the period. This means that if Bulgaria was excluded, there would be strict upward convergence in Earnings, that is, convergence in the context of improvements across all countries. Similarly, in the case of Physical environment, only Denmark and Poland fail to improve their performance. For the remaining four dimensions, the number of countries that register a decline is larger, from 9 countries for Working time quality to 14 countries for Skills and discretion.

It is important to note that in most dimensions, the countries that fail to improve do so with very small, often marginal, negative values. It may be more realistic, although not mathematically accurate, to talk about stagnation rather than deterioration in the relevant dimension of job quality in these countries.

<sup>2</sup> In order to check the robustness of the approach followed, an alternative analysis has been produced using a balanced panel for the shorter period 2005–2015 with 23 Member States. Overall, the dynamics of upward convergence obtained are similar to the one shown by the larger sample (with expected differences due to the change in sample and period of analysis), confirming the validity of the empirical strategy followed. See Annex 3 for details.

**Table 3: Beta-convergence patterns in seven dimensions of working conditions**

Dimension	Beta coefficient	EU average annual growth rate (%)	Characterisation	Countries behind weak convergence*	N
Physical environment	-0.0607	0.26	Weak upward convergence	Denmark, Poland	2
Social environment	-0.0014	0.25	Weak upward convergence	Austria, Czechia, Denmark, Germany, Greece, Latvia, Netherlands, Poland, Slovakia, Slovenia, Sweden, UK	12
Work intensity	-0.0472	0.10	Weak upward convergence	Bulgaria, Croatia, Cyprus, France, Greece, Hungary, Ireland, Lithuania, Luxembourg, Poland, Romania, UK	12
Skills and discretion	-0.0292	0.02	Weak upward convergence	Bulgaria, Croatia, Cyprus, Czechia, Denmark, Germany, Greece, Hungary, Italy, Latvia, Netherlands, Portugal, Sweden, UK	14
Working time quality	-0.0490	0.12	Weak upward convergence	Denmark, Finland, France, Ireland, Luxembourg, Malta, Netherlands, Spain, UK	9
Prospects	-0.0626	-0.39	Weak downward convergence	Germany, Lithuania, Malta	3
Earnings	-0.0182	0.62	Weak upward convergence	Bulgaria	1

\* In the case of upward convergence, this shows Member States that did not improve during the period of analysis; in the case of downward convergence, it shows Member States that did improve.

Note: The time period for Physical environment, Skills and discretion, and Earnings is 1995–2015; the time period for Social environment, Work intensity, Working time quality and Prospects is 2005–2015.

Lastly, as shown in Figure 1, beta-convergence in working conditions in the EU occurred at different speeds across the different dimensions. For example, the Prospects dimension shows the fastest convergence rate among EU countries, although, in contrast to the other dimensions, this dimension demonstrates downward convergence, as the average value of the dimension and the values of a large number of EU Member States decrease. For the remaining dimensions with upward (if weak) convergence, Physical environment shows the fastest convergence, with a beta value of -0.0607. The slowest rate of convergence is seen in Social environment, with an upward convergence speed of only -0.0014.

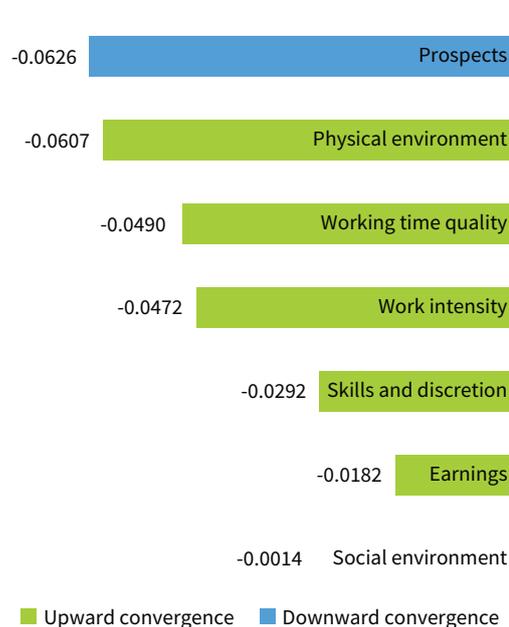
### Findings on 21 subdimensions

Table 4 shows beta-convergence in all 21 subdimensions of working conditions in the EU. In 13 of the subdimensions, convergence can be characterised broadly as upward, although it is mostly weak (in 10 subdimensions). Three subdimensions show strict upward convergence. Eight subdimensions show weak downward convergence.

In three cases, the subdimensions within each dimension show the same trend of upward convergence: Physical environment, Social environment and Working time quality. For the other dimensions, the results are more mixed.

- **Work intensity:** There is upward convergence in Quantitative demands but downward convergence in Pace determinants and interdependency, two variables relating to who controls the pace of work.

**Figure 1: Speed of beta-convergence in the dimensions of working conditions**



Notes: The chart shows beta coefficients for the dimensions of working conditions. A negative value signifies convergence. The absolute values relate to the speed of convergence, with higher absolute values meaning faster convergence. The time period for Physical environment, Skills and discretion, and Earnings is 1995–2015; the time period for Social environment, Work intensity, Working time quality and Prospects is 2005–2015.

Source: Based on Table 3

This trend has also been found in different qualitative analyses of working conditions (Green, 2006; Peña-Casas et al, 2018) and, in the study by Peña-Casas et al, was related to the use of digital procedures in production and worker control.

- **Skills and discretion:** Cognitive discretion and Decision latitude show weak downward convergence, while Training follows an upward convergence pattern.
- **Prospects:** All the subdimensions of Prospects – Career prospects, Job security and Employment status – show the same pattern of weak downward convergence, confirming an implicit sense of instability related, among other things, to companies' increased reliance on non-standard employment relationships (Gutierrez-Barbarrusa, 2016; European Parliament, 2017).

- **Earnings:** Hourly earnings shows strict upward convergence, while Share of low-wage workers shows weak upward convergence, and weak downward convergence is found for the subdimensions of Wage inequality and Wage polarisation.

The number of countries failing to meet the criteria for strict upward convergence ranges from just 4 in the subdimension of Ambient risks to 15 in the case of Flexibility (of working time) and Decision latitude. These findings mean that even in the worst cases, nearly half of the Member States experienced improvements in those subdimensions. Furthermore, the reductions in the average values of countries experiencing deterioration are mainly very small and can be interpreted more in terms of stagnation than outright deterioration.

**Table 4: Beta-convergence in the subdimensions of working conditions**

Subdimension	Beta coefficient	EU average annual growth rate (%)	Characterisation	Countries behind weak convergence*	N
<b>Physical environment</b>					
Ambient risks <sup>a</sup>	-0.0649	0.18	Weak upward convergence	Denmark, France, Lithuania, Sweden	4
Biological and chemical risks <sup>a</sup>	-0.1315	0.57	Strict upward convergence		
Posture-related risks <sup>a</sup>	-0.0471	0.22	Weak upward convergence	Belgium, Cyprus, Denmark, France, Luxembourg, Spain, Sweden	7
<b>Social environment</b>					
Adverse social behaviour <sup>b</sup>	-0.2190	0.45	Strict upward convergence		
Social support <sup>b</sup>	-0.1016	0.04	Weak upward convergence	Austria, Croatia, Czechia, Estonia, Finland, Germany, Greece, Hungary, Latvia, Netherlands, Poland, Slovakia, Slovenia, Sweden	14
<b>Work intensity</b>					
Quantitative demands <sup>b</sup>	-0.0535	0.12	Weak upward convergence	Belgium, Bulgaria, Croatia, Cyprus, France, Ireland, Lithuania, Luxembourg, Netherlands, Portugal, Romania, Spain, UK	13
Pace determinants and interdependency <sup>b</sup>	-0.0989	-0.08	Weak downward convergence	Austria, Belgium, Cyprus, Denmark, France, Germany, Greece, Hungary, Lithuania, Luxembourg, Poland, Romania, Slovakia, Spain	14
<b>Skills and discretion</b>					
Cognitive discretion <sup>a</sup>	-0.0554	-0.28	Weak downward convergence	Czechia, Lithuania, Malta	3
Decision latitude <sup>a</sup>	-0.0400	-0.04	Weak downward convergence	Austria, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Latvia, Lithuania, Luxembourg, Poland, Romania, Slovenia, Spain	15
Training <sup>a</sup>	-0.0231	0.52	Weak upward convergence	Belgium, Bulgaria, Denmark, Germany, Greece, Hungary, Italy	7

Subdimension	Beta coefficient	EU average annual growth rate (%)	Characterisation	Countries behind weak convergence*	N
<b>Working time quality</b>					
Duration <sup>c</sup>	-0.0513	0.09	Weak upward convergence	Austria, Denmark, Ireland, Luxembourg, Malta, Netherlands, Spain, Sweden	8
Atypical working time <sup>a</sup>	-0.0435	0.07	Weak upward convergence	Cyprus, Denmark, Croatia, Hungary, Ireland, Malta, Netherlands, Portugal, Slovakia, Slovenia, Spain, Sweden	12
Working time arrangements <sup>b</sup>	-0.0195	0.06	Weak upward convergence	Belgium, Bulgaria, Finland, Ireland, Italy, Latvia, Luxembourg, Malta, Poland, Romania, Slovenia	11
Flexibility <sup>c</sup>	-0.0582	0.07	Weak upward convergence	Austria, Belgium, Denmark, Germany, Greece, France, Hungary, Ireland, Latvia, Luxembourg, Malta, Netherlands, Portugal, Sweden, UK	15
<b>Prospects</b>					
Career prospects <sup>b</sup>	-0.0504	-1.48	Weak downward convergence	Germany, Portugal	2
Job security <sup>b</sup>	-0.1169	-0.01	Weak downward convergence	Bulgaria, Croatia, Czechia, Estonia, Finland, Germany, Hungary, Lithuania, Malta, Romania, Slovakia, Sweden	12
Employment status <sup>a</sup>	-0.0227	-0.24	Weak downward convergence	Finland, Ireland, Latvia, Lithuania, Luxembourg, Romania, Spain, UK	8
<b>Earnings</b>					
Hourly earnings <sup>a</sup>	-0.0302	5.77	Strict upward convergence		
Share of low-wage workers <sup>a</sup>	-0.0314	0.12	Weak upward convergence	Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, Germany, Italy, Netherlands, Spain, UK	12
Wage inequality <sup>a</sup>	-0.0451	-0.12	Weak downward convergence	Czechia, Greece, Hungary, Italy, Latvia, Lithuania, Malta, Poland, Portugal, Romania, Slovakia, Slovenia, Sweden	13
Wage polarisation <sup>a</sup>	-0.0320	-0.11	Weak downward convergence	Czechia, France, Greece, Hungary, Ireland, Latvia, Lithuania, Poland, Portugal, Slovakia, Slovenia, Sweden	12

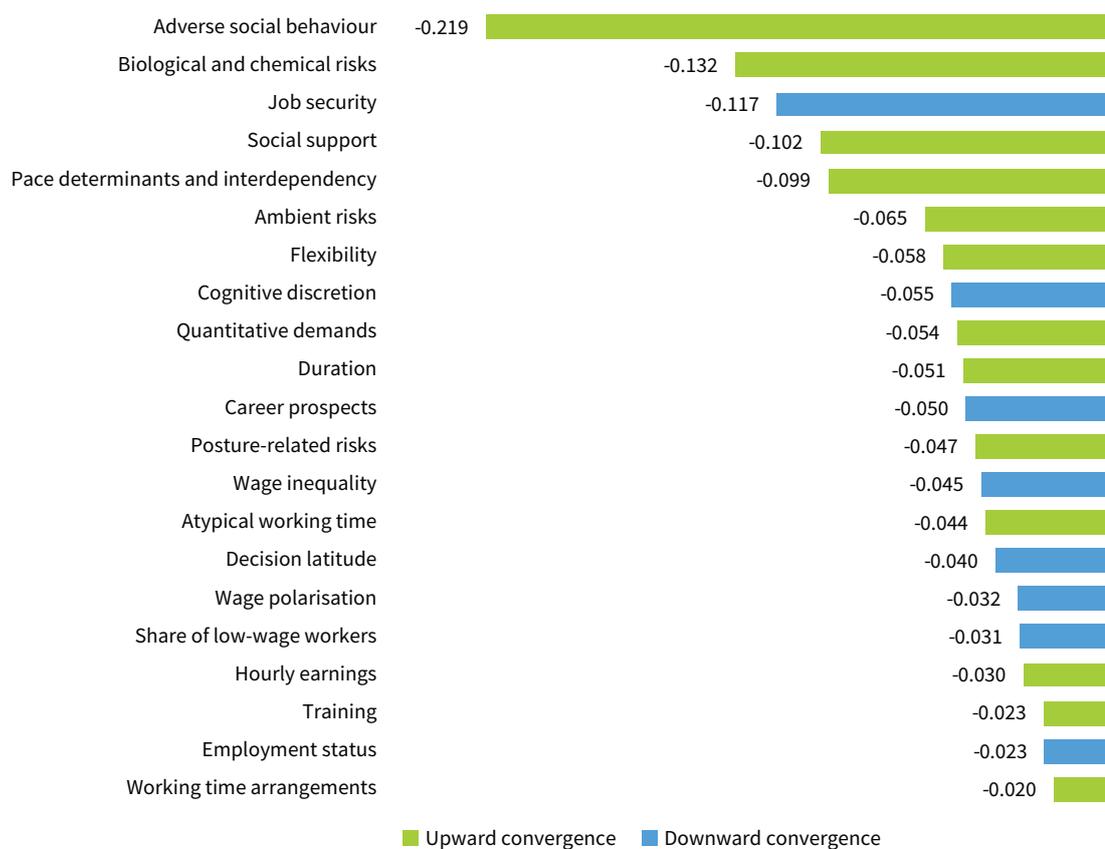
\* In the case of upward convergence, this shows Member States that did not improve during the period of analysis; in the case of downward convergence, it shows Member States that did improve.

<sup>a</sup> 1995–2015; <sup>b</sup> 2005–2015; <sup>c</sup> 2000–2015

In relation to the subdimensions that show downward convergence, in all cases this convergence is weak, meaning that such deterioration or stagnation of working conditions is not present in all Member States. The number of countries with no deterioration is lower than in the case of weak upward convergence, and in two cases – Career prospects and Cognitive discretion – two and three countries, respectively, show improvements in the indicator during the period of analysis. In other words, while there are exceptions to the general pattern of stagnation or deterioration, these exceptions are so few in number that it is still possible to talk about a generalised process of stagnation or deterioration of working conditions as measured by these two subdimensions.

Figure 2 illustrates the different speeds of beta-convergence across the different subdimensions. The top five positions are occupied by three indicators of work environment – two Social environment (Adverse social behaviour and Social support) and one Physical environment (Biological and chemical risks) – one subdimension of Prospects (Job security) and one subdimension of Work intensity (Pace determinants and interdependency). The remaining subdimensions show much slower convergence.

Figure 2: Speed of beta-convergence in the subdimensions of working conditions



**Note:** The chart shows the beta coefficients for the subdimensions of working conditions. A negative value signifies convergence. The absolute values relate to the speed of convergence, with higher absolute values meaning faster convergence.

**Source:** Based on Table 4

As mentioned earlier, the longest-possible time frame for each dimension is used to analyse convergence in order to maximise the data available and to improve the econometric fit. The disadvantage is that the results shown in Table 4 and Figure 2 are not fully comparable, as the dimensions of Physical environment, Skills and discretion, and Earnings have longer periods of analysis (1995–2015). As for analysis of the dimensions, beta coefficients were calculated for the period 2005–2015 to test the robustness of the results, and the results show a similar pattern. If anything, the beta coefficients in dimensions with data covering longer periods show higher values than dimensions covering the years 2005–2015. This could be interpreted as meaning that there was a more intense process of convergence in the period 1995–2005 compared to 2005–2015 (which includes the economic crisis).

## Beta-convergence and convergence clubs

To conclude the analysis of beta-convergence, and following the debate about the possibility of there being different dynamics of convergence and divergence (upward or downward, strict or weak) among different groups of countries (convergence clubs), this section repeats the analysis of beta-convergence using two different, commonly used, groupings of EU countries. The first grouping is the standard classification of EU15 versus EU13. The second grouping is the ‘centre’ (Austria, Belgium, Denmark, Finland, France, Germany, the Netherlands, Sweden and the United Kingdom) versus the ‘periphery’ countries, which comprise the remaining Member States.

**Table 5: Beta-convergence patterns by country groupings: EU15 versus EU13, 2005–2015**

	EU15		EU13		EU28	
	Beta coefficient	Characterisation	Beta coefficient	Characterisation	Beta coefficient	Characterisation
Physical environment	-0.044	Weak upward convergence	-0.083	Weak upward convergence	-0.061	Weak upward convergence
Social environment	-0.151	Weak upward convergence	-0.158	Weak upward convergence	-0.139	Weak upward convergence
Work intensity	-0.120	Weak upward convergence	0.002	Weak downward divergence*	-0.047	Weak upward convergence
Skills and discretion	-0.029	Weak upward convergence	-0.038	Weak upward convergence	-0.029	Weak upward convergence
Working time quality	-0.037	Weak upward convergence	-0.049	Weak upward convergence	-0.049	Weak upward convergence
Prospects	-0.082	Weak downward convergence	-0.042	Weak downward convergence	-0.063	Weak downward convergence
Earnings	-0.020	Strict upward divergence*	-0.002	Weak upward convergence	-0.018	Weak upward convergence

\* Divergence due to the lack of statistical significance of the beta coefficient.

These results indicate whether the countries within each of these groupings share the same type of beta-convergence or show different patterns. The comparison is always with the other countries in the same group; that is, whether each set of countries converge among themselves. As before, the comparison between the sizes of the beta coefficients will provide information about the speed of convergence in the different sets of countries.<sup>3</sup>

Table 5 shows the estimates of beta-convergence for the EU15 and the EU13. As a reference, the table also includes the beta-convergence estimates for the whole EU. The two country groupings share the same type of convergence (weak upward convergence) for most dimensions, with the differences (for Work intensity and Earnings) reflecting the lack of statistical significance of the beta regressors. All in all, this analysis points to the existence of a similar process of upward convergence within the country groupings, with differences limited to the speed of convergence in some of the dimensions of working conditions, such as Physical environment, for example, with faster convergence in the EU13 than in the EU15.

Table 6 shows the results of the beta-convergence analysis for the Member States when they are divided into centre and periphery groups. In four of the dimensions, both groupings show the same convergence dynamics: weak upward convergence in Physical environment, Social environment, Skills and discretion, and weak downward convergence in Prospects. In contrast, in the dimensions of Work intensity, Working time quality and Earnings, the centre and periphery show different trends.<sup>4</sup> Regarding Earnings, for example, the periphery countries show convergence in a context of overall improvement for the dimension, while the core countries are characterised by divergence, again in a context of overall improvement.

Regarding the size of the beta coefficient, in most dimensions, betas are of roughly the same order of magnitude, with the exception of Physical environment, for which convergence seems to be faster in the periphery countries.

<sup>3</sup> This exercise was conducted using the longest time period possible to compensate for the reduction in the number of countries used in each regression.

<sup>4</sup> It should be noted that these differences reflect the lack of significance of the beta coefficient, probably due to the reduction in the number of countries in the sample.

**Table 6: Beta-convergence patterns by country groupings: Centre versus periphery, 2005–2015**

	Centre		Periphery		EU28	
	Beta coefficient	Characterisation	Beta coefficient	Characterisation	Beta coefficient	Characterisation
Physical environment	-0.037	Weak upward convergence	-0.072	Weak upward convergence	-0.061	Weak upward convergence
Social environment	-0.163	Weak upward convergence	-0.144	Weak upward convergence	-0.139	Weak upward convergence
Work intensity	-0.083	Weak upward convergence	-0.033	Weak downward divergence*	-0.047	Weak upward convergence
Skills and discretion	-0.040	Weak upward convergence	-0.036	Weak upward convergence	-0.029	Weak upward convergence
Working time quality	-0.035	Weak downward divergence*	-0.072	Weak upward convergence	-0.049	Weak upward convergence
Prospects	-0.089	Weak downward convergence	-0.069	Weak downward convergence	-0.063	Weak downward convergence
Earnings	-0.007	Strict upward divergence*	-0.031	Weak upward convergence	-0.018	Weak upward convergence

\* Divergence due to the lack of statistical significance of the beta coefficient.

Comparing the results from analysis of both groupings with the findings on the convergence dynamics of the EU shown in the previous section, we can conclude that there are no major differences in the type of convergence.

## Measuring sigma-convergence

Sigma-convergence (the evolution of the standard deviation), together with beta-convergence, is one of the most commonly used methods for the measurement of convergence. This section presents the results of the analysis of convergence using the evolution of the standard deviation of the 7 dimensions and 21 subdimensions of working conditions. It is important to note that sigma- and beta-convergence are two different ways of measuring convergence, and, as such, they look at different elements of convergence. Although sigma- and beta-convergence are related – the existence of beta-convergence is a necessary condition for the existence of sigma-convergence (Furceri, 2005) – it is perfectly possible to find different convergence outcomes when using one or the other method.<sup>5</sup>

Following the methodology proposed by Eurofound (2018b), the analysis of the evolution of the standard deviation over 2000–2015 or 2005–2015, depending on the availability of data, is accompanied by data on the trend in the average value of the dimension or subdimension. This approach is used to test if convergence (reduction of the standard deviation) or divergence (increase of the standard deviation) takes place in a context of a growing average of the variable

(upward convergence) or a decreasing or constant average (downward convergence or divergence). As in the previous section, the evolution of the average values of a dimension or subdimension is also analysed in order to characterise the upward or downward convergence as strict or weak.

