



Convergence and divergence of job quality in Europe 1995–2010

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Convergence and divergence of job quality in Europe 1995–2010





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A report based on the European Working Conditions Survey

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Contents

Executive summary	1
Introduction	5
1. Research methodology	11
2. Convergence and divergence of job quality	17
3. Institutional and macroeconomic determinants	35
4. Sectoral changes in job quality	45
5. Work and organisational characteristics	51
6. Employee characteristics: Gender and age	61
7. Overview and policy implications	67
Bibliography	77

Country codes EU27

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

Note: Croatia joined the EU in 2013, after the date of this survey.

Country groupings

EU15 (Member States prior to 2004)

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the United Kingdom

NMS (Member States that joined between 2004 and 2007)

Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Lithuania, Latvia, Malta, Poland, Romania, Slovakia and Slovenia

Executive summary

Policy context

Improving and harmonising working conditions are core objectives of the European Union. For example, Article 151 of the Treaty on the Functioning of the European Union (TFEU) declares that the Union and Member States ‘shall have as their objectives the promotion of employment, improved living and working conditions, so as to make possible their harmonisation while the improvement is being maintained...’. In addition, a range of policy initiatives support the development of job quality. Many factors affect job quality and their impact may vary between countries, occupations or sectors. As a result, changes in job quality across Europe may be faster in some countries and slower in others, causing job quality to diverge or converge between countries.

Divergence will occur when varying rates of change exacerbate differences in job quality, whereas convergence occurs when different rates of change decrease differences. The analysis of convergence and divergence in job quality is therefore an important exercise. It can provide key insights into trends in job quality across Europe, indicate whether changes in job quality are benefiting some groups more than others and point to the factors driving these changes. It can also provide some assessment of whether European policy objectives are being achieved.

The aim of this report is to examine the convergence and divergence of job quality across the EU from 1995 to 2010. By examining the statistical significance of trends in key dimensions of job quality and by mapping the patterns of convergence and divergence in job quality, this report provides an up-to-date analysis of changes in job quality across the EU, providing new insights to inform policy making.

Key findings

Four key aspects of job quality were examined: skills and discretion (including job discretion, cognitive demand and training); work risks (environmental risks, physical demands); work intensity (workload, task interdependence); and working time quality.

Assessing developments across Europe involved first examining the general direction of change in job quality and then analysing trends in convergence and divergence.

Trends in job quality across the EU

Between 1995 and 2010, across the EU15, statistically significant upward trends occurred in training and working time quality.

Declining levels of job quality were found across key components of work organisation. These included downward trends in job discretion and cognitive demand, and the growth of physical demands and workload. This suggests a trend towards simpler and more intense forms of work organisation.

Convergence and divergence between EU countries

There was no clear pattern of convergence or divergence across all aspects of job quality: between 1995 and 2010, neither harmonisation nor polarisation has been a general feature of job quality across the EU15.

Convergence: Convergence in specific components of job quality occurred between countries. Training and working time quality converged across the EU15 as a result of faster increases in countries with lower levels of training and working time quality. This pattern of change can be described as ‘harmonised improvement’. Workload also converged across the EU15 as a result of faster increases in countries with lower levels of workload. This pattern can be described as ‘harmonised decline’.

Polarisation: Specific instances of polarisation were found in countries with already higher levels of job discretion and cognitive demand (for instance, Denmark) that consolidated their position by diverging upwards, away from many other countries with lower levels of job discretion and cognitive demand.

Expanding the analysis to the EU27, similar results were found with regard to work risks, work intensity and working time quality. The main differences were for skills and discretion. For job discretion, unlike in the EU15, there was no overall growth or decline and more evidence of polarisation, while for cognitive demand there was evidence of significant growth and no clear pattern of convergence or divergence.

Reasons for divergence and convergence

Institutional characteristics: Job discretion diverged between countries over the period partly as a result of slower declines in countries with high union density. Likewise, cognitive demand diverged between countries due to slower declines in countries with higher levels of wage coordination and stricter employment protection legislation. Work risks converged between countries due to faster increases in countries with higher levels of wage coordination and stricter employment protection legislation.

Institutional regimes: The institutional regimes of Nordic countries appear to protect the quality of job discretion and cognitive demand, as a decline in these job quality dimensions was evident in other country groupings. The institutional regimes of North-West countries (such as the UK) appear to slow the increase in work risks and workload.

Occupation: For low-skilled clerical workers, job discretion and cognitive demand declined at a faster rate, and training increased at a slower rate compared to other occupational groups. This led to convergence with low-skilled manual workers for these components of job quality. For high-skilled manual workers, environmental risks increased at a faster rate, leading to greater divergence from other occupational groups.

Computer use: Jobs with low levels of computer use are associated with faster declines in job discretion and faster increases in workload.

Macroeconomic and sectoral factors: Factors such as gross domestic product (GDP) and unemployment had little observed effect on the divergence or convergence of job quality. Workload was the only aspect affected by macroeconomic factors. Specifically, workload diverged between countries due to faster increases in workload in countries with high unemployment.

Individual characteristics: Employee gender and age had a limited effect on the convergence and divergence of job quality. Physical demands and workload, however, grew at a significantly faster rate for men, meaning that the level of physical demands and workload has diverged between men and women.

Policy pointers

Dedicated political effort is required if job quality is to continue to improve: it does not appear to follow automatically from economic development, technological advancement or sectoral change.

Importance of national institutions: National institutional structures may help to produce and sustain a certain level of job quality; as EU country examples show, policies that support institutions such as trade unions, collective bargaining structures or employment protection legislation can contribute to improve job quality.

Role of formal policies: Improvements and positive convergence were found in those areas more subject to formal policies and collective bargaining at the local, national and European level, such as training and working time quality.

Good practices have not spread widely: Declines and polarisation in job discretion and cognitive demand indicate that good practices in work organisation (for instance, those in Nordic countries) may not have spread across countries to a large extent, possibly because broader institutional support is needed for their successful and widespread implementation.

Place for two-tier approach: Most declines in job quality occurred in areas that are largely the prerogative of companies and are harder to formalise in government policy, such as work organisation. A two-tiered approach is needed: circulating knowledge and good practices, combined with supportive employment policies.

Range of policies required: A range of policies to improve job quality needs to be integrated to reflect the interrelated nature of job quality. Investment in skills may prove ineffective if the form of work organisation implemented does not use them, whereas increasing workloads may undermine improvements in health and safety.

‘Hard’ and ‘soft’ interventions needed: Policy interventions in the institutionally varied contexts of Europe should combine ‘hard’ and ‘soft’ modes of intervention: regulation and its enforcement in areas such as health and safety; formalised monitoring; target-setting; institutionalised mutual learning; and incentives and showcases for the development of good practices.

Introduction

The improvement and harmonisation of working conditions have been core objectives of the EU since the inception of the EU and are stated in Article 151 of the Treaty on the Functioning of the European Union (TFEU). To advance towards these objectives, a range of policy initiatives have focused on job quality (that is, the working and employment-related conditions that can have beneficial effects) such as the European Employment Strategy, the Lisbon Strategy, the European Commission's Social Policy Agenda 2006–2010, and more recently the European Commission's EU2020 agenda for smart, sustainable and inclusive growth (European Commission, 2001; 2010b). These policy initiatives both recognise the profound effects that job quality can have on employee well-being and underline the effects that job quality can have on individual and organisational productivity. For example, in the 2010 Communication *An agenda for new skills and jobs* (European Commission, 2010a, p. 2), the European Commission asserts that job quality is associated with increased productivity and competitiveness. Furthermore, the Agenda points out that 'there is no trade-off between quality and quantity of employment: high levels of job quality in the EU are associated with equally high labour productivity and employment participation' and that 'the working environment plays a crucial role in enhancing the potential of the workforce and is a leading competitiveness factor' (p. 14).

The EU policy agenda to improve working conditions and job quality has been backed by various initiatives and directives in which the right to various employment standards and conditions is recognised. These include Directive 89/391 on workplace health and safety (Council of the European Union, 1989); the Working Time Directive (Council of the European Union, 2003); the Transfer of Undertaking Directive (Council of the European Union, 2001); and the Charter of Fundamental Rights of the European Union (European Commission, 2012). Initiatives to improve job quality have also been undertaken by transnational bodies (such as the ILO), individual nations, employer organisations, trade union organisations, as well as individual managers and employees. Improvements in job quality may also be underpinned by economic and labour market features, such as rising levels of education, sectoral shifts and high growth rates. On the other hand, over the last 20 years, opposing forces have acted as downward pressures on job quality. Among them are increasing globalisation and market liberalisation that have pressured businesses to standardise work processes and seek out cheaper labour (Eurofound, 2012a), and new forms of work and technology. Furthermore, since 2008, organisational responses to the financial economic crisis and ensuing government austerity policies have brought the tensions of economic and structural change and improved job quality into sharp focus again.

Research approach

The various influences on job quality raise important questions as to whether job quality is on an upward or downward trend in Europe and whether the influences on job quality are similar across Europe. For example, national trade unions vary in their ability to address pressures on job quality, while the effects of liberalisation vary according to national market conditions and institutional regimes. As a result of such variations, job quality may change at different rates in EU countries. If this exacerbates existing differences, then job quality across EU countries will diverge. If this reduces existing differences, then job quality across the EU will converge – that is, harmonise (Katz and Darbishire, 2000). Mapping and analysing this convergence and divergence across EU countries can therefore provide insight into a number of aspects of job quality. These comprise the following:

- the general trends in job quality across the EU;
- patterns of change in job quality across the EU – for example, is job quality converging towards a lower level (a race towards the bottom) or towards a higher level (benefits for all)?
- EU countries that are faring better in terms of improvements in job quality;
- the reasons why job quality is changing in the EU: convergence between countries might indicate a reduction in the influence of national institutions on job quality, whereas divergence or sustained national differences in job quality might indicate that national institutions continue to play a role in shaping job quality.

Numerous studies have examined general trends in job quality and the extent of convergence and divergence in EU countries, providing important insights into changes in job quality across Europe (Eurofound, 2012a, 2012b; Gallie, 2013; Green, 2006, Greenan et al, 2013; Kalleberg, 2011; Katz and Darbishire, 2000; Olsen et al, 2010) using various indicators.¹ This report builds on this work by using data from the European Working Conditions Survey (EWCS) to provide an up-to date analysis of the statistical significance of trends in key dimensions of job quality. Specifically, the first aim of this report is to provide a detailed examination of convergence and divergence in job quality across EU countries from 1995 to 2010.

In addition to charting how job quality is converging or diverging across Europe, it is also important to understand what factors influence this convergence or divergence. A broad conclusion from existing research is that changes in job quality are shaped by factors at different levels of analysis, from the macro level to the individual level (Esser and Olsen, 2012; Findlay et al, 2013; Green, 2006; Kalleberg, 2011). Relevant macro-level factors include economic growth and unemployment, and national factors include institutional characteristics such as trade union power and employment protection legislation. Intermediate-level factors include industrial sector and type of work, while relevant individual factors include characteristics of the employee, such as gender and age. To enhance understanding of the reasons why job quality is changing across the EU, the second aim of this report is to examine the factors – individual, work, organisational, institutional and macroeconomic – shaping the convergence and divergence of job quality.

Defining job quality

Job quality can be defined using an objectivist or subjectivist approach (Green, 2006). An objectivist approach assumes that real features of the job are the primary cause of employee experiences, such that job quality is ‘the extent to which a job has work and employment-related factors that foster beneficial outcomes for the employee, particularly psychological well-being, physical well-being and positive attitudes such as job satisfaction’ (Holman, 2013, p. 476). An subjectivist approach, by contrast, defines job quality as the extent to which employees perceive the job has fulfilled their personal preferences.

An objectivist approach to job quality is taken in this report, as research shows that objective working conditions play a key role in shaping employee experiences and that objective working conditions shape employee experiences over and above the fulfilment of preferences (Green, 2006; Humphrey et al, 2007; Parker and Wall, 1999). This approach is consistent with the principle assumed across a number of European directives that ‘work should adapt to workers’.

Job quality has several core components, although there has been a debate as to the exact number and content of these components (Bustillo et al, 2011; Eurofound, 2007a; Green, 2006; Grimshaw and Lehdorff, 2010; Holman and McClelland, 2011; Tangian, 2007). A model adopted in several previous Eurofound reports is that proposed by Green (Eurofound, 2012a). This model has four main components: earnings; prospects (that is, job security or opportunity for advancement); working time quality; and intrinsic job quality. This last component has four sub-components: skill use and discretion; social environment; physical and environmental risks; work intensity. This model is adopted for the current study because it includes many of the main relevant work and employment-related conditions of a job, and the use of it ensures consistency with other Eurofound research. Empirical evidence also shows that each component impacts on employee well-being and attitudes, and can therefore be classed as an indicator of job quality.