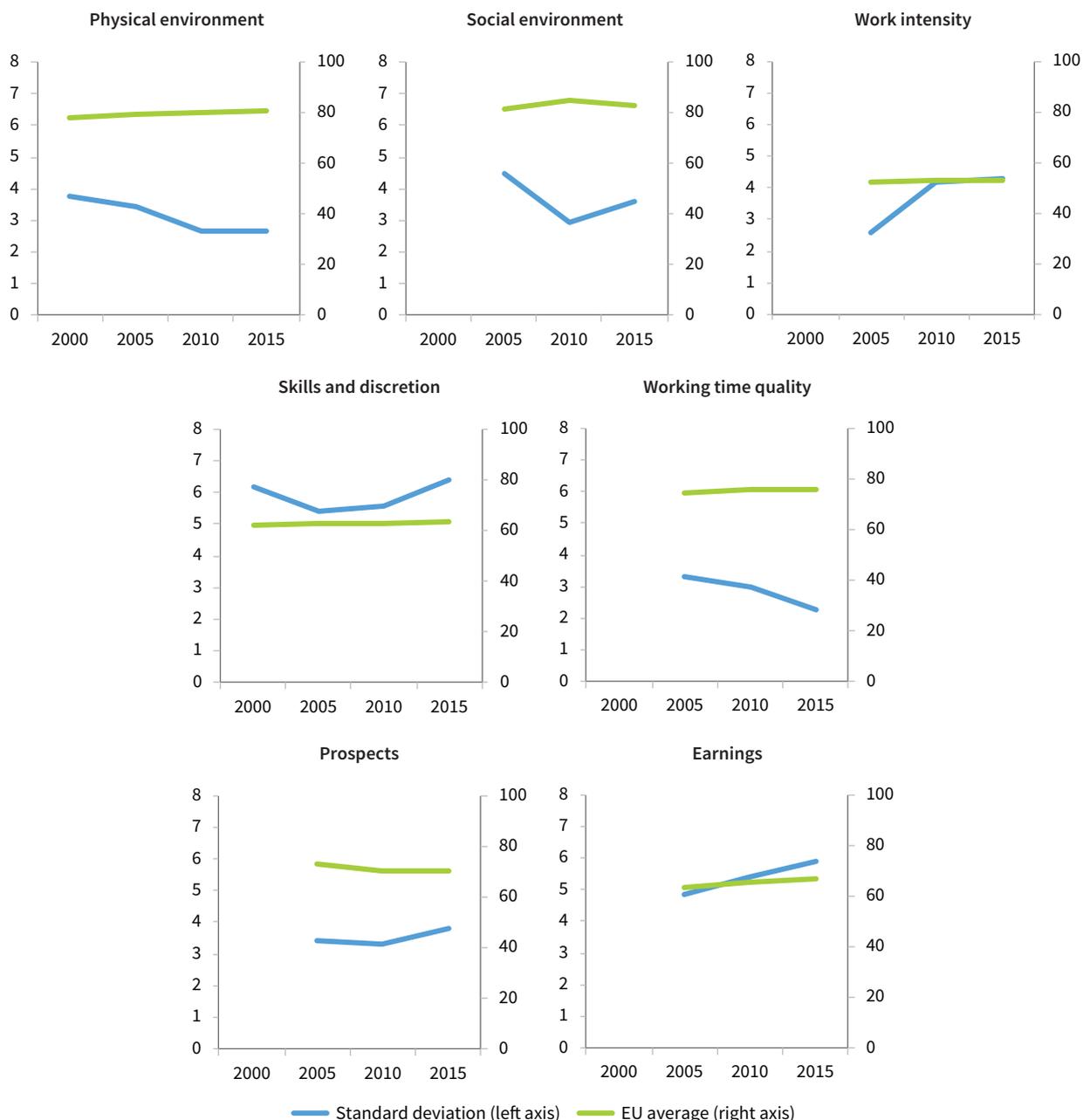
## Results of sigma-convergence analysis

Figure 3 shows the trends in the standard deviation for the seven dimensions of job quality across the EU. Two patterns stand out. The first is the different trends in the seven dimensions of working conditions. There is clear upward convergence in Physical environment and Working time quality (a decreasing standard deviation with a growing EU average) and upward divergence in Work intensity and Earnings. Social environment, Skills and discretion, and Prospects show non-linear patterns, which is probably linked to wider economic change, including the Great Recession of 2008, driving convergence up to 2010 and divergence thereafter. In the Social environment dimension, the overall trend is upward convergence, while for Skills and discretion, a trend of upward divergence is clearer, as is the downward divergence trend for Prospects.

The second notable pattern is the stability in the means of the dimensions. There is a very small improvement in Physical environment and a very small deterioration in Prospects.

<sup>5</sup> This is the case, for example, for sigma- and beta-convergence in gross domestic product (GDP) per capita in the EU28 from 2001 to 2012, where beta-convergence can be found in a context of sigma-divergence from 2001 to 2007.

Figure 3: Sigma-convergence patterns in the dimensions of working conditions



Note: Due to a lack of data for 2005, the dimensions of Working time quality and Prospects do not include Malta, and Earnings does not include Bulgaria, Croatia, Latvia, Malta or Romania.

Table 7 shows the sigma-convergence patterns in the 21 subdimensions of working conditions, as well as the values behind the charts in Figure 3, including:

- (a) the period of analysis
- (b) the difference in standard deviation between the first and last years of analysis; this difference will determine whether there is convergence (reduction in the standard deviation) or not (stagnant or increasing standard deviation) in the period
- (c) the annual growth rate of the average value of the dimension or subdimension; this will determine whether there is upward (positive growth) or downward (negative growth) convergence
- (d) the characterisation of the process of convergence or divergence as defined in Table 2
- (e) the countries that are behind the characterisation of weak convergence (those not showing improving working conditions in the dimension or subdimension analysed) or weak divergence (those not showing deterioration in the dimension or subdimension analysed)

Table 7: Sigma-convergence patterns in the dimensions and subdimensions of working conditions

Dimensions and subdimensions	Period (a)	Difference in standard deviation (b)	EU average annual growth rate (%) (c)	Characterisation (d)	Countries behind the weak convergence or divergence (e)
<b>Physical environment</b>	2000–2015	-1.07	0.17	Weak upward convergence	Denmark
Ambient risks	2000–2015	-1.00	0.24	Weak upward convergence	Austria, Denmark, France, Lithuania, Sweden
Biological and chemical risks	2000–2015	-1.86	0.06	Strict upward convergence	
Posture-related risks	2000–2015	-0.485	0.25	Weak upward convergence	Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Lithuania, Luxembourg, Latvia, Poland, Slovenia
<b>Social environment</b>	2005–2015	-0.925	0.27	Weak upward convergence	Austria, Czechia, Germany, Denmark, Estonia, Hungary, Latvia, Netherlands, Poland, Sweden, Slovakia, Slovenia
Adverse social behaviour	2005–2015	-0.958	0.50	Strict upward convergence	
Social support	2005–2015	-2.678	0.01	Weak upward convergence	Austria, Czechia, Germany, Denmark, Estonia, Finland, Hungary, Latvia, Netherlands, Poland, Sweden, Slovakia, Slovenia
<b>Work intensity</b>	2005–2015	1.698	0.13	Weak upward divergence	Bulgaria, Cyprus, Greece, Spain, France, Ireland, Lithuania, Luxembourg, Poland, Romania, UK
Quantitative demands	2005–2015	0.268	0.13	Weak upward divergence	Belgium, Bulgaria, Cyprus, Spain, France, Ireland, Lithuania, Luxembourg, Netherlands, Portugal, Romania, UK
Pace determinants and interdependency	2000–2015	0.588	0.11	Weak upward divergence	Belgium, Bulgaria, Czechia, Estonia, Finland, Ireland, Italy, Latvia, Slovakia, UK
<b>Skills and discretion</b>	2000–2015	0.238	0.12	Weak upward divergence	Cyprus, Czechia, Denmark, Greece, Hungary, Latvia, Netherlands, Sweden
Cognitive discretion	2000–2015	0.623	-0.22	Weak downward divergence	Lithuania, Luxembourg, Portugal, Slovakia
Decision latitude	2000–2015	0.924	0.10	Weak upward divergence	Austria, Bulgaria, Cyprus, Czechia, Greece, Hungary, Netherlands, Sweden, Slovakia
Training	2000–2015	0.008	0.63	Weak upward divergence	Cyprus, Czechia, Denmark, Greece, Hungary, Italy
<b>Working time quality</b>	2005–2015	-1.030	-0.02	Weak upward convergence	Germany, Denmark, Spain, Finland, France, Ireland, Luxembourg, Netherlands, UK
Duration	2000–2015	-0.319	0.00	Weak upward convergence	Austria, Denmark, Spain, France, Ireland, Luxembourg, Netherlands, Sweden
Atypical working time	2000–2015	-1.278	0.03	Weak upward convergence	Cyprus, Denmark, Spain, Ireland, Netherlands, Portugal, Sweden, Slovakia, Slovenia
Working time arrangements	2005–2015	-0.056	0.07	Weak upward convergence	Belgium, Bulgaria, Finland, Ireland, Italy, Lithuania, Luxembourg, Latvia, Poland, Romania, Slovenia
Flexibility	2000–2015	-3.115	0.19	Weak upward convergence	Austria, Belgium, Germany, Denmark, Estonia, Finland, France, Hungary, Ireland, Luxembourg, Netherlands, Portugal, Sweden, UK

Dimensions and subdimensions	Period (a)	Difference in standard deviation (b)	EU average annual growth rate (%) (c)	Characterisation (d)	Countries behind the weak convergence or divergence (e)
<b>Prospects</b>	2005–2015	0.398	-0.02	Weak downward divergence	Germany
Career prospects	2005–2015	-0.439	-1.62	Weak downward convergence	Germany, Portugal
Job security	2005–2015	-0.952	-0.02	Weak downward convergence	Bulgaria, Czechia, Germany, Estonia, Finland, Hungary, Lithuania, Romania, Sweden, Slovakia
Employment status	2005–2015	0.752	-0.08	Weak downward divergence	Belgium, Bulgaria, Denmark, Greece, Spain, Finland, Lithuania, Latvia, Romania, UK
<b>Earnings</b>	2005–2015	1.031	0.33	Strict upward divergence	
Hourly earnings	2005–2015	4.790	2.15	Strict upward divergence	
Share of low-wage workers	2005–2015	1.077	0.07	Weak upward divergence	Austria, Belgium, Cyprus, Denmark, Estonia, Spain, France, Lithuania, Netherlands, UK
Wage inequality	2005–2015	1.455	-0.04	Weak downward divergence	Austria, Cyprus, Denmark, Estonia, Spain, France, Ireland, Luxembourg, UK
Wage polarisation	2005–2015	0.693	-0.03	Weak downward divergence	Belgium, Czechia, Germany, Greece, Finland, Hungary, Ireland, Italy, Lithuania, Netherlands, Poland, Sweden, Slovakia, Slovenia

Figures 4 to 10 show the overall trends in the standard deviation and average values of the 21 subdimensions of working conditions in the EU.

Figure 4: Physical environment – sigma-convergence patterns

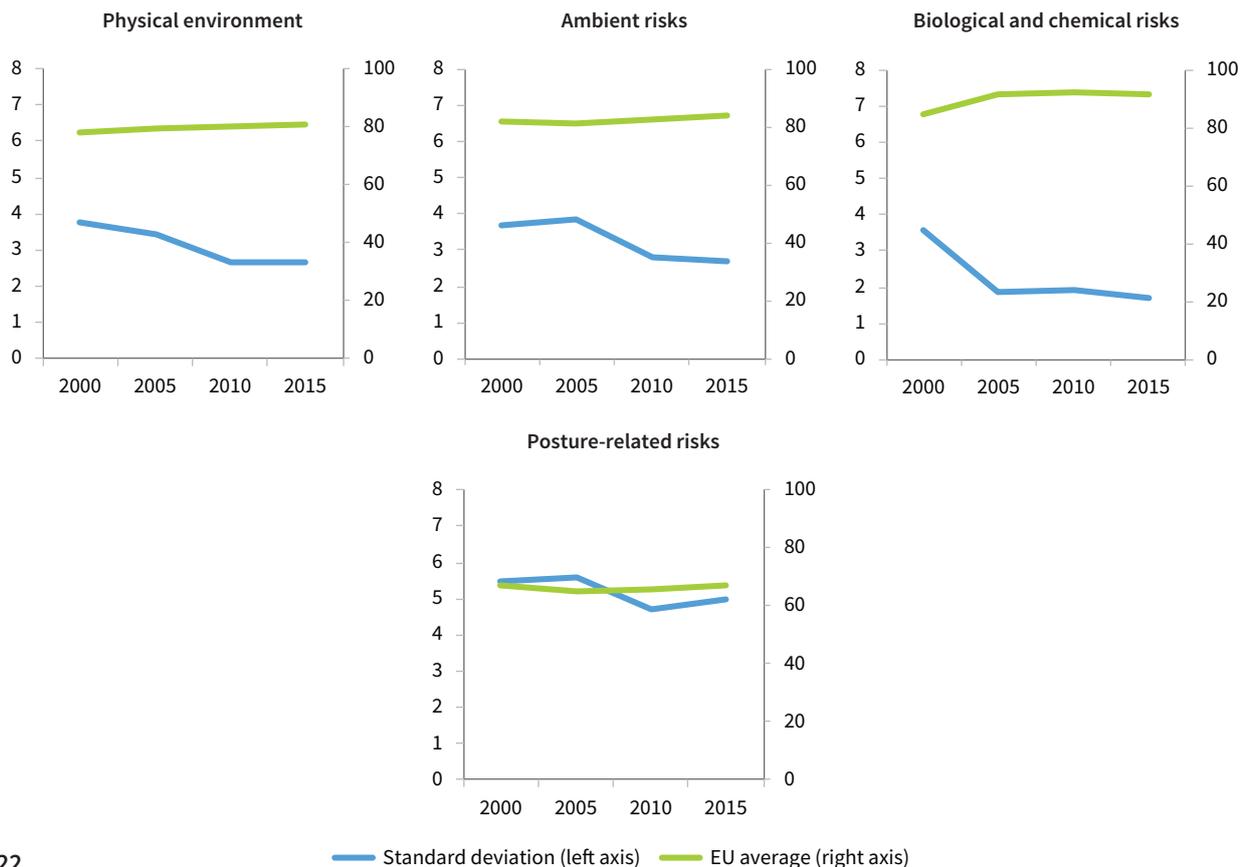


Figure 5: Social environment – sigma-convergence patterns

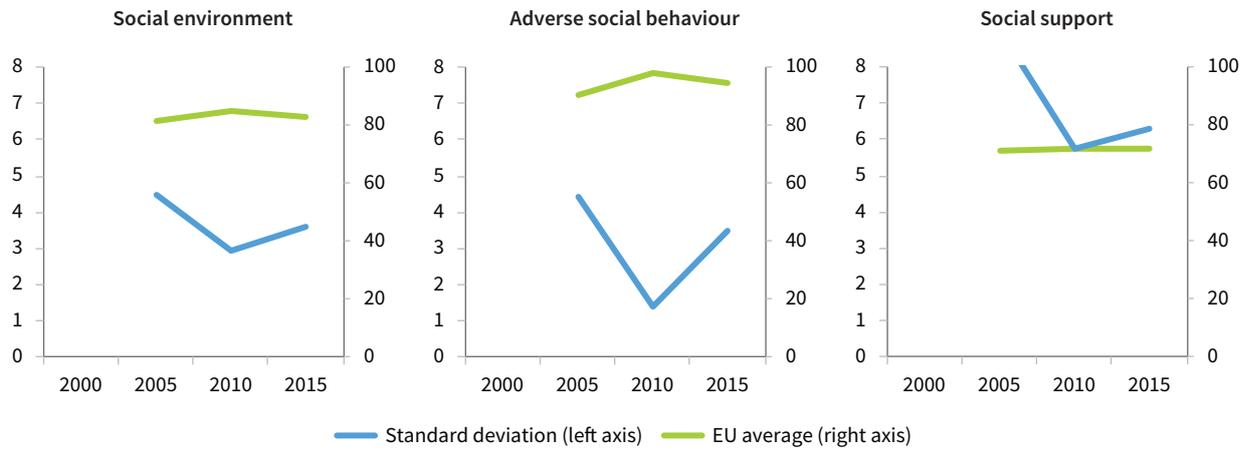


Figure 6: Work intensity – sigma-convergence patterns

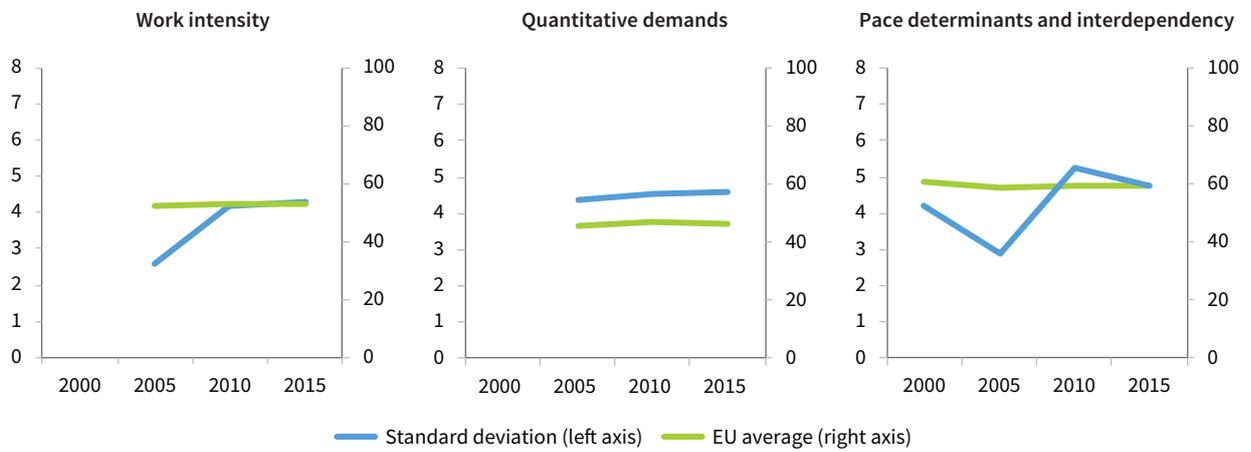


Figure 7: Skills and discretion – sigma-convergence patterns

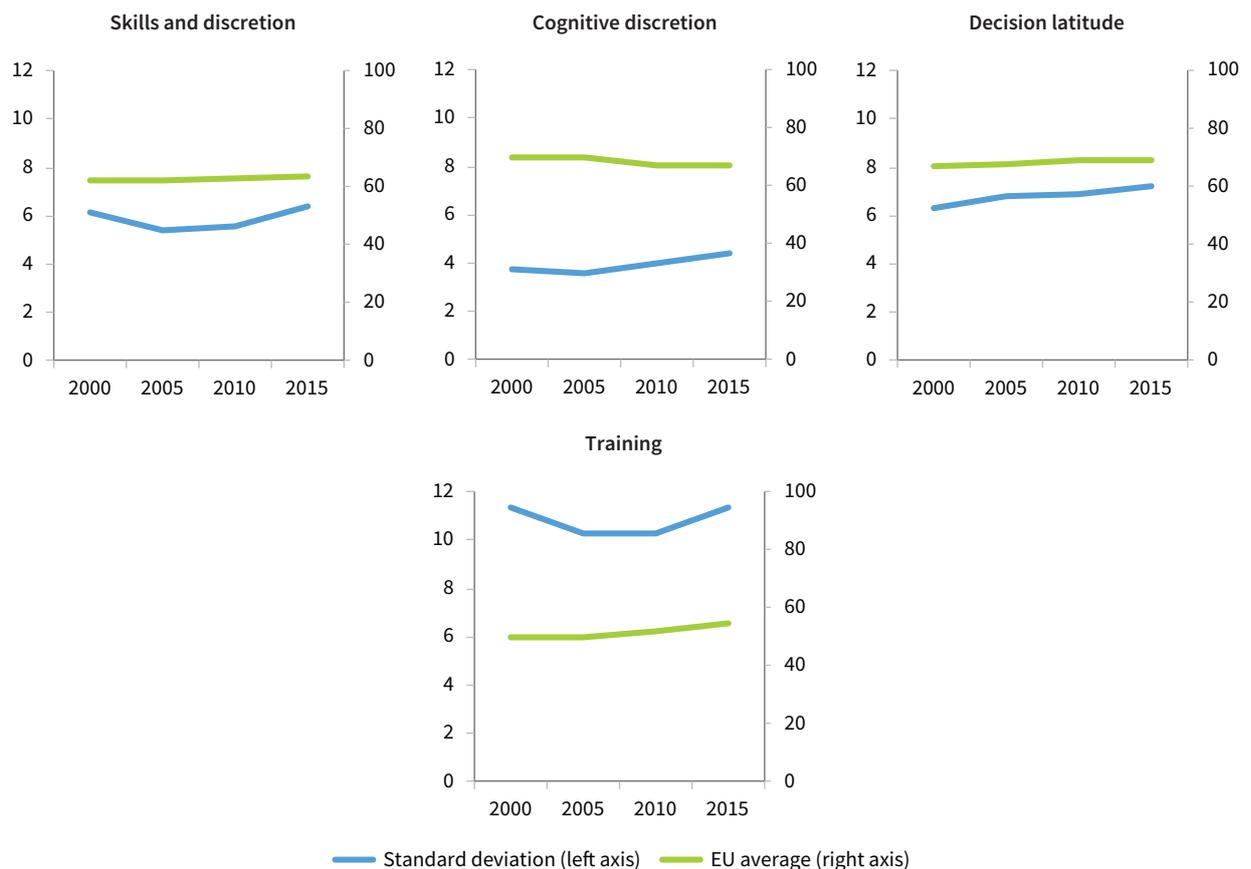
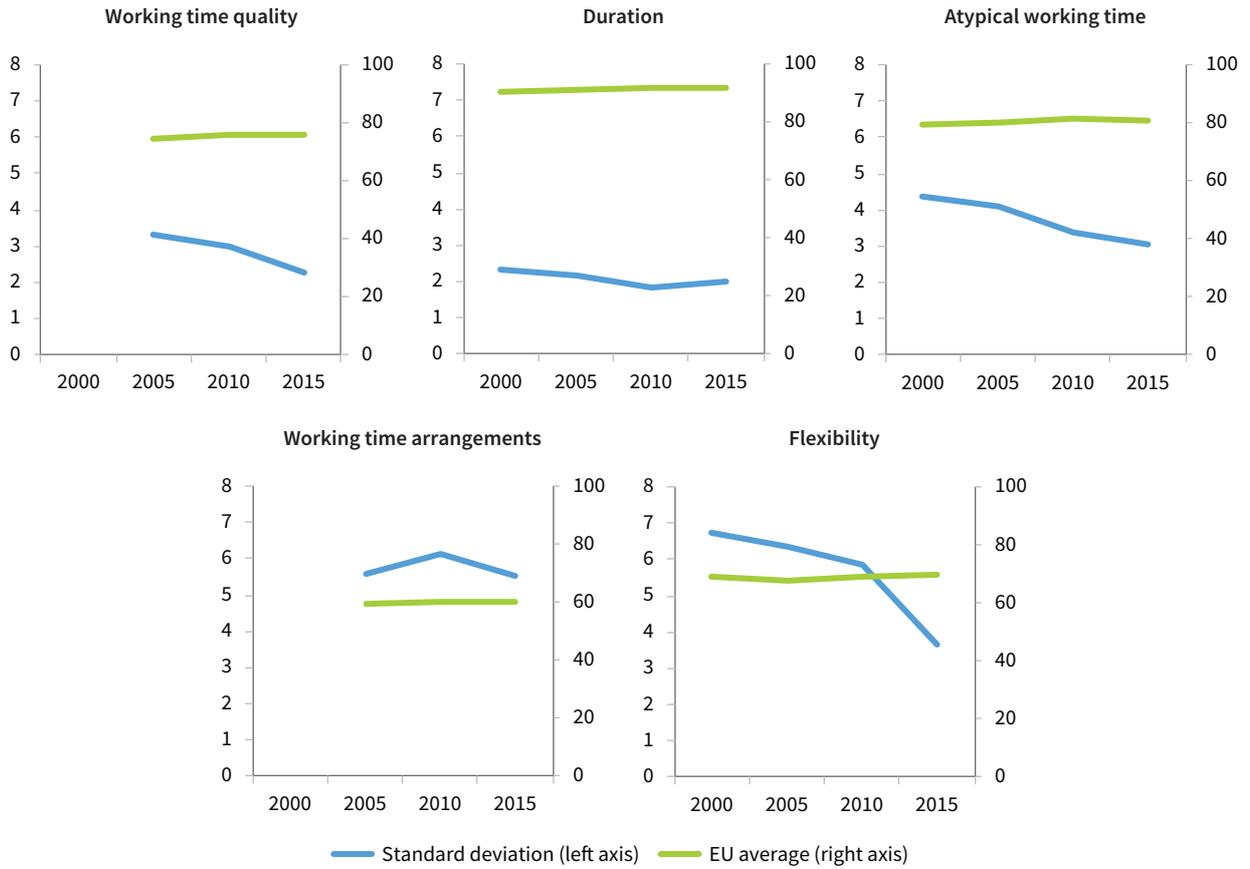
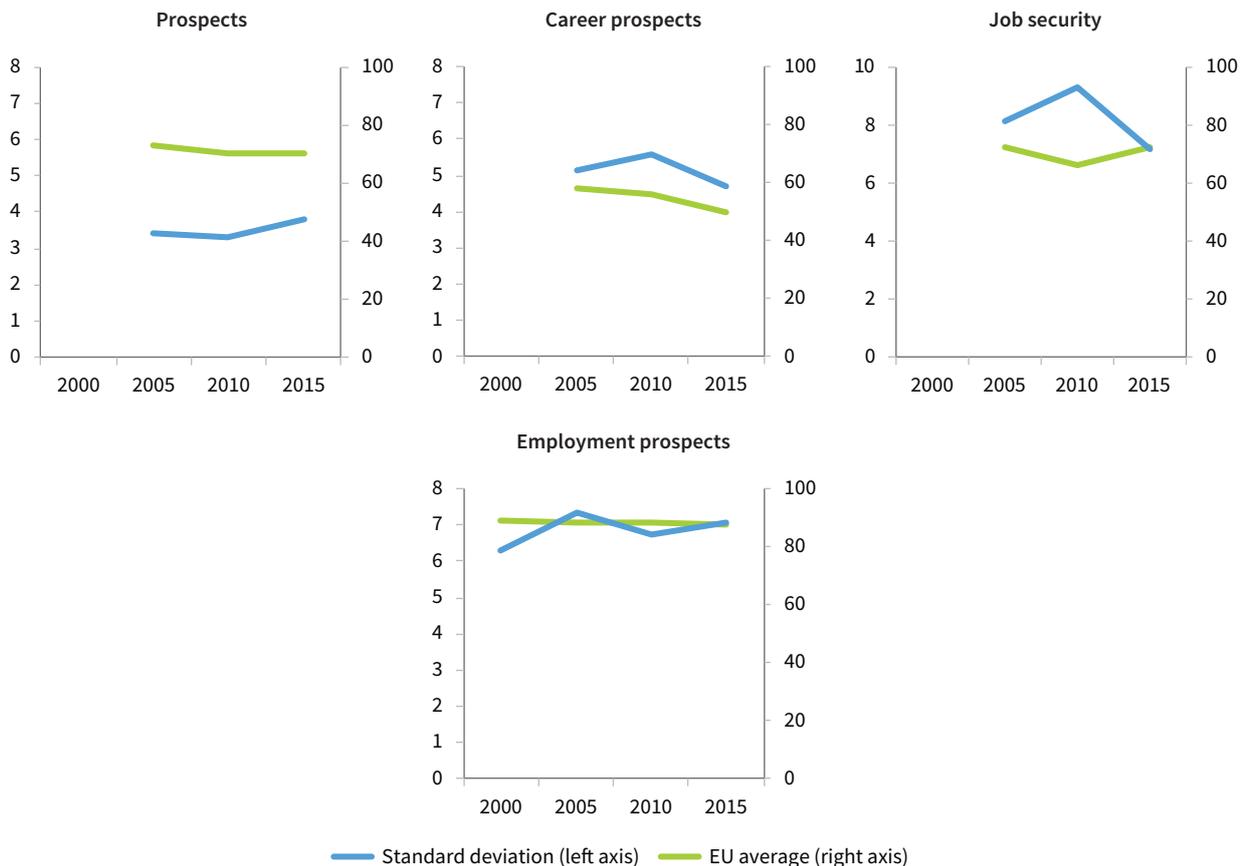


Figure 8: Working time quality – sigma-convergence patterns



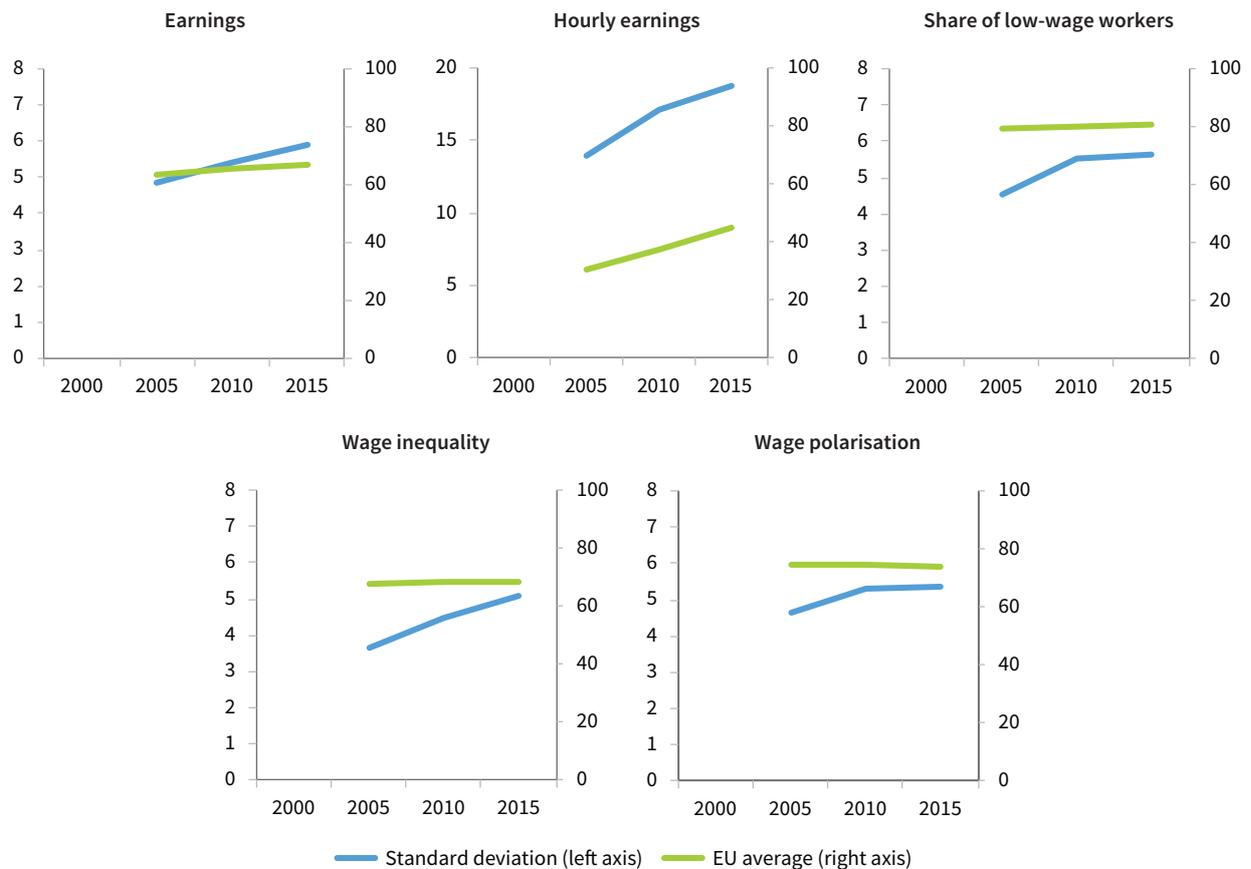
Note: Due to a lack of data for 2005, Prospects and Employment status do not include data for Malta.

Figure 9: Prospects – sigma-convergence patterns



24 Note: Due to a lack of data for 2005, Prospects and Employment status do not include data for Malta.

Figure 10: Earnings – sigma-convergence patterns



**Note:** Due to a lack of data for 2005, this analysis does not include data for Bulgaria, Croatia, Latvia, Malta or Romania.

Overall, the data presented in Figures 4–10 show how working conditions have been subject to very different dynamics. However, notwithstanding this diversity, there are shared patterns within dimensions.<sup>6</sup>

- All the subdimensions of Physical environment show similar trends: an improvement in the average and upward convergence in working conditions.
- Both subdimensions of Social environment show a U-shaped pattern of convergence, which may be related to changing economic conditions before and after the economic crisis.
- In contrast, the subdimensions of Work intensity show a much more mixed pattern, with Quantitative demands showing stability, both in the average and dispersion, while there is greater variability in the subdimension of Pace determinants and interdependency.
- The subdimensions of Skills and discretion show very little change in terms of average values, although the standard deviations follow a U-shaped pattern (or plain growth in the case of Decision latitude), which is, again, probably related to the different impact of the economic crisis in different Member States.

<sup>6</sup> Following the criteria applied in the previous section, all the information available is included when calculating sigma-convergence. As a result, the analyses for Physical environment, Working time quality and Prospects, and for the subdimensions of Pace determinants and interdependency, Duration, Atypical working time and Employment status, cover a longer time period than that used for the other dimensions and subdimensions. In aggregating subdimensions to obtain the corresponding dimension, the analysis has been limited to the periods with information for all the variables (2005–2015). This improves the relevance of the analysis while ensuring the necessary rigour in the construction of the dimensions. The overall change in the average value of each variable, used to define the type of convergence (upward or downward), is presented as a yearly average of the period in order to facilitate comparison between dimensions where the calculation is based on different time periods. When data for the longer time period exist, the evolution across the whole period and the evolution for the shorter 2005–2015 period are shown for comparison purposes.

- The subdimensions of Working time quality also show stability in terms of average values, in a context of convergence, and this pattern is most evident in the subdimension of Flexibility.
- The subdimensions of Prospects share an inverted U-shaped pattern in terms of dispersion. Again, this is most likely related to the different impact of the crisis on the labour markets of the different Member States, in a context of a deteriorating average. The strength of this pattern is related to the nature of the different indicators, with indicators of a more subjective nature showing a clearer trend, while the objective indicator (Employment status) shows a weaker trend.
- Finally, the subdimensions of Earnings show an increase in the dispersion of the values of the Member States in a context of roughly stagnant mean values in the case of the subdimensions related to wage distribution (Share of low-wage workers, Wage inequality and Wage polarisation), and growing mean values in the case of Hourly earnings.

## Measuring delta-convergence

To conclude the analysis of convergence in working conditions in the EU, this final section presents the results from an analysis of delta-convergence, as proposed by Heichel et al (2005).

Delta-convergence is defined as the sum of the differences in the value of a given variable (in this case, the dimensions or subdimensions of working conditions) for the countries of the sample (in this case, the EU Member States), and an optimal value is used as a benchmark for country comparison.

In this analysis, the benchmark is the best value in each of the dimensions and subdimensions over the years of the period analysed. Thus, each country is compared

with the best possible result in each dimension of working conditions, and the differences are summed. Delta-convergence can be said to exist if the sum of the differences decreases through time, while divergence exists if it increases.

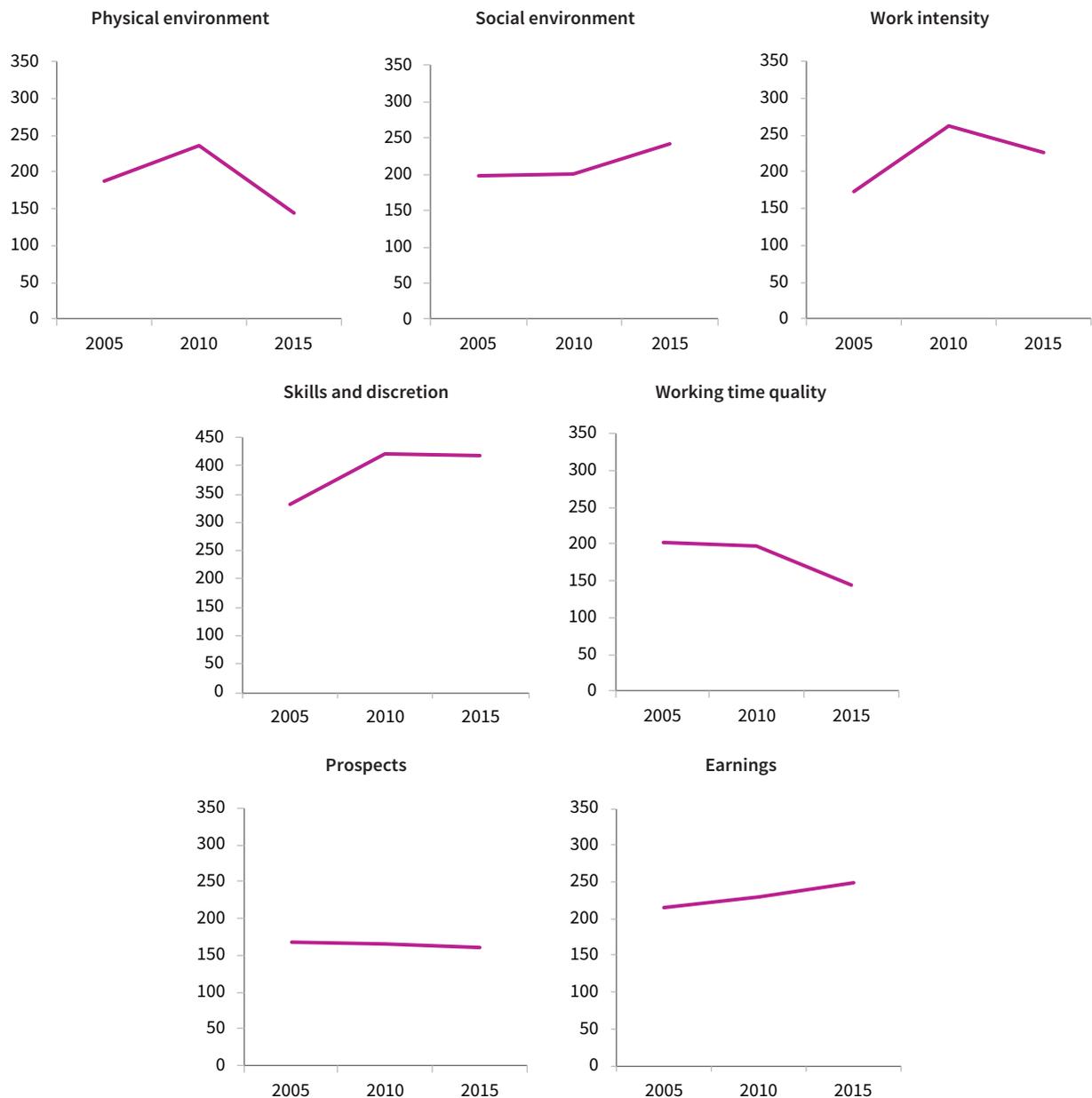
Figure 11 shows a variety of patterns across the seven dimensions of working conditions. The only clear example of delta-convergence is in the dimension of Working time quality, with an overall reduction of the delta value of 29% in the period. This dimension also shows the lowest absolute value of delta-convergence; in other words, not only is there convergence in each of the EU Member States in terms of working time quality, but the differences across them are lowest in this dimension.

Prospects also shows convergence, although less marked, with a reduction in delta of only 5%. The delta value falls for Physical environment, too, but this is not consistent across the whole period, with a decrease of 23% overall, but an increase in 2010. This dimension is closely linked to health and safety regulations, and the EU has a role in the area, so it is possible that EU regulatory action is behind this convergence.

Conversely, there is a clear pattern of delta-divergence in the dimension of Earnings, although the increase slows after the economic crisis. Skills and discretion shows an increase in delta in the first part of the period, then stability, or a slight reduction, in the second part. For Social environment, there is stability in the earlier period, followed by an increase later on.

The pattern for Work intensity is a flat, inverse U-shape with an increase in the delta value during the economic crisis, suggesting divergence of working conditions in this period, followed by a decrease in the value, indicating convergence.

Figure 11: Delta-convergence patterns in the dimensions of working conditions



**Note:** The charts show delta values for each of the dimensions.

Focusing on the subdimensions of Earnings (Figure 12), the two measures relating to inequality behave differently during the period: divergence in Wage inequality and convergence in Wage polarisation. In the case of Wage inequality, most of the increase (two-thirds) in delta occurs in the first part of the period (2005–2010) and is likely to be attributable to the economic crisis.

The subdimension of Share of low-wage workers shows an inverse U-pattern, with divergence in the first period and convergence afterwards, although the magnitude of the reduction is lower than the increase, leading to an overall pattern of divergence.

Finally, the trend in Hourly earnings has a U-pattern, like the subdimension Share of low-wage workers, but flatter, most likely related to the effect of the economic crisis.

Figure 12: Delta-convergence patterns in the subdimensions of Earnings



Note: The charts show delta values for each of the dimensions.

## Summary and conclusions

This chapter has sought to assess whether upward convergence has occurred in working conditions in the EU over the period 1995–2015, fulfilling one of the aims of the European Pillar of Social Rights. A caveat must be noted in using the analysis presented to answer this question. Convergence is a multidimensional concept and different aspects (the various dimensions and subdimensions of working conditions) follow different trends during the period analysed. Given this fact, a single aggregate yes or no, upward or downward response to the question must be treated with caution, concealing as it does a wide variety of outcomes across a range of measures and among different Member States.

Three different ways of measuring convergence were applied to assess change in working conditions in EU Member States – beta-, sigma- and delta-convergence. Each measure may produce different results because they estimate different aspects of convergence. For example, sigma-convergence measures dispersion; in other words, are the values for the dimensions and subdimensions of working conditions in the selected countries more or less dispersed at the end of the period than they are at the beginning? The level of dispersion is then taken to indicate whether there is

convergence in working conditions (upward convergence if there is a simultaneous improvement in average working conditions in all countries). Meanwhile, beta-convergence relates to the change in the variable of study in relation to its initial level; in other words, do countries with poorer initial working conditions experience faster rates of improvement compared to those countries with better initial working conditions? Beta-convergence is the main measure of convergence used in this study.

Overall, the analysis confirms the existence of beta-convergence in all the dimensions of working conditions considered. In six dimensions – Prospects is the exception – there is evidence of upward beta-convergence. However, it is not evident in all Member States, as not all showed improvements in their working conditions in all dimensions during the study period. Consequently, the convergence identified is classified as weak upward convergence. For Prospects, there was weak downward convergence in the EU. This result is consistent with the perception that there has been an overall deterioration of workers’ prospects in relation to career advancement and job security, demonstrated by, among other things, an increase in the rate of temporary employment (from 11.5% in 1995 to 14.2% in 2015 in the EU15). It is the case, though, that most of the countries failing to improve working

conditions in the different dimensions show stagnation or very small decreases, rather than major declines.

At the subdimension level, there is again a general trend of upward convergence (in two-thirds of the subdimensions), but there is a relatively high level of variance across them.

Consideration of sigma-convergence provides a more nuanced picture, as only three of the seven dimensions show upward convergence: Physical environment, Social environment and Working time quality. There is upward divergence (overall improvement of the EU average but increasing dispersion) in Work intensity, Skills and discretion, and Earnings, and downward divergence (overall deterioration of the EU average and increasing dispersion) in the Prospects dimension.

This difference in findings between the beta and sigma measures is unsurprising, as they measure different aspects of convergence. Furthermore, for methodological reasons, the analysis of sigma-convergence is restricted to a shorter time period that partly coincides with the Great Recession. As the crisis had a very different impact (in terms of both depth and duration) in the different Member States, it is likely that this has affected the sigma-convergence measure more strongly than the beta-convergence measure.

Analysis relating to convergence clubs shows that regardless of whether the countries are grouped by centre-periphery or EU15-EU13 categorisations, there are no major differences in the dynamics of convergence between the different groups or in comparison to the EU as a whole.

The third approach, delta-convergence analysis, reveals a wide variety of patterns. The only clear example of delta-convergence is in Working time quality. This dimension also shows the lowest absolute delta value, meaning the differences among the EU Member States are lowest on this dimension. Conversely, a clear pattern of delta-divergence is apparent in Earnings, although the increase in divergence slows after the economic crisis.

The overall picture of upward convergence in working conditions among Member States – with some setbacks – is not matched by a corresponding universal improvement in job quality, as many Member States have not improved in many of the subdimensions of working conditions. The conclusion, therefore, must be that there has been ‘unequal’ convergence in working conditions over two decades.