¹ See, for instance, the set of indicators used by the EU’s Employment Committee in its work on job quality available in Annex 1 of the report *Employment and social developments in Europe 2014* (European Commission, 2014).

Developing measures to assess job quality in Europe

The EWCS provides the best available data for examining job quality in Europe due to the breadth and depth of job quality components assessed over time. In particular, the EWCS enables four key aspects of job quality to be measured, over five periods, from 1995 to 2010 in the EU15, as well as from 2000 to 2010 for the EU27 when the new Member States (with the exception of Croatia) were first included in the EWCS survey.

Four aspects of job quality are considered in the EWCS.²

Skills and discretion: High-quality jobs provide training and cognitively demanding tasks (that is, tasks requiring problem solving and learning new things) and so enable employees to use and develop skills. High-quality jobs also allow the employee discretion over how to perform work tasks. The highest-quality jobs often combine high levels of skills development with high levels of job discretion.

Work risks: Environmental risks include vibrations, noise, and high temperature, while physical demands involve tiring positions, moving people, and lifting heavy loads. High-quality jobs carry low work risks.

Work intensity: High workloads involve completing many tasks quickly, while task interdependence can be particularly demanding as it means that job tasks are dependent on other people, machines or targets. High-quality jobs tend to be less intense, with lower workloads and lower task interdependencies.

Working time quality: High-quality jobs tend to involve working at more standard hours (that is, not working in the evening, at night or at the weekend) and do not involve working excessive hours.

One of the main limitations of this report is that it cannot cover all the main components of job quality in equal depth. While, ideally, more components of job quality would be assessed, this is not possible due to the restricted coverage of the EWCS. The aspects of job quality measured in this report cover two of the core components of job quality specified in Green's model – intrinsic job quality and working time quality. The coverage of intrinsic job quality includes skills and discretion, work risks and work intensity but not the social environment.

National differences

National differences in job quality have been a predominant feature of working life in Europe over the last 50 years and there is discussion about whether these national differences will converge or diverge (Gooderham and Brewster, 2008).

Factors of convergence

Market-based arguments: Market-based arguments for greater convergence assert that there is an optimum way of organising labour to meet the market challenges brought about by globalisation and market liberalisation, and that managers adopt this one best way in pursuit of organisational efficiency (Williamson, 1985). A similar argument is that managers respond to greater market liberalisation by seeking to model their organisation's working practices on those perceived to be successful in liberalised market economies such as the US or UK (DiMaggio and Powell, 1983; Kerr et al, 1960). As markets converge or globalise, managerial responses to contemporary market challenges should therefore result in greater similarity in job quality across nations.

² The four aspects of job quality assessed in this report are based on those used in the Eurofound report *Trends in job quality in Europe* (Eurofound, 2012a), although there are some differences that are detailed in Chapter 1.

Role of non-market factors: Arguments for convergence also point to the role of non-market factors. One perspective is that convergence will occur as a result of diminishing differences between national institutions such as trade unions or welfare systems (Marginson and Sisson, 2002; Rubery et al, 2008; van Vliet, 2010). For instance, if the ability of national trade unions to influence organisational practice becomes similar across countries, cross-national differences in job quality should diminish.

Role of supranational institutions: Another possibility is that supranational institutions, such as the EU, promote (upward) convergence by harmonising regulations on employment conditions. One example is the Working Time Directive, which might have a stronger positive effect in those countries where working time quality is more problematic.

Factors of divergence

Existing national differences: Arguments for divergence assert that existing national differences in job quality will either remain or increase. One of the main arguments for divergence proposes that national institutions shape managerial and governmental decisions about, for example, which work and employment practices to use in response to global and local market challenges.

Cross-national institutional variation: Despite some evidence of greater institutional similarity across Europe, such variation still occurs. It should therefore imply national differences in work and employment practices and should act to maintain or widen differences in job quality (Marginson and Sisson, 2002; Rubery et al, 2008; van Vliet, 2010).










Key differences between European economies: A further argument for divergence is that European economies have many important differences (such as gender participation rates, sector size, vocational and education systems, and childcare facilities) with the most appropriate ways of organising labour depending on the national context of an organisation. Managers may also prefer to model organisational practices on examples that have been shown to work in their national context because they are viewed as less risky to implement than examples of successful practice from other countries.

Plotting patterns of change

Closely allied to the convergence-divergence debate but logically distinct is the discussion on whether job quality is on an upward or downward trend. Some assert that globalisation and market liberalisation are encouraging European companies to compete by cutting wages and implementing low cost and low quality work and employment practices (Standing, 2011; Thompson, 2013). In contrast, more positive views emphasise factors thought to improve job quality, such as the role of the EU in promoting better job quality through various directives, or the role of information technology in promoting more highly skilled work and better working conditions (Handel, 2005).

By combining these different positions on job quality in Europe (that is, converging or diverging, increasing or declining), various patterns of change in job quality across Europe can be hypothesised. These various patterns are set out in Table 1. For example, a pattern of change in job quality characterised by converging improvements would result from general increases across all countries but with larger gains occurring in countries with lower levels of job quality. This change pattern has been labelled as ‘harmonised improvement’. In contrast, a pattern of change characterised by diverging declines would result from decreases across all countries with the largest drops occurring in countries with lower levels of job quality. This change pattern has been labelled ‘polarised decline’.

Table 1: Patterns of convergence and divergence in job quality

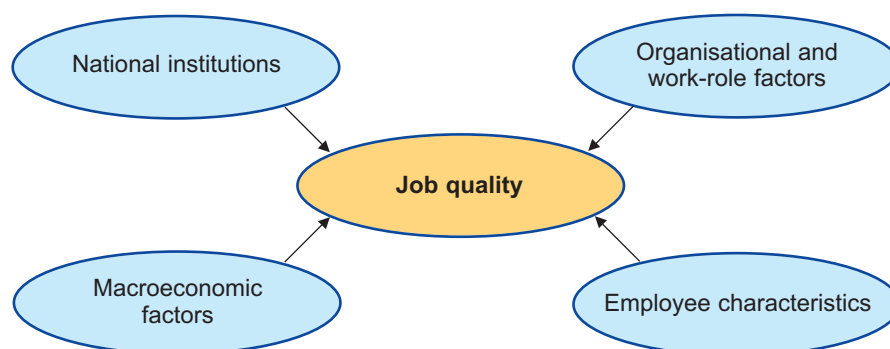
	Convergence	No differences	Divergence
General improvement	 <i>Harmonised improvement</i> Differential rates of improvement in most groups, faster growth at bottom	 <i>Even progress</i>	 <i>Polarised improvement</i> Differential rates of improvement in most groups, faster growth at top
No change	 <i>'Pure' harmonisation</i>	 <i>Static</i>	 <i>'Pure' polarisation</i>
General decline	 <i>Harmonised decline</i> Differential rates of decline in most groups, faster decline at top	 <i>Even decline</i>	 <i>Polarised decline</i> Differential rates of decline in most groups, faster decline at bottom