# 3 Convergence in working conditions of women and men

This chapter assesses the findings on convergence in working conditions from a gender perspective. In doing this, it moves beyond the standard analysis of gender gaps in wages to include other dimensions of working conditions. The aim is to establish whether the working conditions of men and women were more alike in 2015 than they were in 2005.

## Estimating gender gaps in working conditions

This investigation begins with evidence on the estimated gender gaps in the dimensions and subdimensions of working conditions at EU level, to test whether there are significant differences between women and men. A gender gap is defined as the absolute difference in the indices of men and women in a given dimension or subdimension with respect to the highest value (whether this is the value for men or women). This means that the gap will always present values of less than 100. In the case of Earnings, the indicator used is the official measure of the gender gap used by Eurostat.

### Gaps at EU level

Table 8 shows the gender gaps in the 7 dimensions and 21 subdimensions of working conditions at EU level. A higher value for men or women is indicated by an M or W, respectively, in the third column.

There is some variance in terms of who enjoys better working conditions across the different dimensions. Men experience better working conditions in three dimensions (Social environment, Skills and discretion, and Earnings), although in the case of Social environment the gap is very small (0.6%). Women have better results in the remaining dimensions: Physical environment, Work intensity, Working time quality and Prospects. In the latter two dimensions, the difference is again quite small, with a gap of 1.5% in each case.

The most obvious patterns in the subdimensions are the relatively large gap in favour of women for Ambient risks (and the slightly smaller gap for Biological and chemical risks) and the large gaps favouring men in Hourly earnings and Share of low-wage workers. Wage inequality is lower for women than men, with a gap of 0.8% in this subdimension.

**Table 8: Gender gaps in working conditions, EU, 2006**

Dimension or subdimension	Gap (%)	Higher value for men (M) or women (W)?
<b>Physical environment</b>	7.9	W
Ambient risks	12.2	W
Biological and chemical risks	6.1	W
Posture-related risks	4.8	W
<b>Social environment</b>	0.6	M
Adverse social behaviour	1.2	M
Social support	0.3	W
<b>Work intensity</b>	5.8	W
Quantitative demands	4.4	W
Pace determinants and interdependency	6.6	W
<b>Skills and discretion</b>	10.0	M
Cognitive discretion	0.2	M
Decision latitude	0.2	M
Training	3.9	M
<b>Working time quality</b>	1.5	W
Duration	4.0	W
Atypical working time	3.6	W
Working time arrangements	8.2	M
Flexibility	5.1	W
<b>Prospects</b>	1.5	W
Career prospects	6.7	W
Job security	1.1	W
Employment status	2.1	M
<b>Earnings</b>	5.7	M
Hourly earnings	16.8	M
Share of low-wage workers	10.9	M
Wage inequality	0.8	W
Wage polarisation	0.5	M

**Notes:** Gap (%) = percentage difference between the group with better working conditions in a given indicator compared to the other group. M identifies where gaps favour men while W identifies where gaps favour women.

A report by Eurofound (2018c) addressing the working conditions of women in management compared with those of their male counterparts arrived at similar conclusions regarding Earnings, Skills and discretion, and Physical environment, with no discernible difference in Prospects and Social environment. The results for Work intensity varied depending on the nature of the supervisory work, as female supervisors and supervising managers report greater work intensity than their male counterparts, while female non-supervising managers report less work intensity.

### Gaps at Member State level

Table 9 shows the gender gaps in each of the seven dimensions of working conditions for the EU Member States. There are several findings worth noting from the analysis. Overall, the gender favoured in each of the different dimensions is quite consistent among the Member States. The two clearest examples of this

consistency are the dimensions of Physical environment, where women enjoy better working conditions across all the Member States, and Earnings (the traditional domain of gender gap analysis), where the gap favours women only in Bulgaria.

In the remaining dimensions, there is some variance within the overall picture of consistency. For Work intensity, the gap favours women in all countries except Denmark, Finland, Romania and Slovakia, while in Skills and discretion, men experience better conditions in all countries except Denmark, Hungary, Italy, Lithuania and Malta.

Working time quality and Prospects show preferable conditions for women, though not overwhelmingly so. In the case of Working time quality, 21 countries have gaps favouring women, while for Prospects it's 22. In the case of Social environment, the gender gap favours men in 16 Member States.

**Table 9: Gender gaps in working conditions dimensions, by Member State, 2015**

	Austria		Belgium		Bulgaria		Cyprus		Croatia		Czechia	
Physical environment	7.8	W	5.3	W	9.6	W	11.5	W	8.0	W	8.4	W
Social environment	1.0	M	3.2	M	0.1	M	0.5	W	1.5	W	1.2	M
Work intensity	11.8	W	8.7	W	8.7	W	5.3	W	2.5	W	12.5	W
Skills and discretion	4.3	M	0.6	M	2.7	M	1.8	M	1.3	M	3.3	M
Working time quality	3.7	W	3.3	W	1.3	M	3.4	W	2.6	W	2.8	W
Prospects	3.6	W	4.5	W	1.2	W	4.8	M	3.3	W	0.4	W
Earnings	10.9	M	5.6	M	2.3	W	10.5	M	5.5	M	9.4	M
	Denmark		Estonia		Germany		Greece		Finland		France	
Physical environment	1.9	W	7.3	W	7.0	W	9.9	W	5.1	W	9.1	W
Social environment	1.0	M	2.8	W	0.2	W	2.2	M	4.1	M	1.7	M
Work intensity	1.5	M	5.5	W	8.6	W	3.4	W	0.3	M	9.2	W
Skills and discretion	0.2	W	0.7	M	2.4	M	14.0	M	3.8	M	3.1	M
Working time quality	2.4	W	1.2	W	2.0	W	0.8	W	2.6	M	0.5	M
Prospects	3.5	M	4.5	W	1.7	W	0.5	M	0.1	W	3.7	W
Earnings	2.8	M	5.8	M	10.3	M	0.0		1.3	M	4.6	M
	Hungary		Ireland		Italy		Latvia		Lithuania		Luxembourg	
Physical environment	8.2	W	5.9	W	7.2	W	8.8	W	11.3	W	3.4	W
Social environment	1.2	M	1.8	W	1.2	W	0.2	M	0.6	M	4.9	M
Work intensity	6.9	W	2.6	W	3.3	W	5.5	W	7.7	W	6.8	W
Skills and discretion	3.9	W	9.7	M	0.6	W	1.9	M	2.7	W	2.8	M
Working time quality	2.3	W	2.0	W	0.4	M	0.5	M	0.9	M	0.3	W
Prospects	1.5	M	2.4	W	1.6	W	3.4	W	0.0		4.7	W
Earnings	0.7	M	4.3	M	2.4	M	5.8	M	3.3	M	7.8	M

	Malta		Netherlands		Poland		Portugal		Romania		Slovakia	
Physical environment	6.5	W	4.0	W	13.6	W	3.5	W	4.2	W	7.0	W
Social environment	2.3	W	0.4	M	1.4	W	0.0	W	0.5	W	1.9	M
Work intensity	2.2	W	3.6	W	7.5	W	7.0	W	1.4	M	1.1	M
Skills and discretion	0.2	W	2.0	M	0.7	M	5.1	M	3.9	M	4.3	M
Working time quality	3.3	W	2.6	W	2.7	W	0.9	M	0.3	W	1.6	W
Prospects	1.4	W	0.8	W	0.7	M	2.2	W	3.0	W	2.1	W
Earnings	3.0	M	3.9	M	2.8	M	3.3	M	2.9	M	4.5	M
	Slovenia		Spain		Sweden		UK					
Physical environment	6.9	W	8.1	W	5.2	W	7.8	W				
Social environment	1.4	M	0.2	W	2.1	M	1.2	W				
Work intensity	1.8	W	5.8	W	2.7	W	0.6	W				
Skills and discretion	1.7	M	4.9	M	2.9	M	0.6	M				
Working time quality	1.2	W	0.1	W	0.5	W	3.6	W				
Prospects	1.5	W	2.7	W	4.1	W	0.1	M				
Earnings	3.7	M	6.0	M	6.9	M	8.4	M				

Notes: Gap (%) = percentage difference between the group with better working conditions in a given indicator compared to the other group. M identifies where gaps favour men while W identifies where gaps favour women.

## Beta-convergence in gender gaps

Now the analysis moves to examining the extent to which there has been convergence in working conditions gender gaps in the period 2005–2015. As before, we are interested in seeing whether these gaps in the EU Member States are more alike now than in the past, or, alternatively, whether the difference in gender gaps among these countries is growing.

Beta-convergence is used to estimate the relationship – the beta coefficient – between the level of the gender gap in the base year and the evolution of the gap during the period of analysis. As before, a negative value of the beta coefficient is interpreted as a convergence in the gender gap of the dimension or subdimension considered. Strict upward convergence occurs when there is convergence of gender gaps in the context of a decreasing gender gap at the EU level and in all Member States. If no decrease is recorded in one or more Member States, the convergence is considered weak. It is important to note that this analysis focuses on the gap itself: in terms of elimination of gender differences, a smaller gap is better than a bigger gap, and the ideal situation would be no gap.<sup>7</sup>

As Table 10 shows, the period 2005–2015 saw convergence of Member States in the gender gap across all the dimensions of working conditions.

In two dimensions, Physical environment and Prospects, there is downward convergence (reducing disparity between Member States in a context of growing average value of the dimension). This means, for example, that the gender gap in Prospects has become more similar across the EU, but it is larger at the end of the period than in the starting year. In the case of Physical environment, Table 10 shows a reduction in the gender gap in 18 countries, while a reduction for Prospects occurred in 10. In both dimensions, the gap favours women.

The remainder of the dimensions show upward convergence (reducing disparity between Member States in the context of a reduction of the gap). There were no cases of strict upward convergence, as between 4 and 10 countries present growing gender gaps (depending on the dimension). In terms of the speed of upward convergence, Social environment, Working time quality and Skills and discretion are the fastest, while Earnings and Work intensity are the slowest.

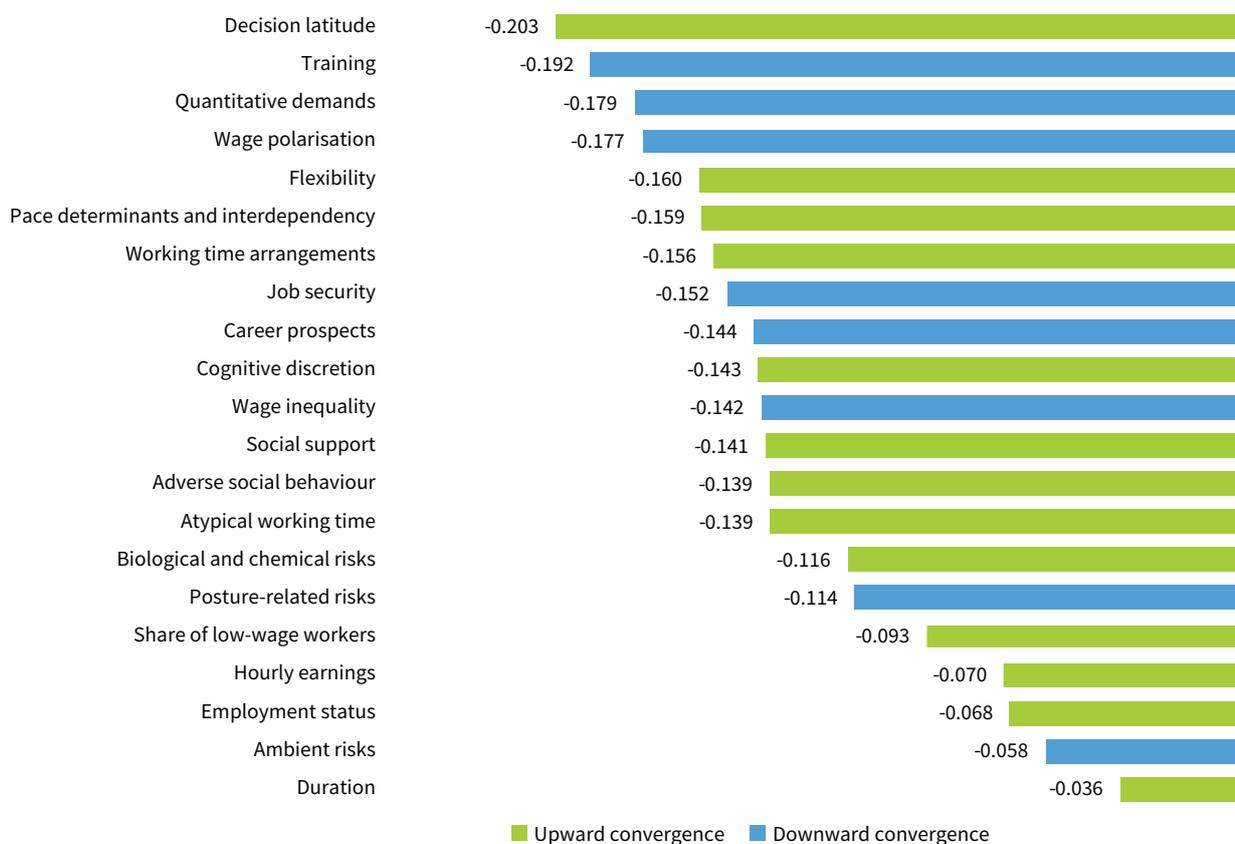
<sup>7</sup> At this stage, the analysis does not include the dynamics behind the reduction of the gender gap – whether this represents an improvement for the gender with worse working conditions or deterioration for the gender with better working conditions.

**Table 10: Beta-convergence in gender gaps in the dimensions of working conditions, EU, 2005–2015**

	Beta	Characterisation	Countries behind the weak convergence	N
Physical environment	-0.0753	Weak downward convergence	Austria, Belgium, Croatia, Cyprus, Estonia, Finland, France, Greece, Hungary, Ireland, Latvia, Lithuania, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden	18
Social environment	-0.2301	Weak upward convergence	Belgium, Cyprus, Czechia, Denmark, Estonia, Greece, Ireland, Lithuania, Poland, Slovenia	10
Work intensity	-0.0633	Weak upward convergence	Austria, Belgium, Bulgaria, Czechia, France, Lithuania, Malta, Poland	8
Skills and discretion	-0.1374	Weak upward convergence	Finland, Greece, Ireland, Sweden	4
Working time quality	-0.1563	Weak upward convergence	Austria, Belgium, Bulgaria, Croatia, Cyprus, Czechia, Ireland, Lithuania, Netherlands	9
Prospects	-0.1756	Weak downward convergence	Bulgaria, Czechia, Finland, Greece, Latvia, Lithuania, Netherlands, Poland, Sweden, UK	10
Earnings	-0.0755	Weak upward convergence	Austria, Belgium, Croatia, Czechia, France, Germany, Italy, Malta, Romania	9

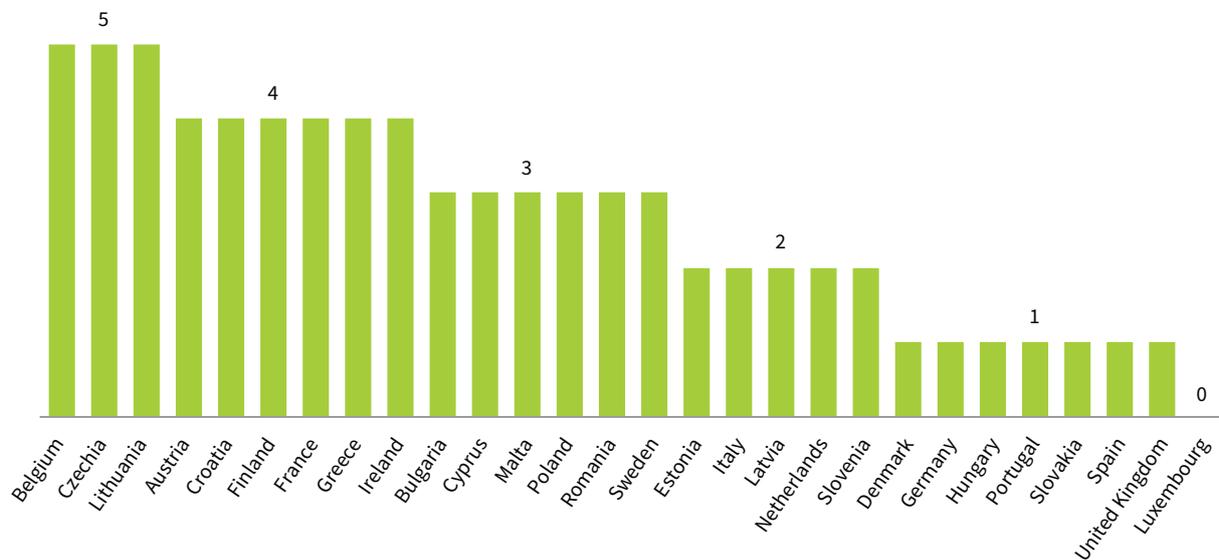
Figure 13 shows beta-convergence in gender gaps for the subdimensions of working conditions. At this level,

too, upward convergence (though weak) is more common than downward convergence.

**Figure 13: Beta-convergence in gender gaps in subdimensions of working conditions, EU, 2005–2015**

**Notes:** The chart shows beta coefficients for gender gaps in subdimensions of working conditions. A negative value signifies convergence. The absolute values relate to the speed of convergence, with higher absolute values meaning faster convergence.

**Figure 14: Number of dimensions of working conditions showing no improvement in gender gap, by Member State, 2005–2015**



Source: Based on Table 9

In summary, over 2005–2015 there was convergence across the EU in the gender gaps in working conditions in all dimensions. In most dimensions, this took place in the context of a reduction in the gender gap, but for Physical environment and Prospects, the gender gap increased. The pattern of convergence was weak for all dimensions, as they were not evident in all Member States.

Figure 14 shows the Member States ordered according to the number of dimensions in which they fail to show a reduction in the working conditions gender gaps. The analysis found that Member States are more alike regarding gender gaps in working conditions in 2015 than in 2005 and that, in general terms, such gaps are lower now than in the past. Unfortunately, this process of convergence is far from universal, with the majority of countries failing to reduce gender gaps in more than one working condition.

## Sigma-convergence in gender gaps

Turning to the alternative way of looking at convergence – dispersion of countries regarding gender gaps in working conditions – Table 11 shows the evolution of the standard deviation, or sigma-convergence. This is measured by the difference between the standard deviations of the gender gaps across the different dimensions and subdimensions of working conditions in the first and last year of the study period. Figure 15 shows the trend of the standard deviation and the average of the gender gap in the seven dimensions of working conditions.

The analysis shows that the gender gap improves across all dimensions except Prospects (where it shows a small increase) and Earnings (where it follows an inverted U pattern). The dispersion of gender gaps among the Member States shows more variety. Convergence is evident in Physical environment and Social environment, while there is divergence in Work intensity and Earnings, stagnation in Working time quality and a mixed picture in the remaining dimensions; for example, both divergence and convergence are evident in Skills and discretion.

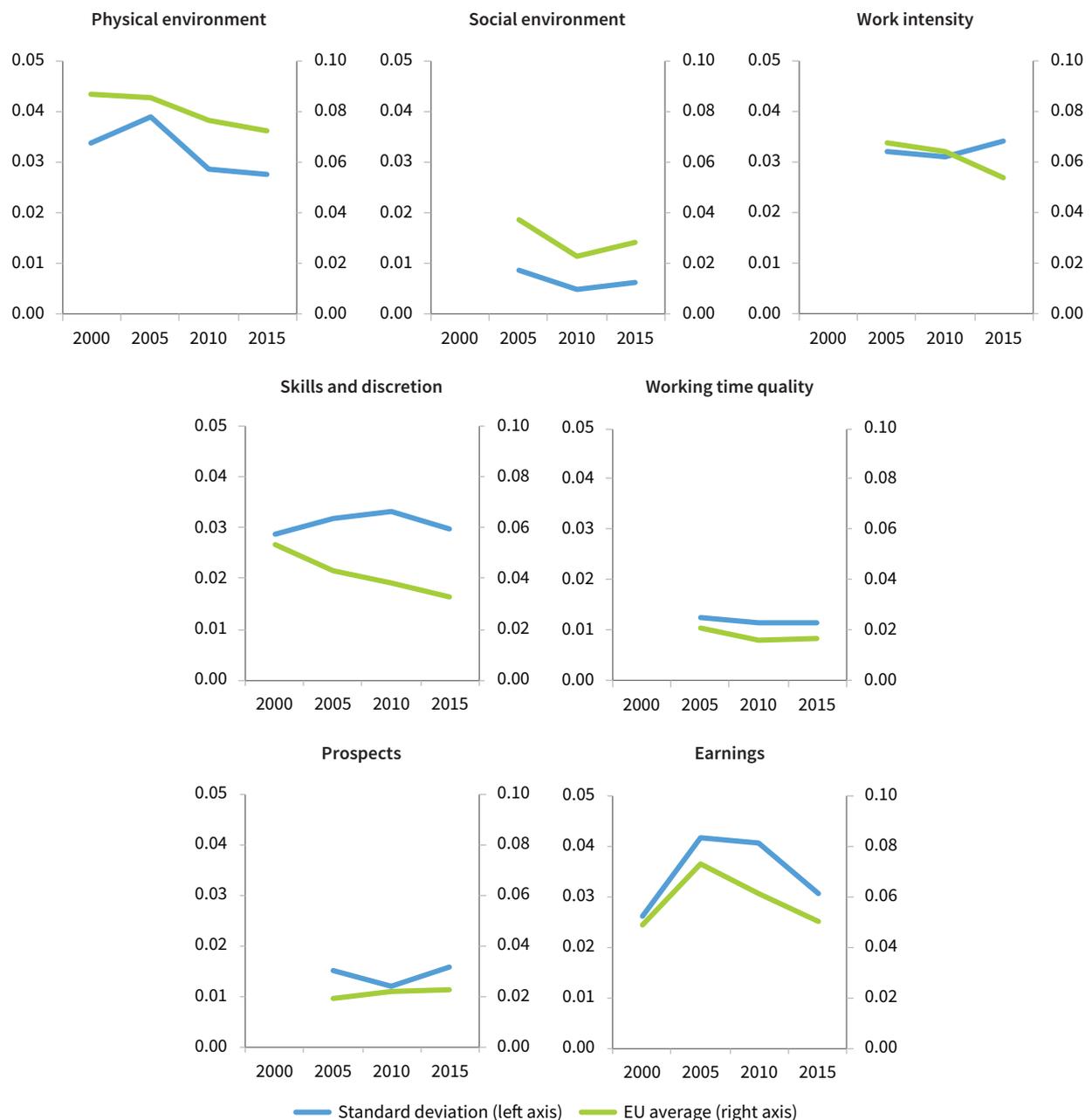
**Table 11: Sigma-convergence patterns in gender gaps in the dimensions and subdimensions of working conditions**

	Period	Difference in standard deviation	Characterisation	Countries behind the weak convergence and divergence
<b>Physical environment</b>	2000–2015	-0.006	Weak upward convergence	Bulgaria, Czechia, Denmark, Italy, Lithuania, Netherlands, Poland
Ambient risks	2000–2015	0.003	Weak downward divergence	Austria, Belgium, Cyprus, Denmark, Greece, Finland, Hungary, Ireland, Luxembourg, Netherlands, Portugal, Romania, Slovenia, UK
Biological and chemical risks	2000–2015	-0.014	Weak upward convergence	Denmark, Lithuania
Posture-related risks	2000–2015	0.001	Weak downward divergence	Belgium, Bulgaria, Czechia, Estonia, Hungary, Italy, Lithuania, Latvia, Poland, Slovakia, Slovenia, UK
<b>Social environment</b>	2005–2015	-0.005	Weak upward convergence	Belgium, Cyprus, Czechia, Denmark, Estonia, Greece, Ireland, Lithuania, Poland, Slovenia
Adverse social behaviour	2005–2015	-0.007	Weak upward convergence	Austria, Denmark, France, Hungary, Netherlands, Romania, UK
Social support	2005–2015	-0.008	Weak upward convergence	Belgium, Cyprus, Czechia, Denmark, Estonia, Greece, Spain, Ireland, Netherlands, Poland, Sweden, Slovakia, UK
<b>Work intensity</b>	2005–2015	0.002	Weak upward divergence	Austria, Belgium, Bulgaria, Czechia, France, Lithuania, Poland
Quantitative demands	2005–2015	-0.015	Weak upward convergence	Austria, Belgium, Bulgaria, Estonia, Greece, Finland, Lithuania, Netherlands, Romania, Slovakia
Pace determinants and interdependency	2000–2015	0.010	Weak downward divergence	Denmark, Greece, Spain, Finland, Italy, Luxembourg, Latvia, Poland, Portugal, Romania, Sweden, Slovakia, Slovenia, UK
<b>Skills and discretion</b>	2000–2015	0.001	Weak upward divergence	Greece, Spain, Ireland, Luxembourg, Sweden
Cognitive discretion	2000–2015	-0.009	Weak upward convergence	Austria, Belgium, Greece, Lithuania, Luxembourg, Poland
Decision latitude	2000–2015	0.004	Weak upward divergence	Austria, Belgium, Cyprus, Germany, Greece, Finland, Hungary, Ireland, Italy, Latvia, Slovakia, UK
Training	2000–2015	-0.006	Weak downward convergence	Austria, Belgium, Czechia, France, Ireland, Italy, Netherlands, Portugal, Romania, Sweden
<b>Working time quality</b>	2005–2015	-0.001	Weak upward convergence	Austria, Belgium, Bulgaria, Cyprus, Czechia, Ireland, Lithuania, Latvia, Netherlands, Sweden
Duration	2005–2015	-0.002	Weak upward convergence	Austria, Belgium, Luxembourg, Poland
Atypical working time	2000–2015	-0.009	Weak upward convergence	Belgium, Cyprus, Germany, Denmark, Finland, Ireland, Italy, Luxembourg, Latvia, Slovakia
Working time arrangements	2000–2015	-0.008	Weak upward convergence	Bulgaria, Germany, Greece, Spain, Finland, France, Ireland, Italy, Lithuania, Portugal, Sweden, Slovenia
Flexibility	2000–2015	-0.005	Weak upward convergence	Austria, Estonia, Hungary, Italy, Lithuania, Sweden, Slovenia
<b>Prospects</b>	2005–2015	0.001	Weak downward divergence	Bulgaria, Czechia, Greece, Finland, Hungary, Lithuania, Latvia, Netherlands, Poland, Sweden, UK
Career prospects	2005–2015	0.006	Weak downward divergence	Bulgaria, Cyprus, Denmark, Estonia, Greece, Italy, Netherlands, Poland, Sweden, Slovenia
Job security	2000–2015	0.002	Weak downward divergence	Austria, Bulgaria, Germany, Spain, Finland, Hungary, Italy, Portugal, Romania, Sweden, Slovakia, Slovenia
Employment status	2005–2015	0.000	Weak upward divergence	Cyprus, Czechia, Estonia, Romania, Slovakia, Slovenia

	Period	Difference in standard deviation	Characterisation	Countries behind the weak convergence and divergence
Earnings	2005–2015	0.005	Weak downward divergence	Austria, Belgium, Czechia, Finland, France, Sweden
Hourly earnings	2005–2015	-0.016	Weak upward convergence	Austria, Denmark, France, Poland, Portugal, Slovakia, Slovenia
Share of low-wage workers	2005–2015	-0.023	Weak upward convergence	Austria, Belgium, France, Hungary, Sweden
Wage inequality	2005–2015	-0.001	Weak upward convergence	Denmark, France, Ireland, Lithuania, Luxembourg, Netherlands, Poland, Sweden, Slovenia, UK
Wage polarisation	2005–2015	-0.009	Weak upward convergence	Austria, Belgium, Czechia, Denmark, France, Hungary, Ireland, Luxembourg, Poland, Sweden

Note: Bulgaria, Latvia and Romania are excluded from Earnings analysis due to lack of data.

Figure 15: Sigma-convergence patterns in gender gaps of dimensions of working conditions



Note: Working time quality and Prospects do not include Malta due to lack of data for 2005. Bulgaria, Latvia and Romania are excluded from Earnings due to lack of data.

## Summary

The analysis in this chapter found differences in working conditions between men and women across the seven dimensions. Women are found to fare better in the dimensions of Physical environment and Work intensity, while men enjoy better conditions in terms of Earnings and Social environment. Beta-convergence analysis provided evidence of upward convergence in the

working conditions gender gaps – towards more similar working conditions between men and women – in all the dimensions with the exceptions of Physical environment and Prospects, where the trend has been downward convergence. Downward convergence implies a widening of the gap – which in both dimensions favours women although the gap for Prospects is small – alongside increasing similarity of Member States on these measures.

# 4 Drivers of upward convergence in working conditions

There are two key questions concerning the drivers of convergence in working conditions.

- Should convergence of working conditions between Member States be expected?
- If yes, what are the factors or drivers behind such convergence?

This chapter begins by presenting some initial observations about the factors potentially underlying the dynamics of convergence and divergence and their categorisation as upward or downward, weak or strict. Having identified various factors that could affect convergence in working conditions, the chapter goes on to outline the data sources and methodology employed to analyse the whether these factors do in fact play a role.

## Potential drivers

Seven potential drivers of convergence in working conditions stand out in the academic and policy literature:

- economic convergence
- structural change
- labour market institutions and regulations
- welfare policies
- technology and technological change
- globalisation
- immigration

### Economic convergence

According to neoclassical theory of economic growth, there is a natural tendency of countries to converge in terms of GDP per capita, driven by convergence in productivity (Barro and Sala-i-Martin, 2003). It can be argued that such convergence in GDP per capita will lead ultimately to convergence in working conditions because of the relationship between some of the dimensions of working conditions, such as Earnings and Working time quality, and productivity.

The relationship between productivity and working conditions cannot be taken for granted, mediated as it is by labour market institutions that affect the distribution of total output between labour costs

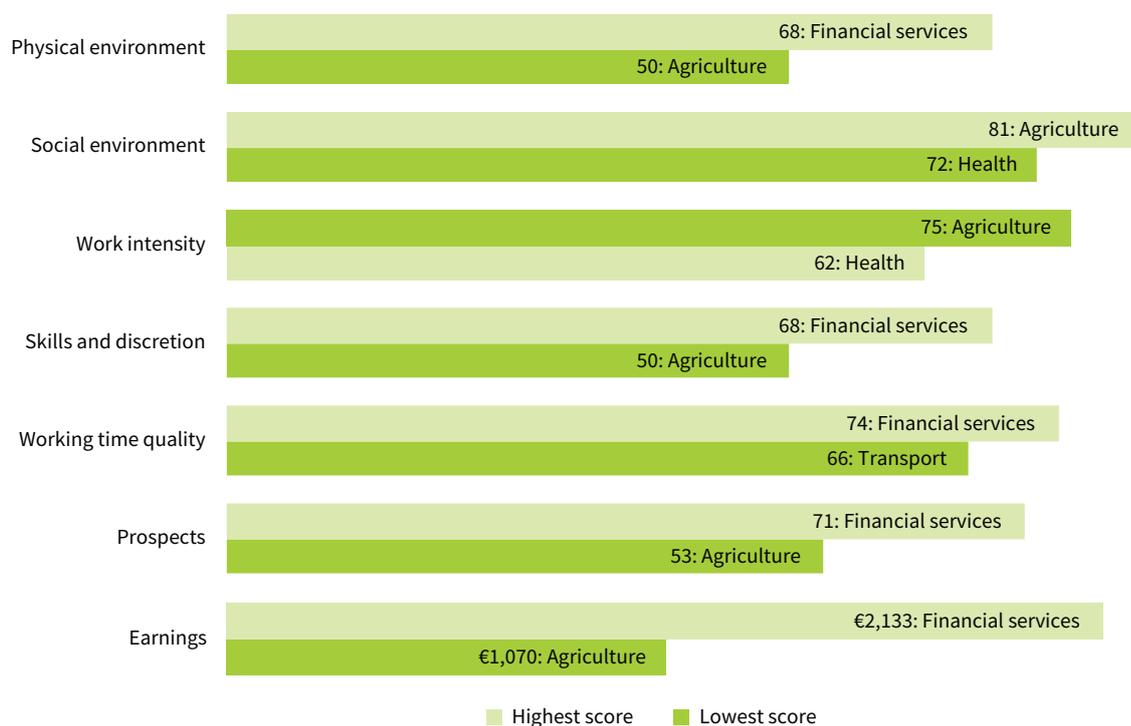
(understood broadly as total wages, including working conditions, and profits). Nevertheless, it is possible to hypothesise that income convergence will lead to convergence in working conditions. More specifically, economic convergence should lead to upward convergence in working conditions. This result would be explained by the higher growth in productivity of low-income countries with poor working conditions compared to high-income countries with good working conditions, and the role played by productivity in any improvement. In turn, the circumstance of strict upward convergence would be explained by the fact that productivity grows in all countries (and so, consequently, do improvements in working conditions).

### Structural change

Structural change means change in the relative importance of different sectors of the economy, which is associated with economic growth in the long term. In the canonical model of structural change, economic growth accompanies a reduction of the contribution of agriculture to GDP and an increase of the contribution of the industrial sector in the first phase and services in the second phase. Services then become the dominant sector of the economy, in terms of both employment and share of GDP.

Working conditions vary among different sectors of activity owing to the different characteristics of their production processes and to differences in their productivity. For example, in Figure 16, developed using EWCS 2015 data, differences can be seen in the mean scores of the seven dimensions of job quality for the EU (Eurofound, 2017b).

If the process of economic development translates into convergence in economic structure, the mere growth of the less-developed countries would drive convergence in working conditions. At the same time, if sectors with poorer working conditions are more important in less-developed countries, again, the process of growth would lead, through structural change, to an improvement of working conditions. This would arise from a reduction in the spheres of activity with poorer working conditions, such as agriculture, and an increase in the share of total output of activities, with better working conditions, such as financial services.

**Figure 16: Highest and lowest mean scores in the dimensions of working conditions, by economic sector, EU, 2015**

**Notes:** Higher values mean better working conditions, except for Work intensity, which is inversely related to job quality so that greater work intensity implies poorer working conditions. This is indicated by the switched shading in the bar. The first six dimensions are measured on a scale of 0–100, and Earnings is measured by purchasing power parity (PPP) in euro.

**Source:** Authors' analysis based on Eurofound, 2017b, p. 39

This hypothesis of convergence in working conditions through structural change must be measured against a possible different outcome that could occur in a closely knit economic space such as the EU. If countries in the EU specialise in a given economic sector, as regions often do within national economies, the creation of a single market could lead to country specialisation. This dynamic would work against the process of convergence in working conditions previously mentioned. Moreover, both processes could be present in the EU simultaneously but affect different countries. That is the conclusion reached by Mongelli et al (2016) from their study of specialisation in the euro zone (EA12 referring to the 12 countries in the euro zone):

*One group of countries became more specialised compared to EA12, e.g. Austria, Belgium, Germany and Portugal, while another group, which consists of Finland, the Netherlands, Luxembourg, Ireland, Italy, Greece and Spain, is gradually moving towards EA12's structure.*

(p. 31)

Therefore, it is possible that some countries have increasingly different economic structures, while others are increasingly similar in this respect.

### Labour market institutions and regulations

As noted almost three decades ago by the Nobel Laureate in Economics Robert Solow (1990), labour markets are social institutions, where customs and regulations interact with the workings of supply and demand. In every labour market, there is a myriad of regulations and institutions that affect terms of employment and working conditions, from minimum wages to collective bargaining, from health and safety regulations to rules regarding work–life balance or, more recently, the 'right to disconnect'.

If labour institutions have an impact on labour market outcomes, they could be one of the drivers of convergence in working conditions, especially if there is a process of convergence in labour regulations between countries.<sup>8</sup> Within the EU, the open method of coordination (OMC), created in the 1990s as part of

<sup>8</sup> Davies and Vadamannati (2013) find that there has been a process of convergence in labour standards, particularly a 'race to the bottom', quite similar to the concept of downward convergence.

employment policy, is an instrument that could contribute to this process of convergence in labour regulation and policies among Member States (Heidenreich and Zeitlin, 2009), acting as a driver of convergence in working conditions. The directives on labour issues – such as the Working Time Directive (2003/88/EC), the Directive on Temporary Agency Work (2008/104/EC) and the Council Directive 97/81/EC concerning the Framework Agreement on part-time work concluded by UNICE, CEEP and the ETUC – would have the same, if not a more direct, impact on (upward) convergence in working conditions.

## Welfare policies

Working conditions can be affected by social policy in three different ways. First, by offering income protection to unemployed workers and the population in general, the welfare state might empower workers in relation to employers – by, for example, a reduction in the opportunity cost of unemployment – with a potential positive impact on working conditions.

Second, the welfare state, and the public sector in general, is also an important source of employment. It accounts for an average of 18% of total employment in OECD countries, with as much as 29% in Denmark (OECD, 2017), and has the competency and power to set its own working conditions for public employees. In this regard, public sector employees often have better working conditions in dimensions such as Prospects or Working time quality, although not necessarily in Earnings, at least across the whole distribution of earnings (Eurofound, 2013). In its role of setting working conditions for a sizeable part of total employment, the public sector can also influence working conditions in the private sector through a kind of ‘lighthouse effect’ as improvements in working conditions granted to public employees are often subsequently extended to employees in the private sector.<sup>9</sup>

Finally, the welfare state regulates areas such as work–life balance, with direct implications for working conditions. Thus, convergence in welfare regimes would lead to convergence in working conditions. Again, such convergence would be upward convergence if the countries with less-developed welfare states follow the path of countries, such as Austria, Denmark, France and Sweden, that have more-developed welfare states. Alternatively, where there is a race to the bottom, fuelled by the presence of ‘social dumping’, the process of convergence could follow a pattern of downward convergence. Here again, the OMC and direct legislative action by the EU could be sources of convergence in this area.

## Technology and technological change

Technology affects working conditions by determining what people do in their jobs and how they do it, and by facilitating control over workers and the functional distribution of income (income shares). If countries follow different paths of technological change, divergence in working conditions would be expected to occur. Conversely, as Kerr et al (1960) noted over half a century ago, the adoption of similar technologies might lead to a process of homogenisation and convergence of working conditions. Furthermore, technological change should lead to an increase in productivity, which has been linked to better working conditions. Technological change, and the process of creative destruction it often unleashes, may also affect the composition of employment if the jobs displaced and created are in different parts of the employment structure. One of the most pressing debates regarding the employment implications of technological change is precisely whether it promotes job polarisation, resulting from the concentration of job destruction in the middle part of the distribution of jobs in terms of wages and working conditions, or whether there is a positive relationship between technological change and employment creation in the upper part of the jobs distribution, leading to a process of upgrading.

For the purposes of this report, the important issue is not whether there is more empirical support for one or other hypothesis. Rather, the question is whether the process is similar across countries (Goos et al, 2009), or whether different countries experience different patterns of technologically driven employment creation and destruction (Eurofound, 2015a, 2015b). In the former case, all other things being equal, such a process would lead to convergence in working conditions. In the latter case, technology could contribute to growing divergence in working conditions.

## Globalisation

Globalisation is another phenomenon that leaves its imprint on all socioeconomic issues and, consequently, is a possible driver of convergence in working conditions. Globalisation and the development of global value chains has led to a worldwide reallocation of production processes. As different parts of the production process relate to different tasks, globalisation might affect working conditions, depending on the balance between the tasks and working conditions of the outsourced jobs and the jobs remaining at home. Globalisation also affects power relations between workers (or trade unions) and

<sup>9</sup> For a comparative analysis of the two-way relationship between private and public wage-setting, see Lamo et al (2012). According to the authors, overall the private sector seems to have a stronger influence on the public sector than vice versa. However, they also find evidence of feedback effects in the opposite direction, from public wage-setting to private sector wages, in several countries.

companies (or employer associations), due to the greater mobility of capital compared with labour, with potential implications for working conditions.

In terms of convergence, globalisation could be a force for convergence if, as argued by the Stolper-Samuelson theorem, countries with poorer working conditions improve their penetration into high-income markets, leading to faster growth and better working conditions (wage convergence). At the same time, globalisation might increase the pressure on those countries with better working conditions as they experience stiffer competition from markets in low-wage countries with poor working conditions. In this case, while convergence may occur, it would not necessarily be upward convergence if the countries with better working conditions are not able to increase productivity enough to meet the demands of the market while maintaining working conditions.

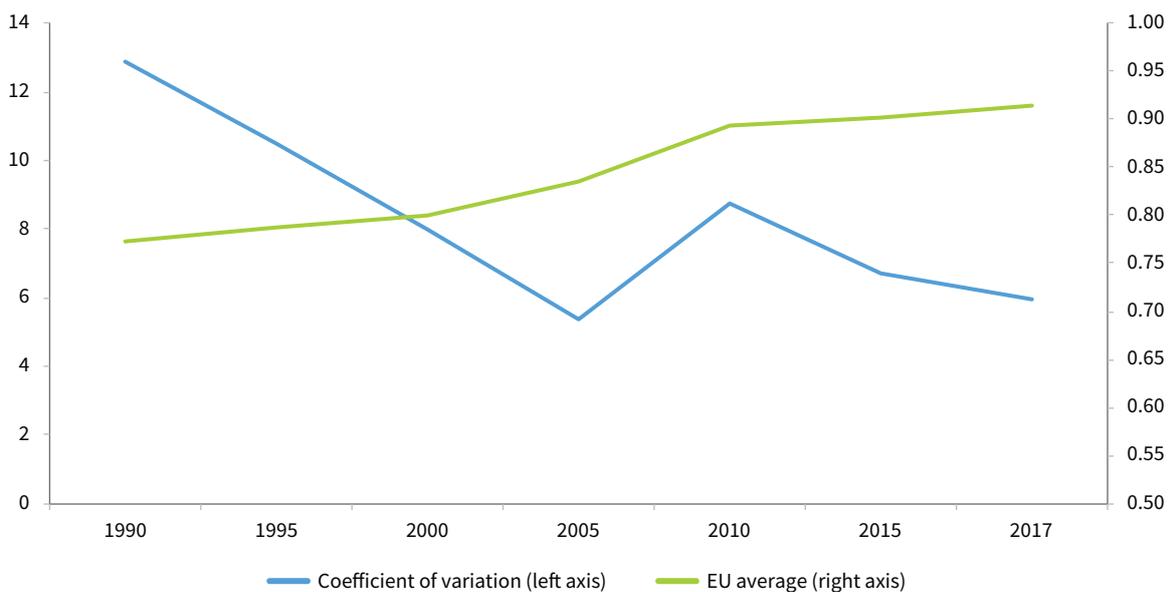
### Immigration

Immigration can affect working conditions through two main mechanisms. First, research generally concludes that, overall, immigrants have worse working conditions than locals, particularly, as Eurofound (2019a) highlighted, the first generation. This is true for specific dimensions such as Earnings (Lehmer and Ludsteck, 2011; Antón et al, 2012; Anderson, 2015) and for the types of jobs performed by immigrants (Muñoz de Bustillo and Antón, 2012; Eurofound, 2019a). This would lead to an increase in inequality and a deterioration of average working conditions, especially if, in the

alternative ‘no immigration’ scenario, such jobs did not exist (i.e. they are supply-driven jobs). Second, immigration creates an increase in labour supply that could also have an impact on wages and their evolution. There is a great deal of debate in labour economics about whether immigration has a negative impact on the evolution of wages of local workers (and working conditions more broadly), which is the expected effect of immigration according to the standard labour market model (Borjas, 2016), or whether immigrants have complementary skills that do not substitute local workers and their skills, meaning that immigration may have no impact on local wages (Card, 1990), or might even affect them positively.

Since 2000, there has been a convergence of immigration rates in the EU, with countries known traditionally as sending countries (Greece, Ireland and Spain) having, in less than a decade, immigration rates as high as countries known traditionally as hosting countries (such as Germany and the United Kingdom). Figure 17 shows that since 1990, the EU has experienced an increase in immigration rates, with the immigrant population increasing from 7.6% of total population in 1990 to 11.6% in 2017, although the trend has flattened somewhat as result of the economic crisis. Simultaneously, there has been a reduction in the differences in immigration rates between the different EU Member States, with the coefficient of variation (a relative measure of dispersion) falling from 0.96 in 1990 to 0.71 in 2017.