Source: Authors' own analysis

Influential factors

A range of factors are thought to explain job quality trends in each Member State and across Europe (Esser and Olsen, 2012; Findlay et al, 2013; Green, 2006; Kalleberg, 2011). The different factors considered in this report are national macroeconomic factors, national institutions, organisational and work role factors, and employee characteristics (Figure 1). They constitute the conceptual framework used to analyse the influences on the convergence and divergence of job quality across the EU.

Figure 1: Conceptual framework for analysing convergence and divergence of job quality



National institutions

National institutions are seen by many to have a major influence on job quality; research has been guided by institutional theories, such as employment regime theory (Gallie, 2007a) and varieties of capitalism theory (Hall and Soskice, 2001). Central to these theories are typologies of national institutional regimes (that is, configurations of national institutions) and the assumption that cross-national variation in institutional regimes leads to cross-national variation in job quality. Research provides empirical support for these theories and as such there are compelling reasons to examine whether national institutional regimes and specific institutional features (such as employment policies and trade unions) shape the development of job quality across Europe (Gallie, 2007a; Goergen et al, 2009; Holman et al, 2009).

Macroeconomic factors

Macroeconomic factors may also play a role, as theory and empirical evidence indicate that levels of national wealth may affect national levels of job quality. Organisations in richer countries (those with higher GDP) may be able to afford higher rates of pay (Bustillo et al, 2011), offer shorter working hours or provide more training opportunities than countries that are less wealthy (Eurofound, 2012a). Growth and contraction in national wealth can also influence unemployment rates, which may have additional effects on job quality: for example, high unemployment rates may restrict the ability of employees to secure better job and employment conditions or reduce the need for employers to provide attractive working conditions as a means of recruiting and retaining staff (OECD, 2004).

Organisational and work-role factors

The organisational and work-role factors focused on in this report – sector, occupational role and information technology – were selected because they have a strong association with job quality (Eurofound, 2012a, 2013a; Fernández-Macías et al, 2012; Green, 2006; Holman and McClelland, 2011; Kalleberg, 2011). Moreover, each of these factors has experienced significant change in the past 25 years. In particular, the service sector has expanded while agricultural and manufacturing sectors have declined, there has been an increase in the number employed in professional occupations, and the use of information technology has become more widespread and integral to job tasks (Eurofound, 2008a; Oesch and Menes, 2010; Vandekerckhove and Ramioul, 2011a, 2011b).

Employee characteristics

Finally, there have been significant shifts in the proportion of women and older people in the workforce. Numerous studies have shown that these employee characteristics are related to job quality (Eurofound, 2007b, 2008b, 2012a; European Commission, 2006, 2007). The reasons for the impact of these employee characteristics on job quality are diverse and complex. For example, employers may offer certain working conditions to attract women; however, they may be able to offer certain employment conditions (such as lower pay) to some groups of workers (such as women or migrants) considered as having less power on the labour market.

Assessing convergence and divergence

To obtain a correct interpretation of the direction and nature of convergence and divergence in job quality across the EU, it is necessary to adopt a two-step approach: evaluating job quality trends, asking whether job quality is improving or declining; and assessing the extent of convergence and divergence by – for instance – examining whether job quality is becoming more or less similar between countries.

A number of methods have been used to examine convergence and divergence, such as descriptive analyses of trends in job quality and statistical tests of differences in job quality between groups (including countries) or time points – between 1995 and 2005, for instance (Eurofound, 2006; 2009; 2012a; Greenan et al, 2013). While these methods can provide important insights, they do not test whether long-term trends in job quality are statistically significant or provide a statistical test of whether long-term trends indicate greater convergence or divergence. To address these limitations, this report uses latent growth modelling of pseudo-panel data to test the statistical significance of changes in job quality across the EU from 1995 to 2010. This method is also used to statistically test whether job quality has converged or diverged across the EU as a whole from 1995 to 2010 and to compare rates of change between countries to establish whether job quality in a given country is converging or diverging in relation to others. The latent growth modelling procedure is outlined in the next chapter. For the non-technical reader, the main purpose of using this procedure is to assess whether the rate of change (such as growth) in job quality and the divergence and convergence of job quality is statistically significant and not due to chance or random fluctuation.

Research methodology 1

Sample

The data used in this report is drawn from the second, third, fourth and fifth waves of the EWCS conducted from 1995 to 2010. Data for the EU15 is available from 1995 to 2010, while data for the EU27 is available from 2000 to 2010. When examining trends in data, it is desirable to include the maximum number of time points. As such, rates of change in job quality are examined – at several points in time following the EWCS waves – across the EU15 from 1995 to 2010, and from 2000 to 2010 across the EU27. Croatia, the most recent member of the EU, was only included in the EWCS survey in 2005 and so it is not possible to include Croatia in the analysis of trends.

Measures

The following section outlines the measures used in the report to assess job quality.

Job quality

Four aspects of job quality were measured – skills and discretion, work risks, work intensity and working time quality. Apart from working time quality, each aspect was assessed using multiple measures. The items used to construct each of these measures are shown in Table 2. All measures were transformed to have a scale of 0 to 100 to aid comparability.

Skills and discretion: This was assessed using three measures. Skill use and development was evaluated using a measure of cognitive demand, which assessed the extent to which a job requires dealing with complex tasks, and a single item measure on whether training to develop skills has been undertaken. The job discretion measure assessed the extent to which the person has control over how to work and the pace of work. High scores represent high levels of job quality.

Work risks: These were assessed using two measures. An environmental risk measure assessed the extent to which a person is exposed to vibration, noise, extreme temperature and smoke or fumes. A physical demands measure assessed the extent to which the job involves holding tiring positions and lifting heavy loads. High scores represent low levels of job quality.