Figure 17: Convergence of immigration rates, EU



Source: United Nations Population Division, United Nations Migrant Stock 2017 and authors’ analysis

Table 12: Potential drivers of convergence in working conditions

Driver	Expected effect
Economic convergence	Upward convergence occurs.
Structural change	Upward convergence occurs if there is convergence in economic sectors, but radical economic specialisation could lead to divergence.
Labour market institutions and regulations	The effect is contingent on the existence of convergence in labour market institutions. EU soft and hard laws have a positive influence on convergence.
Welfare policies	Upward convergence occurs, contingent on the existence of convergence in welfare state policies.
Technology and technological change	The adoption of similar technologies by countries might lead to a process of homogenisation and convergence in working conditions. The increase in productivity promotes upward convergence, while its potential unequal impact on different sectors of the labour market and countries might lead to downward divergence, leaving the total impact open.
Globalisation	This has multiple impacts on working conditions, different aspects of which may develop in different directions.
Immigration	Convergence in immigration rates might lead to convergence of working conditions, probably downward.

### Seven drivers: Summary

Table 12 summarises the overall expected impact on convergence of the seven drivers reviewed above. The potential impact of many of the drivers is far from clear, as in most cases the same driver can have opposing impacts on working conditions and convergence in working conditions. In such cases, the overall impact would depend on the intensity of the opposing effects. Furthermore, in all cases, upward convergence in working conditions is contingent on the existence of convergence in the particular driver.

### Approach to identifying drivers

The aim of this section is to identify which of the factors discussed above contribute to convergence. There is no standard method for doing this in the economic literature, as work in this area tends to be confined to exploring whether convergence exists, using the sigma and beta approaches primarily. When analysis fails to detect unconditional convergence, it is common to proceed to assess the presence of conditional beta-convergence, that is, whether countries evolve towards country-specific steady states or levels of welfare determined by the structural characteristics of the countries (such as institutions). The econometric specifications for detecting this type of convergence are:

$$\log y_t - \log y_{t-1} = \alpha + \beta \log y_{t-1} + \theta z_{t-1} + \varepsilon_t \quad [9]$$

where  $z_{t-1}$  represents the conditioning variable. The conditioning variable is often lagged in order to avoid

endogeneity concerns (the well-being outcome analysed in this chapter might contemporaneously affect the conditioning variable). Within this framework, Schmitt and Starke (2011) proposed assessment of the existence of convergence by introducing interactions between the initial level of the variable of interest and the country-level characteristic of interest, that is:

$$\log y_t - \log y_{t-1} = \alpha + \beta \log y_{t-1} + \theta z_{t-1} + \delta z_{t-1} \log y_{t-1} + \varepsilon_t \quad [10]$$

The parameter of interest is delta. If  $\delta < 0$ , the characteristic  $z$  accelerates convergence and can be interpreted as a driver of convergence.<sup>10</sup>

The analysis involves two steps. First, the regression above (equation [9]) is carried out separately for each variable to assess the likely impact of each covariate of interest. Following this, a multivariate model is estimated. As in earlier analyses, the number of countries for which data are available and the limited time period covered by the data constrain the sample size. This is a particularly important limitation for the analysis, given that the conditioning variables (the drivers) imply an additional reduction of the degrees of freedom in the statistical exercise. Therefore, in order to estimate a multivariate model, a stepwise criterion is used for model selection. There is no reason, at this stage, to predict that any conditioning variable will be more relevant than any another, so this is an appropriate method for overcoming the issues identified in conducting this part of the analysis.<sup>11</sup>

<sup>10</sup> An alternative to this approach is to use separate regressions to address the issue. However, although both approaches are valid, the single-equation strategy is used here, for a number of reasons. First, it improves the comparability of this research with other work carried out (Eurofound, 2018a). Second, the test is more straightforward. Third, although it requires somewhat stronger assumptions, the degrees of freedom might be higher than using two equations and comparing the coefficients. This issue is relevant, given the limited size of the sample.

<sup>11</sup> Modern econometric practice is concerned mainly with the effect of a variable of interest (treatment variable), while the other covariates are merely introduced as a control device. This is not the case here.

After identifying the drivers of convergence in the different dimensions of working conditions, as a complementary exercise, the existence of beta-convergence in such variables is assessed using the widely used regression-based approach for detecting this phenomenon. In all the analyses, the highest possible number of countries and time periods are included to make the analysis as robust and feasible as possible, and the caveats outlined in the previous chapter regarding a lack of a balanced panel apply.

Other analytical tools were considered for the analysis, such as exploring the convergence of the determinants of job quality and shift-share analysis. The former tool was considered to be meaningless as a determinant of growth as it may have a differential impact on countries depending on their initial performance level (it can lead to divergence). In the case of shift-share analysis, there are two reasons for exclusion. Firstly, the evolution of averages does not provide information that is necessarily useful for addressing convergence. Secondly, between 2005 and 2015 there were two major breaks in the standard occupation and industry classifications, meaning that it is not possible to build a coherent series in most of the databases used in the analysis.

## Variables analysed

Building on the theoretical discussion in the previous section, a set of variables can be established that would potentially play a role as drivers of convergence in working conditions. The list aims to balance exhaustivity, endogeneity concerns (the effect of macroeconomic factors is hardly distinguishable from labour market performance), and the size and nature of the available sample. The areas and specific variables included in the analysis are listed here.

- **Labour market institutions:** This covers union density (percentage of workers belonging to a trade union); level of centralisation of collective bargaining (1–5, from lower to higher centralisation); wage-setting coordination (1–5, from lower to higher coordination); public spending on labour market policies (as a percentage of GDP); and employment protection legislation (0–5, from less to more strict regulation of dismissals, version 1 of the indicator, averaging the scores for indefinite and temporary workers).
- **Technology:** This measures average routine task intensity (according to Autor and Dorn's (2013) indicator, adapted by Goos et al (2014)) and the number of industrial robots per worker.
- **Globalisation:** This includes the de jure KOF Globalisation Index (Dreher, 2006; Gygli et al, 2019); the increase in the exposure to net imports from emerging countries (defined in Autor et al (2013) as the ratio of the increase in net imports to the initial number of workers); and average offshorability risk

(defined by Blinder and Krueger (2013) and adapted by Mahutga et al (2018) as the risk that tasks required by a job can be outsourced abroad).

- **Welfare state:** This measures public social spending as a percentage of GDP.
- **Immigration and demography:** This is the percentage of the resident population born abroad.
- **Economic convergence:** This measures per capita income in PPP in US dollars.
- **Structural change:** This measures the change in the share of employment of the one-third of industries with the lowest productivity and the change in the share of employment of the one-third of industries with the highest productivity.

As mentioned above, with the exception of changes in exposure to trade and structural change (whose initial values are meaningless), the initial values of each of the covariates described above are considered in order to minimise endogeneity concerns.

## Data sources

The following databases are used in the analysis.

- **Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts (ICTWSS):** Information on union density, the level of centralisation of collective bargaining and the degree of coordination of wage-setting (Visser, 2016) is drawn from this.
- **OECD 2019 Statistics:** This is the main source for constructing indicators of the level of public social spending, public spending on labour market policies and employment protection legislation (complemented by the database built by Avdagic (2015)) and per capita income in PPP.
- **KOF Globalisation Index:** In particular, the measure aiming to capture de jure economic (trade and financial) globalisation (Dreher, 2006; Gygli et al, 2019) is used.
- **World Robotics Survey 2017:** This is conducted by the International Federation of Robotics and provides information on the number of industrial robots per country.
- **EU-LFS:** Measures of routine task intensity and offshorability are used to compute variables at national level using microdata. This database is also used to examine structural change by computing the share and the change in the share of employment in the one-third of industries (weighting by employment) with the highest and the lowest productivity levels.
- **EU KLEMS (capital, labour, energy, materials, services) database 2011 (November 2009 release, updated March 2011):** This provides data on the levels of added value per worker in 1995 in the EU15 and is used to rank the industries by productivity.

- **World Integrated Trade Solution data** (World Bank, 2019): These are used to compute the exposure to net imports from countries experiencing significant economic liberalisation, such as China, using the methodology outlined by Autor et al (2013).
- **International migrant stock, 2017 revision** (United Nations, 2017): This is used for calculating the share of foreign residents.
- **Physical environment:** Globalisation has a negative impact on the speed of convergence.
- **Work intensity:** The degree of wage-setting coordination, public spending on labour market policies, and globalisation all appear to further convergence.
- **Skills and discretion:** Only union density has an influence on convergence, having a negative effect on the process of catching up.
- **Prospects:** Globalisation, offshorability risk, the share of migrants and a shift towards a high-productivity industry mix all promote convergence, while structural change biased towards sectors of low productivity has a negative impact on convergence.

## Results of the analysis

The first step of the analysis examines the relationships that include just a single driver.<sup>12</sup> Statistically significant results, which report the coefficient of interest (delta), are shown in Table 13. Overall, it appears that the drivers considered have limited importance in accelerating or hampering convergence. Nevertheless, some findings can be highlighted for individual dimensions of working conditions.

Overall, the results are in line with the theoretical insights discussed above. The possible exception is the effect of immigration, where it was anticipated that this could lead to downward convergence.

**Table 13: Drivers of convergence: Statistically significant relationships**

	Physical environment	Work intensity	Skills and discretion	Working time quality	Prospects
<b>Labour market institutions</b>					
Union density	–	–	0.001** (0.001)	–	–
Wage-setting coordination	–	–0.033* (0.019)	–	0.020* (0.011)	–
Labour market policies	–	–0.076*** (0.024)	–	–	–
<b>Globalisation</b>					
KOF Globalisation Index	0.002*** (0.001)	–0.004*** (0.001)	–	–	–0.002** (0.001)
Average offshorability risk	–	–	–	–	–1.364*** (0.454)
<b>Immigration</b>					
Foreign population	–	–	–	–	–0.006** (0.003)
<b>Structural change</b>					
Change in highest-productivity industries	–	–	–	–	–4.605*** (1.207)
Change in lowest-productivity industries	–	–	–	–	3.486*** –1.177

\*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.

**Notes:** The table shows the estimated coefficient for delta (the coefficient of the interaction between the initial value of job quality in the dimension, in logs, and the variable of interest). All the models consist of a regression of the five-year log-change in the value of the dimension on its initial value (in logs), an intercept, the level of the variable of interest, and the interaction between the variable of interest and the initial level of the dimension (in logs). Standard errors are enclosed in parentheses. The analysis includes as many countries and time periods as possible in order to maximise the degrees of freedom.

Results were not significant for the following variables: centralisation of bargaining, employment protection legislation, average routine task intensity, industrial robots per worker, exposure to net imports, social spending and GDP per capita.

<sup>12</sup> Each of these equations consists of a regression on the growth in the dimension (in logs) from the initial level of the dimension (in logs), the driver (which can be a change or a level depending on the variable), and the interaction between the driver and the initial level of the dimension. The coefficient of interest, as explained above, is the interaction (delta).

**Table 14: Drivers of convergence: Multivariate analysis results**

	Physical environment	Work intensity	Skills and discretion	Working time quality
<b>Labour market institutions</b>				
Union density	–	–	0.001** (0.001)	–
Wage-setting coordination	–	–	–	0.020* (0.011)
Labour market policies	–	–0.075*** (0.026)	–	–
<b>Globalisation</b>				
KOF Globalisation Index	0.002*** (0.001)	–	–	–

\*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.

**Notes:** The table shows the estimated coefficient for delta (the coefficient of the interaction between the initial value of job quality in the dimension, in logs, and the variable of interest). All the models comprise a regression of the five-year log-change in the value of the dimension on its initial value (in logs), an intercept, the level of the variable of interest, and the interaction between the variable of interest and the initial level of the dimension (in logs). Standard errors are enclosed in parentheses. The analysis includes as many countries and time periods as possible in order to maximise the degrees of freedom.

Results were not significant for the following variables: centralisation of bargaining, employment protection legislation, average routine task intensity, industrial robots per worker, exposure to net imports, average offshorability risk, social spending, foreign population, GDP per capita, change in highest-productivity industries and change in lowest-productivity industries.

The second part of the analysis consists of performing regressions using more complete models, considering all the possible variables in each equation, employing the stepwise criterion for selecting the model. Statistically significant results of these analyses are presented in Table 14. Again, it shows the value of the coefficient of interest, which in this case is the one for the interaction between each driver and the initial value in the dimension considered (a coefficient  $\delta_k$  for each driver  $z_k$ ).

Unsurprisingly, the results broadly support the findings found in the first part of the analysis.

- **Physical environment:** Only globalisation seems to have an effect, exerting a positive effect on the speed of convergence.
- **Work intensity:** Only labour market policies appear to have an effect – in this case, a positive effect.
- **Skills and discretion:** The only significant variable is union density, which decelerates convergence.
- **Working time quality:** Again, there is only one significant variable – wage-setting coordination – which has a negative effect on convergence.

Overall, the results show that the relevance of the added variables in explaining convergence is quite limited. This is probably due to the fact that convergence is not a single-country phenomenon but one related to joint movement of the units of analysis

involved. As has been noted, this is one of the reasons for a lack of literature in this area. The findings presented in this chapter show that there are relatively few drivers with a statistically significant effect. This is unsurprising, given the small number of countries and periods that were included in the analysis (these determine the degrees of freedom). For these reasons, research is ongoing in the area and includes studies such as the one by Schmitt and Starke (2011).

It was hypothesised earlier in this section that convergence in the driving factors identified would be an important factor in determining their impact on convergence in working conditions. Consequently, additional analysis was undertaken to explore whether there is convergence in the driving factors, using a simple beta-convergence analysis of the variables highlighted in the models. Table 15 displays the results and shows only those variables with a statistically significant effect.<sup>13</sup> There is convergence in all the drivers analysed except for union density, suggesting that there is an extraordinarily high degree of convergence in the main institutional factors that have an impact on the convergence of working conditions. This means that EU Member States are growing more alike in those factors with a potential impact on working conditions, in which case we could expect further convergence in the future, as some of the underlying drivers of working conditions would be converging too.

13 Given the low statistical power of the analyses presented in the second step (Table 13), the eventual existence of beta-convergence in those factors retained in the model according to the stepwise criterion was also explored (centralisation of collective bargaining, immigration, and the change in the share of top and bottom industries). However, these factors were not found to be significant. All of them exhibit convergence.

Table 15: Analysis of convergence in the drivers of convergence in working conditions

	KOF Globalisation Index	Wage coordination	Labour market policies	Union density
Initial value	-0.092*** (0.009)	-0.028** (0.012)	-0.065*** (0.011)	-0.005 (0.008)
Constant	0.407*** (0.040)	0.022* (0.012)	0.034*** (0.009)	-0.010 (0.028)
Observations	84	82	61	61
R <sup>2</sup>	0.548	0.060	0.379	0.007

\*\*\* significant at 1%; \*\* significant at 5%; \* significant at 10%.  
Note: Standard errors are enclosed in parentheses.

## Discussion of the results

Although it is difficult to draw policy implications from this analysis, given that convergence is associated with the simultaneous movement of a set of countries, several issues can be highlighted.

There is cause for both optimism and pessimism about achieving upward convergence. Optimism applies, for instance, to globalisation. Not only does the EU continue to integrate with the global economy – for example, the recent agreement with the Southern Common Market (Mercosur) – but convergence in globalisation is also apparent. On the other hand, there are good reasons for being sceptical about the evolution of wage coordination. While there is convergence in this variable, the current process of deregulation of industrial relations – for instance, the trend towards collective bargaining decentralisation (Müller et al, 2019) – casts doubt on the evolution of convergence in earnings.

The effect of labour market policies is also ambiguous, but, overall, such policies should contribute to the catch-up process in working conditions across the EU. For instance, the recovery from the crisis and population ageing should drive the reduction of unemployment in Europe. This should exert downward pressure on unemployment spending and also, to some extent, on active labour market policies. This variable had a negative value in the second step of the analysis, and the third step detected convergence across Europe. Thus, unless policymakers devote significantly more resources to active labour market policies counteracting the likely reduction of spending in this area, their contribution to convergence is doubtful.

Finally, regarding union density, it is widely known that there has been a trend of decreasing union membership across developed economies in recent decades (Schnabel, 2013), so the effect of this variable on the convergence of Skills and discretion over time might not

be positive. Nevertheless, it is noteworthy that unions have started to be viewed somewhat more sympathetically by some sectors that have traditionally been hostile to the labour movement (The Economist, 2018).

Therefore, according to the results of the analysis, if policymakers want to foster convergence in working conditions, they should promote the role of trade unions as social partners, persevere with efforts aimed at unemployment reduction, and continue favouring the integration of EU economies in global trade and finances. Nevertheless, in the current context of industrial relations change, it seems quite unlikely that they can enhance wage coordination.

## Summary and conclusions

This chapter has explored whether there are institutional and structural characteristics that affect convergence in working conditions among EU Member States. Seven potential drivers of convergence were identified from the literature, although it must be noted that research in this area is underdeveloped from a theoretical point of view and that the potential impact of several of the drivers identified was rather ambiguous.

Using an extensive set of databases combined with the dimensions of working conditions defined in the first part of the report, regression analysis linked to the concept of beta-convergence was conducted to explore which factors accelerate or decelerate convergence – in particular, the processes of upward convergence that enable poorer-performing countries to catch up with better-performing ones.

With certain caveats concerning the available degrees of freedom in the analysis, the findings suggest that globalisation and labour market institutions have a role to play in promoting convergence in working conditions.

In terms of policymaking, a key issue is that convergence is not a single-country phenomenon but a joint process observed for a set of countries. Convergence is not a strictly economic phenomenon and, as such, it does not necessarily follow accepted laws and theories relating to diminishing returns in economic growth. Indeed, improvements in working

conditions are often linked to an increasing economic surplus. These issues make it difficult to identify clear determinants of convergence, particularly in the case of the EU, where countries share a developed institutional environment and where there is an additional layer of policy development over and above the national level of policymaking.

# 5 Policies promoting upward convergence

Interventions to improve job quality occur at many different levels: individual, organisation, sector, national government and supranational government (Warhurst et al, 2012; Findlay et al, 2017). However, policies centred on regulatory or supportive actions by governments and social partners tend to attract most attention because of their ability to ‘block off the low road’ of poor job quality and encourage the ‘high road’ of good working conditions and thus propel upward convergence (Carré et al, 2012).

All EU Member States have policies and actions that relate to aspects of job quality, many of which are EU driven. They also pursue policies that explicitly refer to job quality or conceptual variants of it. Despite these policies and actions, previous research by Eurofound (2009, 2015a) concluded that dedicated policy effort is still required to improve job quality, as upward convergence in working conditions does not appear to be an automatic consequence of economic or technological development. In other words, convergence in job quality does not occur ‘naturally’.

This chapter presents the results of an in-depth review of two EU policies that have the potential to foster upward convergence in working conditions and improve job quality over the course of working lives.

## Approach to the policy analysis

### Selecting policies for analysis

Desk research and the results from the convergence analyses presented in Chapter 2 were used to identify suitable policy initiatives for examination. Other factors that were considered important in making the selection included:

- the likelihood of a particular policy initiative contributing (directly or indirectly) to upward convergence or, conversely, to preventing any further divergence or stagnation in the specific working conditions in EU Member States
- the possibility that a link could be drawn between the focus of the policy initiative and one or more dimensions or subdimensions of working conditions

- the preference for a broad policy initiative that potentially affects all workers or one that targets specific groups such as women, young people, older workers, parents, carers, low-wage and low-skilled workers, precarious workers or migrant workers
- the fact that gender equality is one of the founding principles of the EU
- what stage the policy initiative is at, including whether any impact assessments have been undertaken

After consideration, two policies were selected for the focus of the in-depth review: the revised Directive on Transparent and Predictable Working Conditions and the Digital Single Market strategy.

### Interviews with policy experts

The policy analysis involved interviewing high-level policy experts to capture their views, expectations and experiences regarding the two policy options. They were asked about the arguments for and against these policies, as well as whether these policy tools could be useful in promoting upward convergence of working conditions in the EU. To fully cover these topics and allow flexibility, the interviews were semi-structured and varied depending on the position and perspective of the interviewee (see Annex 4).

A total of 16 interviews were conducted with experts from across the policymaker, practitioner and academic constituencies (see Table 16 below). Practitioners included both employer and trade union representatives as well as experts from business. Anonymity requires that the names of the interviewees and the organisations to which they belong are withheld from this report.

**Table 16: Profile of interviewees**

	Type of interviewee		
	Policymaker	Practitioner	Academic
Directive on Transparent and Predictable Working Conditions	1	3	2
Digital Single Market strategy	3	3	4

## Directive on Transparent and Predictable Working Conditions

### Background to the directive

In 2017, the European Commission decided to update by replacement the 1991 Written Statement Directive, which seeks to ensure that employees receive information in writing about the working conditions applicable to their employment contract or relationship (European Commission, 1991). However, by 2017, this was no longer regarded as fit for purpose. It was criticised for being ineffective, with too little information being provided too long after commencement of work. Differences in Member States' national provisions further hampered the effectiveness of the directive (European Parliament, 2018).

Moreover, the EU labour market has changed significantly since 1991, becoming more unpredictable and less transparent. One-quarter of the labour market now consists of non-standard employment – part-time, temporary and self-employed workers – with much debate about whether or not all self-employment is, in fact, genuine. Since 2010, half of new jobs have been non-standard, and digitalisation has created new forms of employment (European Commission, 2017d). Some of these new employment forms have yet to attain a legal status, so employee rights and employer responsibilities are unclear (see, for example, Taylor et al, 2017; European Parliament, 2018). This is the case for platform work, which has emerged with the advent of online platforms mediating the supply of and demand for labour (Eurofound, 2019b).

In this context, the European Commission believed that there was insufficient protection for workers, with a risk of deepening divergences in working conditions across the EU. Accordingly, it launched a consultation with the social partners on a proposed new directive on transparent and predictable working conditions in the EU (European Parliament, 2018).

A key outcome is that the scope of inclusion is widened, giving new rights to workers in casual or short-term employment, on-demand workers, intermittent workers, voucher-based workers, platform workers, as well as domestic workers, freelancers, trainees and apprentices. In terms of transparency, within one week of starting work, employers are required to provide employees with basic information in writing on their employment contract, such as its duration, notice periods and initial basic salary. Within a month, more complete information must be provided, for instance on training entitlements. Moreover, mandatory training should be provided free of charge by the employer, with the added proviso that it should be completed within working hours and count as working time.