Work intensity: This was assessed with two measures. A workload measure evaluated the pace of work, and a measure of task interdependence evaluated the extent to which an employee's job was dependent on other people, machines or targets. High scores represent low levels of job quality.

Working time quality: As commonly assumed and used in research, this measure assesses the extent to which a job involves working standard hours (that is, not working in the evening, at night or at the weekend) and does not involve working excessive hours. Working hours were coded so that full-time working hours were scored to be on a par with part-time hours and so that job quality is assumed to decrease as working hours become longer than 38 hours a week. Working hours were coded as follows: a working week of 38 hours or less = 100; between 39 hours and 41 hours = 66; between 42 hours and 48 hours = 33; more than 48 hours = 0. High scores represent high levels of job quality.

These measures are similar to the indices used to examine job trends in the Eurofound (2012a) report;³ evidence for their validity indicates they have a positive association with various measures of physical and psychological well-being.

³ The 'Good Physical Environment' index from the Eurofound report *Trends in job quality in Europe* (Eurofound, 2012a) has been relabelled as 'Work risks' to make the description of trends easier.

Table 2: Items used to construct job quality measures, EWCS

Job quality measure	Item number	Divergence
1. Skills and discretion		
Discretion	Q50.A	Are you able to choose or change your order of tasks?
	Q50.B	Are you able to choose or change your methods of work?
	Q50.C	Are you able to choose or change your speed or rate of work?
Cognitive job demands	Q49.C	Generally, does your main paid job involve solving unforeseen problems on your own?
	Q49.E	Generally, does your main paid job involve complex tasks?
	Q49.F	Generally, does your main paid job involve learning new things?
Training	Q61.A	Over the past 12 months, have you undergone training paid for or provided by your employer or by yourself if self-employed to improve your skills?
2. Work risks		
Environmental risks	Q23.a	Please tell me, using the following scale,* are you exposed at work to vibrations from hand tools, machinery?
	Q23.b	Please tell me, using the same scale, are you exposed at work to noise so loud that you would have to raise your voice to talk to people?
	Q23.c	Please tell me, using the same scale, are you exposed at work to high temperatures which make you perspire even when not working?
	Q23.d	Please tell me, using the same scale, are you exposed at work to low temperatures whether indoors or outdoors?
	Q23.e	Please tell me, using the same scale, are you exposed at work to breathing in smoke, fumes (such as welding or exhaust fumes), powder or dust (such as wood dust or mineral dust) etc?
	Q23.g	Are you exposed at work to handling or being in skin contact with chemical products or substances?
Physical demands	Q24.a	Please tell me, using the same scale,* does your main paid job involve tiring or painful positions?
	Q24.c	Please tell me, using the same scale, does your main paid job involve carrying or moving heavy loads?
	Q24.e	Please tell me, using the same scale, does your main paid job involve repetitive hand or arm movements?
3. Work intensity		
Workload	Q45A	Does your job involve working at very high speed?
	Q45B	Does your job involve working to tight deadlines?
Task interdependence	Q46.A	On the whole, is your pace of work dependent, or not, on the work done by colleagues?
	Q46.B	On the whole, is your pace of work dependent, or not, on direct demands from people such as customers, passengers, pupils, patients, etc?
	Q46.C	On the whole, is your pace of work dependent, or not, on numerical production targets or performance targets?
	Q46.D	On the whole, is your pace of work dependent, or not, on automatic speed of a machine or movement of a product?
	Q46.E	On the whole, is your pace of work dependent, or not, on the direct control of your boss?
4. Working time quality		
Hours worked per week	Q18	How many hours do you usually work per week in your main paid job?
Shifts	Q32	Normally, how many times a month do you work at night, for at least two hours between 22.00 and 05.00?
	Q33	How many times a month do you work in the evening, for at least two hours between 18.00 and 22.00?
	Q34	How many times a month do you work on Sundays?
	Q35	How many times a month do you work on Saturdays?

Note: * scale runs as follows – All of the time; Almost all of the time; Around ¾ of the time; Around half of the time; Around ¼ of the time; Almost never; Never.

Institutional measures

National institutions were measured in two ways. First, the authors sought to assess two national institutional characteristics that, according to employment regime theory, will influence job quality: national employment policy and trade union influence. The two measures used to capture national employment policy were:

- an employment protection legislation measure;
- a welfare expenditure measure.

Employment protection legislation measure: This assessed the costs and procedures involved in dismissing individuals or groups of workers in a country (Venn, 2009). It is measured on a scale from 0 (no protection) to 6 (high protection) with high scores indicating stronger employment protection. The measure represented the mean annual score from 1995 to 2010. Data were sourced from the OECD (2013).

Welfare expenditure measure: This assessed the proportion of national GDP spent on social benefits that are paid to individuals related to unemployment, disability, sickness and health, old age, housing, family and children, and social exclusion (but excluding administration costs). The measure represented the mean annual score from 1995 to 2010. Data were sourced from Eurostat.⁴

The two measures used to capture trade union influence were sourced from the ICTWSS database (2013) on the institutional characteristics of trade unions, wage setting, state intervention and social pacts from 1960 to 2011. The measures are:

- a national wage coordination measure;
- a measure of trade union density.

National wage coordination measure: This assessed the extent to which trade unions and other stakeholders coordinate wage setting. It is measured on a scale from 1 (fragmented bargaining confined to the firm level) to 5 (centralised bargaining). The measure represents the mean annual score from 1995 to 2010.

Measure of trade union density: This is an estimation of the proportion of the working population who are members of a trade union. The measure represents the mean annual score from 1995 to 2010.

The second way in which national institutions were measured was to classify the institutional regime of each country. Based on employment regime theory and other research (Gallie, 2007a; Goergen et al, 2009), five types of institutional regime can be identified:

- Nordic regimes (Denmark, Finland and Sweden);⁵
- Continental regimes (Austria, Belgium, France, Germany, Luxembourg, and the Netherlands);

⁴ The Eurostat measure names were: welfare expenditure (SPBENEFNORROUTE), GDP (PPS_HAB) and unemployment rate (S_ADJ)

⁵ Employment regime theory uses the term social democratic rather than Nordic, and liberal rather than North-West regimes. For consistency with other Eurofound reports, the terms Nordic and North-West are used.

- North-West regimes (Ireland and the UK);
- Southern European regimes (Cyprus, Greece, Italy, Malta, Portugal, Spain);
- Eastern European regimes (Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia).

Macroeconomic factors

National wealth was measured using the mean of the annual GDP (purchasing power standard per inhabitant) from 1995 to 2010. National unemployment was assessed using the mean annual unemployment rate from 1995 to 2010. This data was sourced from Eurostat.

Analytical approach

The analysis has three parts:

- examining trends;
- examining convergence and divergence;
- explaining change over time.

Examining trends

The first part of the analysis examined trends in job quality by assessing the general trend in job quality across the EU (that is, whether job quality is improving or declining in general) and the difference in job quality over several points in time, between 1995 and 2010 for each country (such as whether job quality in Spain is higher in 2010 than it was in 1995).

To evaluate the general trend in job quality, latent growth modelling of pseudo-panel data was used⁶. Latent growth modelling is a statistical procedure that can be used to examine rates of change (such as growth) over three or more time points and specifically whether rates of change are statistically significant. To use latent growth modelling, it was necessary to construct pseudo-panel data sets from EWCS data (Deaton, 1985; Verbeek and Vella, 2005). The construction of pseudo-panel data enables the longitudinal analysis of repeated cross-sectional survey data – such as the EWCS – by forming cohorts around particular characteristics and treating the average score of the cohort as the observation. The main cohorts used in this report are based on country and occupational role, because these criteria made it possible to generate a sufficient sample size, and the cohorts exhibited sufficient variation in job quality over time to detect change.⁷

To assess change over time in job quality for each country, hierarchical linear regression was used to compare the level of job quality at different time points, that is, between 1995 and 2010. Although this technique cannot assess long-term trends, it was used because sample size constraints precluded the use of pseudo-panel analysis to assess trends in specific countries.

⁶ Methods for analysing general trends – significance and convergence/divergence – are discussed in the literature; an alternative use of correlating starting level and trend coefficient (correlation of intercepts and slopes) may also be found.

⁷ When examining trends by gender and age, it was necessary to construct cohorts based on country, gender and age category; when examining trends by sector it was necessary to construct cohorts based on country and sector.

Examining convergence and divergence

The second part of the analysis examined the extent of convergence and divergence in job quality. We examined the general level of convergence or divergence across all EU countries. We also studied the nature of convergence and divergence between specific countries – for instance, whether job quality in Italy is becoming more or less similar to that in Denmark.

To evaluate the general level of convergence and divergence across the EU, latent growth modelling was used to statistically test whether the rate of change is significantly related to the initial mean level of job quality – for instance, whether the rate of change is faster for those with higher initial levels of job quality. When this information is combined with knowledge about the direction of change, it is possible to make inferences about the general nature of convergence or divergence. For example, convergence is indicated if there is upward growth in job quality that is negatively related to the initial mean level of job quality. This is because a negative relationship between growth and initial mean level of job quality signifies that there has been faster rate of growth in job quality for groups with low initial levels of job quality, and/or a slower rate of growth in groups with high initial levels of job quality.

Latent growth modelling was also used to evaluate trends in convergence or divergence between specific countries. This is achieved by testing whether rates of change between countries are statistically different and then by combining this insight with knowledge about the direction of change in each country. For example, divergence in job quality could be concluded if the rates of change in job quality between two countries were statistically significantly different and job quality was increasing in one country and declining in another.

Explaining change over time

The third part of the analysis examined factors influencing the growth and decline of job quality as well as its convergence and divergence. This was achieved by adding factors (that is, explanatory variables) to the LGM procedure. For example, adding gender as an explanatory variable to the statistical model can compare growth rates between men and women. Significantly faster growth in the job quality of women would indicate divergence if women had significantly higher levels of job quality than men. In addition, to assess whether changes in aggregate job quality reflect compositional changes, decomposition analysis is used to break changes in job quality down into within-industry effects or compositional changes in the structure of the economy (industry-shift or between-industry effects).

Cross-tabular analyses were also used to describe means and percentages and to map trends in job quality over time. Appropriate cross-national weights were used when analysing EU15 ('w5_EU15') and EU27 countries ('w5_EU27'). A post-stratification weight was used when conducting country-level analyses ('w4').

Structure of the findings

Chapter 2 examines change in job quality across the EU as a whole for each measure of job quality. This chapter also examines changes in job quality for each EU country and the extent of convergence and divergence of job quality between countries.

Chapter 3 examines whether convergence and divergence of job quality is affected by institutional characteristics and macroeconomic factors.

Chapter 4 examines whether the convergence and divergence of job quality is shaped by the employment sector, and whether changes in job quality are simply a result of changes in the sectoral composition of the European economy.

Chapter 5 examines whether the convergence and divergence of job quality is shaped by work and organisational characteristics – occupation, extent of computer use and self-employment.

Chapter 6 examines whether the convergence and divergence of job quality is influenced by employee characteristics – gender and age.

Chapter 7 summarises the findings and discusses the policy implications.

Convergence and divergence of job quality 2

The aim of this chapter is to provide an overview of the nature of convergence and divergence for each of the main aspects of job quality covered by this report. The main aspects of job quality considered are: skills and discretion, work risks, work intensity and working time quality. The chapter reports the results of the analysis on:

- the general trend in job quality across the EU;
- changes in job quality over time in each country;
- the general level of convergence and divergence across the EU;
- trends in convergence and divergence between specific countries – that is, relative rates of change.

The focus is on examining changes from 1995 to 2010 using EWCS data. This restricts the main analysis to the EU15 countries, although a specific analysis covering the EU27 from 2000 to 2010 is reported later in the chapter.

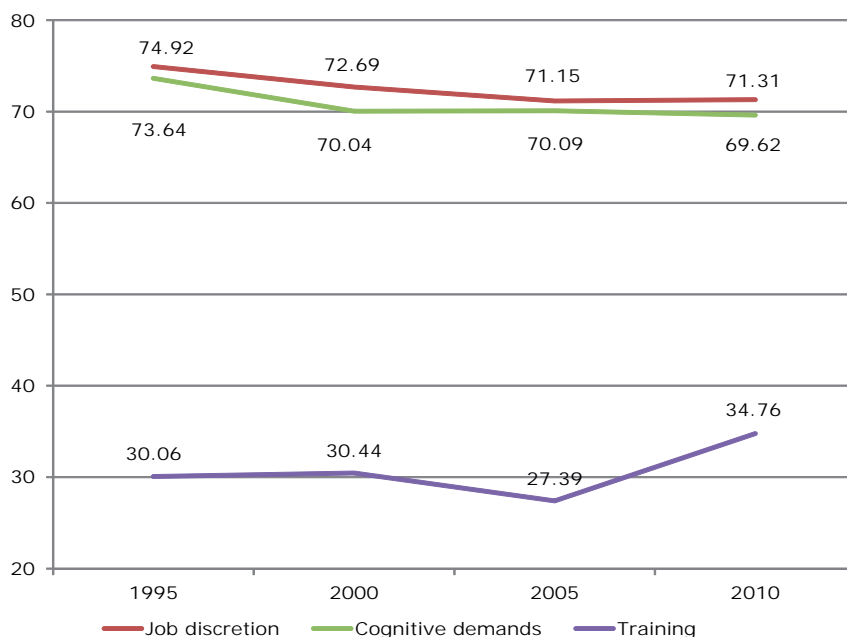
Skills and discretion

Skills and discretion covers three components of job quality: job discretion, cognitive demand and the extent of training.