In terms of predictability, the new directive includes a requirement for employers to provide information to non-standard employment contract workers on

expected working arrangements if working patterns are unpredictable, with employees having a right to know reasonably well in advance when work will occur. In addition, employers of such workers cannot prohibit, sanction or hinder workers from taking jobs with other companies. A further provision limits probationary periods to no more than six months (or nine months for managers) and prevents employers from unilaterally extending a probationary period or, with a renewed contract, insisting upon a new probationary period.

The aim of the new directive is to improve working conditions by providing workers with improved protection by ensuring basic rights in employment contracts and relationships. Importantly, it also defines a 'worker' and, thus, who is covered by the directive and who should expect a common core set of rights (PPMi, 2017; European Parliament, 2018).

The European Commission estimates that 200 million workers across the EU will benefit from the new directive. Of these, 2–3 million non-standard workers will be covered, as will 8–16 million new workers, and the work–life balance and health of 4–7 million workers will also be improved. Employers should benefit through fairer competition, increased legal certainty and employee retention, better management–employee relations and increased productivity. Member State governments should expect additional tax revenues and savings on social security (European Commission, 2017d, 2019c).

### Expert perspectives

#### Support for the new directive

At a general level, the interviewees recognised that workers should have details of their employment contracts. One academic noted that his research over the years had revealed how little information many workers receive. Where it was raised, there was agreement among interviewees that the 1991 Written Statement Directive was not working as well as had been hoped. It was claimed that the majority of agency workers in Belgium, for example, were unaware of many aspects of their terms of employment and, likewise, that part-time workers had insufficient information about their employment entitlements, including their pension arrangements. Either the information required by the old directive was too vague and general or, if it was more specific, was not enforced by national authorities.

In this context, the interviewees perceived a necessity for the new directive – including the employer representatives. 'We are not against an update,' said one. 'In the last 30 years things have evolved tremendously.' These changes had produced a double diversity problem, one academic explained. Firstly, there is now a growing diversity of forms of employment within the EU and, secondly, there is diversity among EU countries in terms of which forms are more prevalent in each country.

## Changing world of work

Some specific developments were singled out as problematic in terms of transparency and predictability: gig working, posted working, agency working, employment of migrants, zero-hours contracts and the use of outsourcing through supply chains. It was recognised that in some EU countries, agency working and subcontracting had existed for a long time but are now increasing. Over time, companies had become more creative, a policymaker explained. In the past, workers who focused on a company's core business had standard employment, with only peripheral work being outsourced. Now, in some cases, the entire workforce is being outsourced. New digital technology was identified as one driver of this situation and was claimed to be driving employment in the EU 'back to a situation [like] the end of the nineteenth century'. Good data gathering is difficult around some forms of work, particularly that offered by platform companies, said one policymaker. Who logs work undertaken, what defines 'work' and what defines a 'worker' are issues; 'the whole thing has become very blurry, and the lack of transparency [is] a problem,' she said.

Three consequences of these developments were identified by the interviewees. Firstly, a small but increasing number of companies are not covered by regulation, either because they use new forms of work for which regulation has yet to be devised or because, operating internationally across the borders of the EU, it is unclear which regulations are applicable. 'It becomes confusing,' said one policymaker, 'and some platform companies, for example, are effectively self-regulating.'

Secondly, it seems that the labour market can work efficiently only when both parties to an employment contract have 'symmetrical information' so that informed choices can be made. More workers find it increasingly difficult to know their terms of employment. 'It can be like a Chinese box,' said one policymaker. 'You have a company within a company, within a company, etc., and employees don't actually know who has their record of employment.' As such, 'it is difficult to enforce employment rights' and to know 'who should address particular issues'.

Thirdly, this fracturing of the labour market undermines the consensus that a single market for labour exists in the EU: 'There has been economic convergence, but it has not translated enough in terms of social convergence, which has created huge frustration.' This frustration has been felt both by workers in newer Member States, who expected to obtain the same working conditions as those in western Europe, and by workers in western European countries, 'who are scared of immigration and the undermining of their social system,' explained one academic.

Some trade union representative bodies believe that even those Member States in which non-standard employment is less evident recognise that there is now 'a big variety of employment conditions and working conditions' and that transparency and predictability in these conditions is a growing problem, particularly in some sectors. But sectors currently not directly affected by the increase in non-standard employment in the EU might also be affected in the future. One employer representative said that, given the pressures on all businesses, he was 'not sure how we can continue to work the way we do. ... All companies are always looking for ways to make cost savings or [make] changes within their organisation.' While employment patterns in his sector would probably remain unchanged for the next 5 to 10 years, beyond that time frame, he was 'not sure what the world will look like'. The new directive was therefore welcomed: 'I fully accept that politics have to set a minimum standard; you cannot "leave it to the market", as they say,' said an employer representative.

## Perceived impact

There were mixed views on the perceived efficacy of the new directive. On the one hand, it was recognised that workers, employers and governments would benefit from it. On the other hand, there were concerns about monitoring and enforcement.

A broad range of beneficiaries were identified. Interviewees believed that the new directive would help workers in non-standard employment, as well as low-skilled, young and migrant workers – the workers 'on the fringe of the labour market,' one policymaker said. It would create transparency: 'They will have a piece of paper with the name of the employer. This would help them to know who to address when they have issues.' Knowing their hours in advance would also create greater predictability: '[It] should help them to organise their working and private lives,' the policymaker explained.

It was also suggested that there could be better job quality for all workers and that company performance might also be improved so that employers, too, would benefit: 'They may get more reliable workers that are happier and motivated. ... They might have better products, be more competitive,' said one academic. It might also create a level playing field in the market between those companies that abide by regulations and those that, to date, have not or are not covered by them. Together, this might create a business case for government support where administrations recognise they would pay less in social security benefits and have a healthier population. Politically, therefore, the new directive might mean that governments enjoy a triple benefit: 'happy people living in their countries ... with better working conditions, [and] more secure pay'.

### Concerns around implementation

The concerns around the directive mostly centred on its implementation, monitoring and enforcement, underpinned by some form of measurement.

The Commission needs to ensure that the directive is not ‘watered down’ but is properly implemented through Member States’ national legislation. According to one employer representative, the tricky part is ‘the way Member States, with or without [social] partners, are implementing the European legislation into national law’. She recognised, however, that legislation was needed, particularly in those EU countries where the social partners are weak and social dialogue is lacking. But, even with legislation, monitoring and enforcement were still seen as important: ‘compliance is always a problem,’ said one academic.

Introducing company audits and publishing key indicators within company annual reports were suggested as possible means of monitoring the operation and impact of the directive. These data could then be linked to wider survey data to benchmark companies as a way of encouraging upward convergence. One trade union representative suggested that this upward trajectory would be reinforced if targets were set. It was suggested that a range of agencies could be involved in monitoring the directive’s implementation, from public employment services through to Citizens’ Advice Bureaux. It was also suggested that, where they exist and have capacity, trade unions could provide this monitoring at workplace level. Similarly, works councils should have oversight of operation and impact at company level. In the absence of trade unions and works councils, national legislation to support the directive would be needed.

The need for effective enforcement of the new directive was a recurring theme. Some experts argued that national authorities should take responsibility for this, but questions were raised about whether Member States had the will and resources to do so. If Member States’ tax bases shrink as the platform economy expands, so too will governments’ resource base for funding monitoring and enforcement. One response would be for the European Commission to take responsibility and use the European Labour Authority, extending the agency’s remit to include all workers rather than focusing primarily on cross-border workers. Linking these two positions, the choice is stark; according to one expert: ‘Either you have a brute force approach, which is enforcement with checking, or you involve the social partners.’

It was noted that measuring progress along the path of upward convergence resulting from the directive was required. However, measurement is currently difficult,

and efforts must be made to improve it and ensure that it happens. According to one academic, current labour market datasets, principally the EU-LFS, are inadequate for the task in that they capture ‘very few forms of work, especially in a comparative perspective’. It was suggested by one policymaker that national sample sizes in the EWCS be increased to facilitate better analysis.

The experts clearly recognised the benefits of addressing these challenges: the directive would trigger a behavioural shift among employers, ‘send[ing] a signal to people about what is good behaviour’ while also ‘giving people real power to defend their interests’. Ideally, according to one expert, the success of the directive would result in workers with a ‘flexible, non-standard contract potentially feeling more secure, having a longer contract, an increase in wages, more reliability in work schedules’ and non-standard forms of work becoming a less attractive option for employers.

### Other suggestions to deliver upward convergence

Other means to achieve the upward convergence of working conditions were proposed by the interviewees. One suggestion was collective bargaining, proposed not only by a trade union representative but also by a policymaker. The Nordic countries were cited as the model for this collective bargaining solution. However, it was also recognised by a number of interviewees that the Nordic experience of social partnership was confined to those countries and was not common across the EU. Indeed, they conceded that trade unions struggle in some EU countries to have a voice in both workplace and economic governance. As such, while the model has worked well in the Nordic countries, a trade union representative admitted that its transferability as an approach to raising the standard of working conditions was limited, requiring, at the very least, capacity building in other EU countries.

A variant on this argument was the use of a stakeholder approach underpinned by benchmarking, as advocated by an employer representative: ‘The most important thing to do to make the labour market effective is to have a role for each country, the [social] partners, the government and the EU Commission.’ The benchmarking of working conditions might not be liked by national governments and social partners, but it would change their behaviour, he argued. There is a need

*to show the players in the national labour markets where the shortcomings are [in relation to the directive], if doing well compared to other countries or not ... and try and get a dialogue and convince them there are possibilities.*

Governments and public authorities should also position themselves as model employers. Governments at all levels in the EU outsource significant amounts of work. Interviewees argued that reversing this policy might have a huge positive impact on working conditions. One academic said: ‘Government has a big responsibility. The first steps to improving job quality could be to provide good employment in the public sector.’

It was also suggested that economic development with company profitability was the key driver of working conditions within countries, with more development enabling companies to pay for improvements. Standard employment required ‘industry and companies to earn enough to afford this type of employment relationship’, an employer representative said. Differences in working conditions within countries were smaller than differences between countries in the EU, he maintained. ‘Upward convergence in working conditions across the stronger and weaker EU economies would only happen if you see an upward convergence in the economic performance of [the weaker] countries.’

Another suggestion was that competition law might be used in conjunction with labour law to shape business models as a route to influencing working conditions. This links back to collective bargaining in the context of social partnership approaches to workplace and economic governance. As one policymaker said,

*Cooperation between the social partners is the key force that would deliver a change in the way the economy can be organised, moving from bad jobs to good jobs, from low productivity to high productivity.*

‘To do so,’ said this policymaker, ‘you need to be able to understand and influence employers in making choices.’ Perhaps it was not a new directive that was needed, he opined, but more modern unions and more modern employer associations across the EU, not just in particular countries. To help this modernisation process, a practical suggestion was offered – a review of the way the management of people is taught: ‘There is a narrative that all employers know exactly what they are doing; we should let them do it and leave them alone.’ Instead, what might be needed is a revamp of management education that understands and promotes the ‘relationship between good working conditions, the ability to compete [and] resilience’. He went on: ‘Currently, too few managers understand this link.’

## Summary

The new directive was generally welcomed, or at least accepted, by all parties – policymakers, practitioners and academics. It was agreed that a win-win-win scenario was possible, with benefits for workers, employers and governments if the directive delivered as intended. However, there was some concern that if not properly implemented, monitored and enforced, it

might not deliver the intended improvements to working conditions and so might not lead to an upward convergence of working conditions across the EU. As such, a range of suggestions beyond the directive were offered, which, while put forward as alternatives, in many cases might support or supplement the directive, particularly in terms of monitoring and enforcement – most obviously the involvement of the social partners. Overall, however, the need for the new directive was recognised and the purpose underpinning it appreciated. As one employer representative commented: ‘For me, it is better to increase upward convergence. But it can’t be taken for granted that [the directive] will provide an upward convergence.’

## Digital Single Market strategy

### Background to the strategy

At EU level, it is recognised that digital technologies bring both opportunities and challenges for innovation, growth and jobs. In particular, the process of digitalisation is transforming the way people work, including tasks and skills requirements at work, as well as the types of skills citizens need to participate in society more generally (European Commission, 2019b).

The demand for digitally skilled workers was growing by around 4% a year by 2015, with shortages of information and communications technology (ICT) professionals in the EU forecast to lead to 825,000 unfilled vacancies by 2020 unless remedial action is taken (European Commission, 2015). While there has been some recent progress in the prevalence of basic digital skills among EU citizens (increasing from 55% to 59% of the population), the Commission has identified the need for digital skills levels to be raised among employees in all economic sectors and among job-seekers to improve their employability (European Commission, 2015). The European Council too has recognised that ‘increasingly, job openings require both a higher level and a broader range of skills’ and ‘a large majority of jobs will require some level of digital competence’ (European Commission, 2016). As such, digitalisation is considered a necessity rather than a choice for European businesses and economies as a whole (European Commission, 2017e).

A recent report by Eurofound (2018a) construes the impact of digitalisation as ‘possibly the most salient future development in the world of work’ (p. 21). The report points out that there are many means by which digitalisation may impact both positively and negatively on work, and that digital transformation provides the opportunity for growth in less-common forms of employment. This being so, the report goes on to identify the structure of the digital platforms market as potentially having significant implications for pay and working conditions.

Evidence suggests that while most jobs require basic digital skills, the proportion of workplaces that require digital skills vary by workplace size, occupation and sector (European Commission, 2017c). While some occupations – such as technicians, professionals and managers – require specialist digital skills, some workplaces do not consider digital skills to be important for some occupations (European Commission, 2017c). Digital skills gaps are more likely to be found in high- and medium-skilled than low-skilled jobs. While the lack of digital skills in workplaces is reported as having an impact on performance, productivity and customer numbers, the vast majority (88%) of workplaces did not take any action to tackle the lack of digital skills of their employees (European Commission, 2017c).

In this respect, analysis by Cedefop (2016a) reveals that future structural transformation of EU labour markets is closely connected to a high demand for advanced digital skills. This found a strong correlation between jobs that are anticipated to grow in number over the next decade and the importance of advanced digital skills within such jobs. At present, the EU has a shortage of employees with digital skills (Cedefop, 2016b). For example, Cedefop's European Skills and Jobs Survey revealed that 71% of adult employees in the EU need at least some basic or moderate ICT skills to be able to perform their jobs, about 14% need advanced ICT skills, while only 14% stated they did not need ICT skills at all. Yet, about one in three of those employees are at risk of digital skills gaps (Cedefop, 2016b). Results from the Cedefop survey also point to large disparities in demand for digital skills between EU Member States. For example, more than 80% of the adult workforce in Denmark, Ireland and Sweden need at least a basic level of ICT skills to do their jobs, while the proportion in Cyprus, Greece and Romania is around 60% of workers (Cedefop, 2016b).

There is a consensus that the disruptive effects of digitalisation have implications for widening inequality. In particular, digitalisation is believed to have fostered the polarisation of jobs in the labour market (Autor, 2015; Autor et al, 2003, 2006). This concern has been expressed within the EU, with the High-Level Expert Group report on the impact of the digital transformation of EU labour markets identifying the challenge of building a more inclusive society by avoiding polarisation in labour markets (European Commission, 2019b).

The European Commission adopted the Digital Single Market strategy in 2015. Its main aim is to maximise the positive impacts of the digital revolution on peoples' lives and European business activity (European Commission, 2015).

The strategy is a high-level, broad-based policy built on three pillars:

- ensuring better access for consumers and businesses to digital goods and services across Europe
- creating the right conditions for digital networks and services to flourish
- maximising the growth potential of the digital economy

Promotion of digital literacy, skills and inclusion forms a key part of the pillar aimed at maximising the growth potential of the digital economy by promoting digital skills and high-performance computing, digitising industry and services, and developing artificial intelligence and modernising public services (European Commission, 2019a).

In 2017, 18 months after its adoption, the European Commission published its mid-term review on the implementation of the Digital Single Market for all (European Commission, 2017a). On the issue of digital skills, it noted that the education and training systems in many countries 'are not fully adapted to meet the requirements and make best use of the digital evolution' (p. 41). Moreover,

*work-based access to training remains highly dependent on the type of contract: almost one in two employees on permanent contracts receives training compared to 32% of employees with fixed contracts and 19% of self-employed.*

(pp. 41–42)

Here the European Commission stressed that 'the responsibility for curricula and the organisation of education and training lies with the Member States' (p. 42). It is in the context of this review and the need for further change that the expert interviews were conducted.

## Expert perspectives

### Support for the strategy

All experts viewed the focus on digital skills as important for understanding the future of work in terms of which types of jobs are likely to be created, destroyed or changed. While digital skills were considered important for all workers, interviewees saw such skills as being particularly important for assisting younger workers to gain entry to jobs and for enabling older workers to maintain their employability as new technologies are introduced in the workplace.

The interviewees generally agreed that workers and employers shared concerns about the impact of digitalisation on jobs. However, one practitioner felt that the risk-averse nature of businesses meant that

they did not always make the necessary investments in digital technologies or, if they did, they did not always achieve the maximum gains from investments in new technologies. There was consensus that some sectors, such as manufacturing, engineering and construction, were already very focused on digital skills, while other sectors were much less so.

One practitioner also felt that it was often more difficult for traditional sectors than emerging sectors to modernise and adopt digital technologies. Relatedly, some of the newer Member States, such as Estonia, were seen to be better positioned to respond to the challenges of digitalisation than countries with long-established traditional industries, more rigid labour markets and sunk investment in old technologies, such as France, Italy and the United Kingdom.

### Perceived impact

Interviewees saw the Digital Single Market strategy as having the potential to improve some aspects of working conditions and reduce labour market segmentation by promoting digital literacy, skills and inclusion. They saw it as a vehicle to support workers' skills and career development over the course of their working lives.

Interviewees considered investment in digital literacy to be essential for business survival in all Member States if business wants to remain competitive in the open market. They also deemed it important for public services to take advantage of digital technologies. However, there was shared concern among the experts that demand for digital skills was outstripping supply, meaning that many businesses, across most or all sectors and all Member States, faced skills mismatches and skills shortages.

Interviewees distinguished between workers with high-level or advanced digital skills (ICT specialists) and those with intermediate or basic digital skills. They felt it was easier and faster to develop policy solutions to address skills shortages among ICT specialists than to address the more widespread problem of shortfalls in basic or intermediate digital skills in the broader workforce. One practitioner mentioned that workers in some sectors – such as automotive, energy and mining – require a few very specific technical and digital skills, whereas there is a general requirement across all sectors for all workers to have at least basic literacy, numeracy and digital literacy.

While interviewees generally agreed that there was great potential for workers and businesses to benefit from investment in digital literacy, there were concerns that such investment could lead to inequality in outcomes. That is, there was a danger that policies and initiatives aimed at improving digital skills had the potential to increase digital divides: between

highly skilled and less-skilled workers; between high-technology and less technologically advanced sectors; between more digitally advanced and less digitally advanced Member States; and between workers and businesses located in urban centres and those located in more geographically remote regions. One example provided by a practitioner was that compared to men, women are often less empowered and more likely to be threatened by digitalisation, and less likely to study and work in science, technology, engineering and mathematics. Thus, women are less likely than men to benefit from digitalisation.

The experts thought that those countries, regions and sectors where good cooperation and social dialogue exists between employer associations, trade unions, and education and training providers will be better placed to benefit from digitalisation. Countries with strong vocational education and training (VET) systems and strong institutions that work closely with industry to co-design curricula for education, apprenticeships and workplace training were also deemed more likely to benefit from the Digital Single Market strategy. In this respect, there was some concern that the most competitive sectors and regions, the ones that have well-equipped infrastructures, were most likely to prosper from digitalisation.

While the experts agreed that digital skills were important, they recognised that all jobs now typically also require a set of soft or generic skills, such as interpersonal and communication, team-working and problem-solving skills. One policymaker highlighted a shift in language among policymakers from the narrow term of 'digital skills' to 'skills in high demand in the digital economy'.

### Sharing responsibilities

While employers and businesses could benefit from investment in skills and employers commonly report skills shortages, they typically prefer to 'buy' rather than 'make' skills. While skills shortages are particularly acute in many small and medium-sized enterprises, businesses should invest in skills development themselves rather than looking to the state or the EU to underwrite their training investments. One practitioner identified a strategic responsibility for managers, including human resource managers, to understand and manage the evolution of skills within their companies and across their sector arising from digitalisation. For example, in public administration, local governments in many Member States are undergoing transformation, including the automation of processes that require new skills on the part of both employees and public users.

The EU, too, is seen as having a strategic role. It should support skills forecasting and equip workers for those jobs for which growth is anticipated, to help address

potential skills shortages. As one practitioner said: ‘It is difficult for individual Member States and businesses to identify what skills they need now, let alone in the future.’ The EU should also promote awareness about the importance of digital transformation, particularly in terms of evaluating initiatives, so that those that are proving to be effective in one country can be rolled out to others. Enabling access to digital technologies, particularly for micro and small companies, was also raised, with some experts proposing that the EU should continue to provide loans and grants for this. Several experts identified the need to provide support to initiatives, noting that the effectiveness of the Digital Single Market strategy was being hampered by implementation problems at both national and local levels.

Despite the potential of the strategy, interviewees had mixed opinions about the effectiveness of EU policy efforts generally around digital skills. While there is high-level EU political commitment to addressing the challenges arising from digital technologies, responsibility for policy on digitalisation spans various EU institutions. For example, the Directorates-General for Communications, Networks, Content and Technology and for Employment, Social Affairs and Inclusion, as well as Eurofound and Cedefop are all developing policy around digitalisation. This diffusion has meant that EU actions and initiatives are not always ‘joined up’ or coordinated. This may partly explain why a number of the experts commented on a general lack of awareness about specific EU initiatives that were already underway to address the challenges associated with rapid development in digital technologies.

### Other suggestions to deliver upward convergence

All experts identified the building of multistakeholder partnerships, particularly at the sectoral level, between employers, trade unions, VET providers and governments as important for addressing skills mismatches. Social dialogue, framework agreements and collective bargaining around the impacts of new technologies on the introduction of new business models, reskilling and upskilling were all considered essential. However, interviewees also appreciated that social dialogue and collective bargaining varied considerably across Member States. Other partnerships could centre on cooperation at the sectoral level, with employers working closely with VET providers and public employment services to identify which jobs are available and to develop workplace training to help displaced workers.