Job discretion

Across the EU15, job discretion showed a statistically significant downward trend from 1995 to 2010 (Figure 2).⁸ This is reflected in country-level changes. In particular, in 10 of the EU15 countries the level of job discretion was significantly lower in 2010 than in 1995 – in Portugal and France, for instance (Table 3). However, job discretion does not appear to have declined significantly across all EU15 countries, as there were no significant differences in job discretion between 1995 and 2010 in Germany, Greece, Luxembourg or Sweden. Moreover, in Denmark and Finland, job discretion was significantly higher in 2010 than in 1995.

Figure 2: Skills and discretion: trends in the EU15 (1995–2010)



⁸ In line with standard methods for reporting statistical analysis, the terms ‘statistically significant’ and ‘significant’ are used to refer to results that are unlikely to be due to chance or random fluctuation.

Table 3: Job discretion: average level in EU15 (1995–2010)

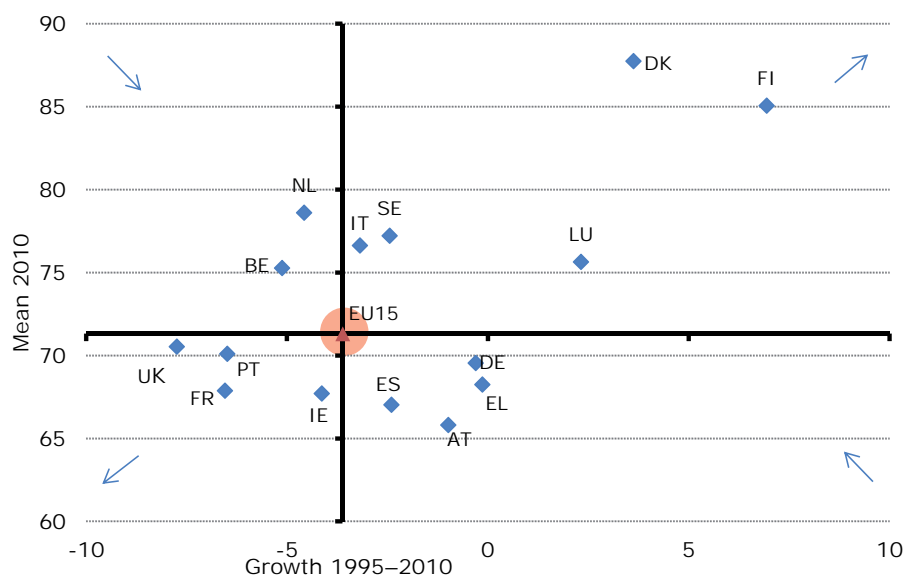
	1995	2000	2005	2010	Difference between 1995 and 2010
Finland	78.12	75.56	78.55	85.06	6.94*
Denmark	84.13	83.37	84.21	87.75	3.62*
Luxembourg	73.32	70.43	77.38	75.64	2.32
Greece	68.38	64.01	67.92	68.24	-0.14
Germany	69.85	74.38	69.02	69.54	-0.30
Austria	66.78	72.10	70.06	65.80	-0.98*
Spain	69.43	63.74	61.35	67.03	-2.40*
Sweden	79.66	80.99	82.84	77.21	-2.45
Italy	79.81	75.42	77.93	76.63	-3.18*
EU15	74.92	72.69	71.15	71.31	-3.61*
Ireland	71.84	67.29	74.49	67.71	-4.13*
Netherlands	83.17	83.75	78.12	78.60	-4.57*
Belgium	80.38	70.69	77.53	75.27	-5.12*
Portugal	76.58	62.04	67.51	70.09	-6.49*
France	74.42	70.42	72.29	67.88	-6.54*
United Kingdom	78.27	73.44	68.27	70.53	-7.74*

Note: *indicates significant difference at $p < .05$ or above.

The latent growth analysis did not uncover any general pattern of convergence or divergence in job discretion across the EU15, as there was no statistically significant relationship between the initial mean level and rate of change in job discretion. However, the comparative analysis of rates of change between countries did show that job discretion was converging between some countries while diverging between others. To help illustrate these findings, Figure 3 plots the change in job discretion from 1995 to 2010 against the mean of job discretion in 2010 for each country. This figure also includes the change in job discretion from 1995 to 2010 and the mean of job discretion in the EU for 2010 to show how the nature of convergence and divergence can be interpreted.

When the EU15 is used as the reference point, countries above and to the right of the EU15 have higher levels of job discretion and either faster increases or slower declines in job discretion. This means that the job discretion of a country in this quadrant will have diverged upwards from the EU15 mean if the rate of change between this country and the EU15 are significantly different. Similarly, countries below and to the right of the EU15 have lower levels of job discretion and either faster increases or slower declines in job discretion than the EU15. This means that the job discretion of a country in this quadrant has converged upwards towards the EU mean if the rates of change are significantly different.

The same principles can be applied when a specific country is used as the reference point. For example, if Luxembourg is used as the reference point, it could be concluded that job discretion in all countries above and to the right of Luxembourg has diverged away from Luxembourg if the growth of job discretion in these countries is significantly different from that of Luxembourg.

Figure 3: Job discretion: convergence and divergence between EU15 countries (1995–2010)


The comparative analysis of rates of change between countries indicates that job discretion has diverged between some European countries and converged between others.⁹ In particular, significant differences in rates of change indicate the following.

- Job discretion in the Nordic countries of Denmark, Finland and Sweden has diverged from that of a cluster of countries that includes Belgium, France, Italy, Portugal and the UK. Also, job discretion in Luxembourg is diverging from that in Portugal, the Netherlands and the UK.
- Job discretion in Portugal and the UK has converged with that in Austria, Ireland, and Germany.