Interviewees also identified investment as a critical lever for growth, productivity and job creation. One practitioner commented on the importance of employers adopting a long-term view of the benefits of investment in skills rather than seeing it as a short-term cost. Others noted that public sector investment in infrastructure, such as planning and developing

regional and sectoral skills strategies, was also necessary.

All the experts stressed the importance of improving the delivery of digital skills in the education and training systems of Member States so that digital skills form part of the core competencies required at every qualification level. One policymaker highlighted the need to improve these skills among educators themselves, as well as the need to ensure that curricula were delivering the type of learning that employers require. In this respect, all the experts reiterated the points about digital skills being addressed through wider skills strategies. As one practitioner said: ‘While the impact of digital technologies on workers, businesses, governments and citizens was pervasive, digital skills gaps cannot be solved through narrowly focused policies.’

There was unanimity on the need to reduce the digital divide. It was held that EU initiatives should focus on particular types of workers who do not possess digital skills and who are therefore at risk of marginalisation in the labour market and of social exclusion. One practitioner mentioned that digitalisation in public transport in one country saw (older) transport workers having to take on many new job requirements. In this respect, many workers are increasingly required to teach themselves on the job, which can prove difficult for older workers, many of whom have not grown up using computers or the internet. The importance of gender mainstreaming initiatives was also raised.

Digital skills learning accounts were mentioned as one type of additional measure through which the EU could support development of digital skills. One policymaker described an example where the right to learning was negotiated for Italian metalworkers and suggested that this type of initiative could be used in other domains to help workers retrain and reskill. Perhaps more important than formal education and training is the need for the EU to support workplace training and lifelong learning. In particular, all of the experts mentioned the need for initiatives that recognise skills learned on the job; some mentioned skills passports as a way to help workers gain recognition for the skills they acquire in the workplace.

In terms of funding, the interviewees saw the EU skills strategy and structural funds such as the European Social Fund as important vehicles to facilitate Member States’ investment in developing skills anticipation systems and to make informed decisions on where extra investment in training and education is required. Several of the interviewees mentioned the EU’s Youth Guarantee and Upskilling Pathways initiatives as being useful in helping to address the challenges arising from digitalisation. In particular, they saw Upskilling Pathways as important because of an increasing need for in-work recognition of skills and assistance for workers already in employment who require upskilling.

Although they acknowledged that addressing workplace upskilling was challenging because of the uncertainty about the level of digital (and other) skills that is needed, they considered it essential to invest in workers already in employment, as current and future skills gaps could not be addressed solely via education and training of young workers and graduates.

## Summary

While the experts generally considered the high-level Digital Single Market strategy to be beneficial, they were cautious in their optimism about its ability to drive upward convergence in working conditions. They felt that the main challenge was the implementation of the strategy by Member States. One practitioner opined that it would drive upward convergence only ‘if awareness-raising was improved and the EU resourced and enforced the commitments made by Member States’.

While, overall, the interviewees saw that improving digital skills was likely to benefit workers, they acknowledged that this would not necessarily or automatically translate into improved working conditions. For example, one expert observed that while equipping EU citizens with more digital skills may improve their employability, other aspects remain to be addressed to get people into good-quality jobs. In other words, as one practitioner said: ‘Addressing skills cannot solve all of the problems in EU labour markets.’

Several experts commented on the importance of targeting EU investment into areas of most need where it is likely to have greatest impact, such as the worst-performing regions and towards vulnerable or excluded female, young, migrant and long-term unemployed workers. All asserted that without such targeting, digital technologies might lead to an unintended widening of the digital divide.

One policymaker said that although any policy initiative aimed at addressing digital literacy was heading in the right direction, divergence in working conditions was more likely than convergence. This is because ‘leader’ countries, regions, sectors and companies would improve their market concentration by exploiting new technologies, while ‘laggard’ countries, regions, sectors and companies would not. Moreover, this policymaker noted that while leading-edge companies may benefit from being at the forefront of technology, there was no guarantee that they would share the wealth generated with their workers. Hence, divergence in working conditions could occur even in frontrunner countries and companies. In this respect, one expert noted that any deterioration in working conditions should be seen

not as purely a function of technology but rather as a strategic choice that employers make at the point when new technology is introduced. That is, opportunity exists for technology to contribute to improving or worsening working conditions, with employers playing an important role in shaping the outcome.

While there is evidence to suggest a degree of optimism about the ability of the EU’s Digital Single Market strategy in delivering upward convergence in working conditions across the EU, several barriers are currently hampering its effectiveness. These include a lack of reliable EU labour market forecasting tools, ineffective targeting of EU funds, a lack of coordination and weak consultation among the key stakeholders and social partners at both sectoral and regional levels, and problems relating to the implementation of the strategy by Member States.

In summary, both the impact of digitalisation on upward convergence in working conditions in the EU and the effectiveness of the Digital Single Market strategy will depend on a number of factors beyond the current strategy.

## Lessons from the policy analysis

EU labour markets are undergoing continual and rapid changes. As set out in Chapter 4, there exist several drivers that can either help or hinder the convergence process. The growth of non-standard employment and the introduction of new technologies are among the factors that can jeopardise EU efforts to promote upward convergence in working conditions. This in-depth analysis of two policy initiatives reveals that both could lead to a reduction in disparities between Member States. However, while these policies are therefore important, they are not on their own sufficient. Neither policy will necessarily or automatically translate political aspirations into improved working conditions.

The expert interview data highlight the importance of targeted public investment in education, training and labour market policies. The role played by the social partners, through social dialogue, particularly at the sectoral level, is crucial in promoting upward convergence in working conditions. At the national level, experts saw the role of labour market institutions and education and training providers as critical in helping workers and businesses alike to adjust to economic and technological developments. In general, experts seemed to welcome EU-level policy interventions centred on improving working conditions.

However, it will not be possible to ‘block off the low road’ – whether in terms of reducing the use of non-standard employment or addressing the lack of investment in the right digital (and other) skills – without adequate and targeted EU resourcing, and effective monitoring, measurement and enforcement.

While there is an important role for agenda-setting and awareness-raising at EU level, the onus for implementation and enforcement largely rests with individual Member States. Consequently, delivery of upward convergence of working conditions through these two policies will be a challenge.

## 6 Conclusions

This report sets out new empirical evidence on whether there has been upward convergence of working conditions in the EU over the past two decades. The study also examines whether gender gaps in working conditions are converging and narrowing in the EU. It goes on to explore which factors and policy instruments might help to foster such upward convergence. Finally, the report presents an analysis of the potential for two EU policy instruments to address disparities in working conditions across the Member States and promote upward convergence. The findings of this report contribute to the evidence base informing a more targeted policy approach to improving working conditions and job quality in the EU.

### Is there upward convergence?

Three types of convergence – beta-, sigma- and delta-convergence – were analysed to assess whether upward convergence in working conditions in EU countries has occurred since 1995. Seven dimensions of working conditions were examined: Physical environment, Work intensity, Working time quality, Social environment, Skills and discretion, Prospects and Earnings.

Results from the most commonly applied approach – beta-convergence – found weak upward convergence in working conditions for the EU as a whole over 1995–2015 in all dimensions except for Prospects. In that dimension, downward convergence was found, signifying that while Member States are becoming more similar, their performance in that dimension has declined. A number of Member States did not show improvement in working conditions during that period, although most of these (many of which already had comparatively good working conditions) showed stagnation or very small increases in the different dimensions rather than major declines. A general trend of upward beta-convergence was also found at the

subdimension level. However, these findings need to be considered in the context of a relatively high level of variance across the different subdimensions.

The second approach – sigma-convergence – provided a more nuanced picture. In four of the seven dimensions (Work intensity, Skills and discretion, Prospects and Earnings), divergence in working conditions across the Member States was evident. In three, this divergence occurred in a context of an overall improvement of EU average working conditions, while overall deterioration of the EU average was found in the case of Prospects.

The delta-convergence analysis revealed a variety of patterns. The only dimension showing clear convergence was Working time quality; in addition, the differences among the EU countries were lowest on this dimension. Prospects and Physical environment also showed a delta-convergence pattern, although less marked, and for Physical environment convergence was not consistent across the whole period, with divergence after the economic crisis in 2010. Conversely, there was a clear pattern of divergence in Earnings, although it slowed after the economic crisis.

Table 17 summarises the results for the three measures of convergence by dimension of working conditions. The difference in findings between beta-convergence and sigma-convergence is unsurprising because these two approaches measure different aspects of convergence: beta-convergence focuses on the catch-up of poorer-performing Member States with Member States with better levels of working conditions, and sigma-convergence focuses on the reduction of dispersion of working conditions across Member States. In addition, methodological constraints meant that the sigma-convergence analysis was restricted to a shorter time period.

**Table 17: Measurement of convergence – headline results by dimension**

	Beta-convergence	Sigma-convergence	Delta-convergence
Physical environment	Weak upward convergence	Weak upward convergence	Convergence
Social environment	Weak upward convergence	Weak upward convergence	Divergence
Work intensity	Weak upward convergence	Weak upward divergence	Divergence
Skills and discretion	Weak upward convergence	Weak upward divergence	Divergence
Working time quality	Weak upward convergence	Weak upward convergence	Convergence
Prospects	Weak downward convergence	Weak downward divergence	Convergence
Earnings	Weak upward convergence	Strict upward divergence	Divergence

## Convergence clubs

In terms of convergence clubs, no major differences were uncovered in the dynamics of convergence between different groups of countries or in comparison to the EU as a whole. However, the approach adopted for this study makes it difficult to compare this finding to that of Eurofound (2009), which showed the post-2004 Member States closing the gap on the EU15 prior to the Great Recession.

## Convergence in gender gaps

An extension of the analysis to investigate gender gaps in working conditions, including non-wage measures of job quality, showed that one sex fares better than the other depending on the dimension. Women experienced better conditions than men for Physical environment and Work intensity, while men enjoyed better conditions than women for Earnings and Social environment. In the other three dimensions, differences between the sexes were small. The gender analysis also found convergence towards more similar working conditions between men and women alongside improving values in all dimensions with the exception of Physical environment and Prospects, where downward convergence was found. Downward convergence signifies a widening of the gap – which in both dimensions favours women – alongside increasing similarity of Member States on these measures.

## Comparing results with previous research

Given that different methodologies were used, as well as different sets of countries and different time periods, it is problematic to compare the findings from this research with previous Eurofound research undertaken in this area. What we can say is that upward convergence in working conditions across the board in the EU has not featured in any earlier Eurofound research either. Most obviously, Eurofound (2015a) found no clear pattern of convergence or divergence, while using a different methodology. However, despite the use of different methodologies, there are some recurring themes between the current study and previous Eurofound research. For example, Eurofound (2017a) identified poor prospects as a particular problem for part-time workers. This continues to be a problem, although it now seems to be a wider issue, with the Prospects dimension in this study showing weak downward convergence across the EU for workers generally. Similarly, there remain differences in working conditions by gender, though there is no strict pattern of men experiencing better working conditions for all dimensions of job quality (cf. Eurofound, 2018c). Likewise, the slow but positive trend in health and safety identified recently in Eurofound (2019a) is confirmed in this study, which showed weak upward convergence for Physical environment.

## What drives convergence?

A further part of the study explored factors potentially accelerating or decelerating convergence, in particular the processes of upward convergence that cause poorer-performing Member States to catch up with better-performing ones. Bearing in mind methodological caveats, the analysis suggested that globalisation and labour market institutions have a role to play in promoting convergence in working conditions. Additional theorising and research are required to better understand the complex interplay between the various possible drivers (cf. Eurofound, 2015a).

Convergence is not a single-country process but a joint process observed for a specified set of countries. In this respect, it is not a strictly economic phenomenon. Thus, it is difficult to identify clear determinants of convergence, particularly in the case of the EU, where countries share a common institutional environment along with a layer of policy development over and above the national level of policymaking.

## What impact could policy have?

Connected to the previous point about supranational policy, the third part of the study examined the potential of two EU policy initiatives to foster upward convergence in working conditions: the Directive on Transparent and Predictable Working Conditions and the Digital Single Market strategy. Interviews with experts in the field provided the core data of this analysis.

The first policy option, the directive, was generally welcomed, or at least seen as necessary given the scale and significance of changes in EU labour markets since its predecessor, the Written Statement Directive, was adopted in 1991. While the experts supported the purpose of the revised directive, its usefulness was seen as highly contingent upon effective implementation, monitoring and enforcement. In this respect, the experts emphasised the importance of involving the social partners in raising the standards of working conditions and helping to monitor and enforce the new directive.

For the second policy option, the Digital Single Market strategy, the experts expressed cautious optimism about its ability to deliver upward convergence in working conditions. While they felt that digital literacy in the EU labour force at all levels is critical, they shared the view that addressing digital skills would be best accomplished via a broad-based skills policy in conjunction with targeted investment in those regions and for those workers most at risk of digital exclusion. The experts identified a number of barriers that are hampering the effectiveness of the Digital Single Market strategy, including a lack of reliable EU labour market forecasting tools.

Overall, the analysis of two policy initiatives highlighted that EU-level policy interventions centred on improving job quality are judged positively. However, it will not be possible to ‘block off the low road’ without adequate and targeted EU resourcing, as well as effective enforcement. At present, while there is an important role for awareness-raising at the EU level, the onus for implementation and enforcement largely rests with individual Member States.

## Lessons for policymakers

Instruments are needed to translate policy aspirations into workplace practice. Given the range of measures used to analyse convergence of working conditions in the EU, identifying clear, consistent policy pointers is a challenge. Nevertheless, the findings suggest several lessons for policymakers. These can be separated into measures to support the upward convergence of working conditions in the EU and those that focus on improving the quality of existing measurement and data.

### Measures to support upward convergence

**Labour market institutions continue to matter.** While multiple factors influence convergence – such as globalisation and technology – labour market institutions continue to be an important factor in the EU context. EU policy implementation is the responsibility of Member States, and their national labour market institutions vary, as do their governments’ policies and priorities (see Fernández-Macías and Hurley, 2017). Given that the catch-up process in working conditions has been faster in some Member States than in others, better policy coordination between Member States and the European Commission would support upward convergence in this area. The European Commission should undertake a review of Member States’ national policy and support measures as they pertain to EU policy aspirations for the different aspects of working conditions in order to identify effective translation into good practice at organisational level.

**A focus on gender remains important.** No consistent pattern of gender gaps in the dimensions of working conditions exists across the EU, and they vary across countries and sectors. Differences in working conditions by gender persist, with one sex experiencing better working conditions than the other in each dimension. However, gender gaps in working conditions are decreasing generally in the EU, although not across all Member States. Targeting the poorer-performing countries would help those countries to close gender gaps and raise the overall performance of the EU. In this respect, one notable dimension in which the gap between women and men has increased is Prospects, which encompasses job security and opportunities for career progression. It might be that, as women are often

in part-time employment, their advancement as well as their training and development opportunities are diminished. In this context, ensuring digital literacy should be a minimum baseline requirement for female workers.

**The lack of progress in the area of job security and career advancement is a concern.** While improvements in the different dimensions vary across the Member States, the Prospects dimension is a problem across the EU, regardless of method of measurement. The three subdimensions – career prospects, job security and employment status – have all come under pressure from the Great Recession and heightened unemployment. Non-standard employment, including that arising from new forms of working such as platform work, compounds problems in this dimension, reducing opportunities for progress in internal labour markets and within organisations. As the EU economy recovers, the impact of non-standard employment on job prospects requires increased attention and action if workers are to feel the benefits of economic growth.

**Formal recognition of workers’ skills should be strengthened.** The study found the performance of Member States to be mixed in terms of skills. The ability of workers to demonstrate that they possess digital and other skills is important for their prospects – and Prospects is the dimension that gives most concern in our study. As the policy analysis highlighted, skills can be acquired in various ways, including learning on the job. However, because many workers can have multiple, often temporary, employers, this on-the-job learning usually goes unrecognised. Providing a means for accreditation of digital skills literacy and other skills acquired at work would enhance the job prospects of workers. One option is to introduce skills passports for individuals to record all their work-based learning, training and skills acquisition throughout the course of their working life.

**Policy must avoid exacerbating the digital divide.** There is a widening divide between Member States that embraced new digital technologies early and those that are trailing technologically. A parallel divide is opening up in the labour force between workers with digital skills and those without. EU initiatives on the digital market need to be designed so as not to exacerbate these divides. EU investment in digital strategy needs to target areas where there is most need and where it will have the greatest impact, such as the worst-performing countries and regions, and vulnerable or excluded workers.

**Monitoring and enforcement of policy aspirations is necessary.** If upward convergence of working conditions is to be achieved, sufficient resources need to be available within Member States to monitor and enforce policy implementation and workplace practices. Part of the monitoring process requires good

data collection at national level, instigated by the European Commission and undertaken at regular intervals. The form or method of monitoring and enforcement needs to be considered by the European Commission in conjunction with its Member States. This study also suggests that if Member State resource provision is unfeasible, the remit of the new European Labour Authority might be broadened to encompass all work within the EU.

**Social partnership can help support upward convergence of working conditions.** The policy analysis revealed a strong preference for a social partnership approach to delivering upward convergence, whether in supporting the delivery, monitoring or evaluation of particular policy instruments or supporting broader policy aspirations around skills and employment rights. Because it is received positively and is seemingly effective, the European Commission should encourage this approach in its efforts to promote upward convergence. However, it is important to note that trade unions aim to create and maintain a membership premium, that is, a divergence of members' working conditions from those of non-unionised workers, companies and sectors. Unionisation is thus a double-edged sword for policymakers: on the one hand, it may create divergence in the working conditions of unionised and non-unionised workers; on the other, more unionisation is likely to lead to improvements in working conditions. Because of the latter possibility, collective bargaining involving unions as social partners is already encouraged by the OECD (2018).

**The public sector should be a lever and a model employer.** Through regulation and incentives, the public sector has a role to play in determining working conditions outside public employment, in the private and voluntary sectors. The public sector is a major employer within Member States and an employer of note across the EU. Significantly, employment in the public sector tends to provide better job quality (Eurofound, 2013). In this respect, the public sector can act as a model employer, by further improving working conditions for its employees and by showing other organisations what is feasible and desirable, especially in relation to non-standard employment, for example. Further research could establish current working conditions within the EU public sector, use that evidence base to establish minimum standards for public employment, and thus identify poor working practices that need to be reversed.

**Awareness of the benefits of improving working conditions among employers should be raised.** A body of research is now emerging that positively links working conditions to critical issues for companies, such as productivity, innovation, employee recruitment and retention, and job satisfaction (see Skills Australia, 2012; Mathieu et al, 2018; Warhurst et al, forthcoming).

However, there is little evidence that this research features in management education. Knowledge of the organisational benefits of improving working conditions needs to be developed at senior management level. This knowledge could be diffused through management training curricula, particularly in business schools, both for existing managers, through MBA and continuous professional development programmes, and next-generation managers, through graduate and postgraduate teaching. As a first step, the European Commission might initiate a review of leading EU business schools' pedagogy in this respect, working in partnership with key stakeholders, such as BusinessEurope, the European Trade Union Confederation and EQUIS-EFMD.

### Measures to improve measurement and data quality

**A streamlined set of measures to analyse convergence in working conditions is required.** Examining 7 dimensions of working conditions with a total of 21 subdimensions makes analysis complex. This complexity is compounded where multiple measures of convergence are used, potentially producing contradictory findings, as this study shows. Eurofound (2018b) recognises that there is, as yet, no theoretically informed (with respect to non-economic aspects of working conditions) and clearly delimited concept of convergence. A streamlined set of measures would contribute to research in this area in terms of both undertaking the analysis and reporting the findings.

**Policy and scientific consensus on which working conditions to measure must be established.** Eurofound (2012) developed an initial set of measures and applied it to early assessment of job quality trends in Europe. Eurofound (2014) subsequently highlighted the limitations of that proposal and suggested that further development was required. The measures were revised in Eurofound (2017b) and used in the current study. However, there remains no international policy or scientific consensus on what measures of job quality should be used. Given the importance of workers' voice and representation in supporting convergence, as identified in this study, any further development of measures ought to seriously consider this for inclusion as a dimension. That possibility could be realised through the measures of job quality developed initially by Muñoz de Bustillo, Fernández-Macías, Esteve et al (2011) and Muñoz de Bustillo, Fernández-Macías, Antón et al (2011) and consolidated in Warhurst et al (2017). These are based on reviews that, first, identify measures common across the body of multidisciplinary research in the field and, second, align with the latest EWCS contents, with retrospective analysis possible using past EWCS and other data.

**Longitudinal data that is consistent over time is required.** Convergence in working conditions can take many years, and plotting it requires consistency in dataset contents. While the EWCS is the key dataset for measuring job quality and working conditions in the EU, its contents have not been consistent over time. Maintaining the EWCS and its current contents is important. Other data needed to measure the development of working conditions in the EU are fragmented across a number of datasets, each with different coverage. Developing a coherent dataset that is fit for measuring EU working conditions and that provides data consistently over time – preferably based on either consolidating or modifying existing datasets – has to be a key future task. If, for policy imperatives, more frequent analysis is required than can be provided based primarily on the EWCS, a module might be administered through the EU-LFS (Warhurst et al, 2018).

**Data should be used to benchmark progress towards upward convergence.** At present, while upward convergence is an EU political aspiration, it is not translated into practical targets for countries and sectors. As this study shows, there is a desire among stakeholders for progress in upward convergence to be evaluated through data analysis and then converted into benchmarks to which countries and sectors can aspire. As there are different types of measurement, different findings about progress can emerge. Again, a single, streamlined set of measures that simplifies the analysis and then easily communicates benchmarks could be established. The reporting of those benchmarks would then be simplified for, and disseminated to, business practitioners.



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Social convergence has gained an equal footing alongside economic convergence as an EU goal in the wake of the economic crisis. This report presents the results of a study into convergence in working conditions, a major component of social policymaking. It examines whether working conditions have improved over the past two decades in the EU as a whole and whether dissimilarities between Member States in this area have narrowed. The study includes analyses of both the trends and drivers of convergence plus expert interview data on two policy instruments that have the potential to promote convergence. Findings indicate upward convergence in working conditions overall, but uneven progress across Member States.

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