Overall, the analysis of trends indicates that job discretion has both converged and diverged among EU15 countries. This is largely because job discretion in Nordic countries has diverged from a group of countries in which job discretion has converged. As such, based on the classification of divergence and convergence present in Table 1, the pattern of change in job discretion across the EU15 appears to be characterised by a mixture of polarisation and harmonised decline.

Cognitive demand

Cognitive demand showed a statistically significant downward trend from 1995 to 2010 in the EU15 (Figure 2). This decline is a particular feature of larger EU countries such as France, Germany, Italy, Spain and the UK (Table 4), as well as the Netherlands and Finland. In all these countries, the level of cognitive demand was significantly lower in 2010 than in 1995. Although the results indicate increases in cognitive demand for seven EU countries (Austria, Belgium, Denmark, Greece, Ireland, Luxembourg and Portugal), these increases were not statistically significant.

⁹ It should be noted that only significantly different rates of change are reported.

The latent growth modelling analysis again did not uncover any general pattern of convergence or divergence in cognitive demand across the EU15, as there was no significant relationship between the initial mean level and rate of change in cognitive demand. But the comparative analysis of rates of change did reveal evidence of convergence and divergence between countries (Figure 4). Significant differences in rates of change indicated the following instances of convergence and divergence.

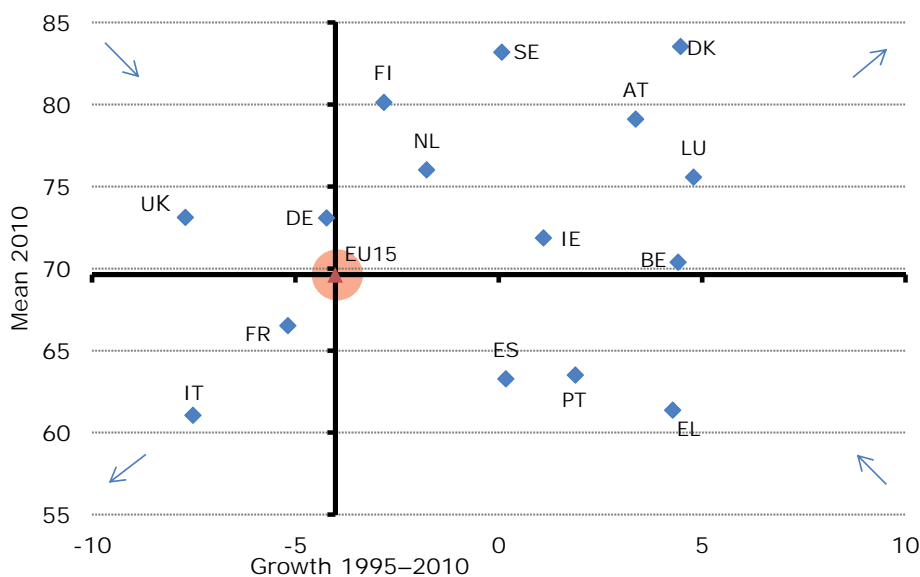
Convergence: Cognitive demand in Germany and the UK converged towards that of Belgium, Greece, Portugal, and Spain, while in France and Ireland cognitive demand converged towards that of Greece. Meanwhile, Italy converged downwards towards Portugal. This convergence was largely a result of declines in those countries with medium-to-lower levels of cognitive demand.

Divergence: Divergence occurred between countries with positive trends in cognitive demand (Austria and Denmark) and those with declining trends (Germany and the UK).

Table 4: Cognitive demand: average level in EU15 (1995–2010)

	1995	2000	2005	2010	Difference between 1995 and 2010
Luxembourg	70.76	68.32	74.22	75.56	4.79
Denmark	79.07	80.99	84.43	83.54	4.47
Belgium	65.97	69.83	70.87	70.38	4.41
Greece	57.08	55.11	64.55	61.36	4.28
Austria	75.73	77.23	80.57	79.10	3.37
Portugal	61.61	54.56	68.27	63.50	1.88
Ireland	70.77	66.27	70.16	71.87	1.10
Spain	63.09	63.86	59.92	63.27	0.18
Sweden	83.10	77.57	83.95	83.19	0.08
Netherlands	77.78	78.93	80.66	76.01	-1.77*
Finland	82.94	80.39	81.81	80.12	-2.82*
EU15	73.64	70.04	70.09	69.62	-4.02*
Germany	77.32	72.38	71.56	73.09	-4.23*
France	71.70	70.44	71.78	66.51	-5.18*
Italy	68.57	63.49	67.27	61.05	-7.51*
United Kingdom	80.82	73.57	67.76	73.12	-7.70*

Note: *indicates significant difference at $p < .05$ or above

Figure 4: Cognitive demand: convergence and divergence between EU15 countries (1995–2010)


Overall, the analysis indicates that there is a cluster of countries with relatively high levels of cognitive demand that has diverged from another cluster of countries in which cognitive demand has converged. The pattern of change of cognitive demand in the EU15 is therefore characterised by polarisation and harmonised decline, based on the classification of divergence and convergence shown in Table 1. The main cause of this appears to be the decline in cognitive demand in the larger EU economies – especially France, Germany, Italy and the UK.

Training

Across the EU15 there was a significant upward trend in training from 1995 to 2010 (Figure 2). Much of the increase in training occurred from 2005 to 2010, especially in Italy, Portugal and Spain (Table 5). The general upward trend in training is reflected in the eight countries that had significantly higher levels of training in 2010 than in 1995 – that is, Austria, Belgium, Spain, Ireland, Italy, Luxembourg, the Netherlands and Portugal (Table 5). In contrast, there were no significant differences in the level of training between 1995 and 2010 in Germany, Greece, France, Sweden and the UK, and the level of training in Denmark and Finland was significantly lower in 2010 than it had been in 1995.

The latent growth modelling indicated that the level of training had converged across the EU15, as there was a significant negative relationship between the initial mean level and rates of change in training. The comparative analysis of rates of change suggests that convergence occurred largely as a result of countries that had lower levels of training in 1995 having significantly faster rates of growth in training than countries with higher levels of training in 1995 (Figure 5). For example, Spain and Portugal had faster rates of growth in training than seven countries (Denmark, Germany, France, Italy, the Netherlands, Finland and the UK), while Belgium, Austria and Ireland had faster rates of growth in training than five countries (Denmark, Finland, Germany, the Netherlands, and the UK).

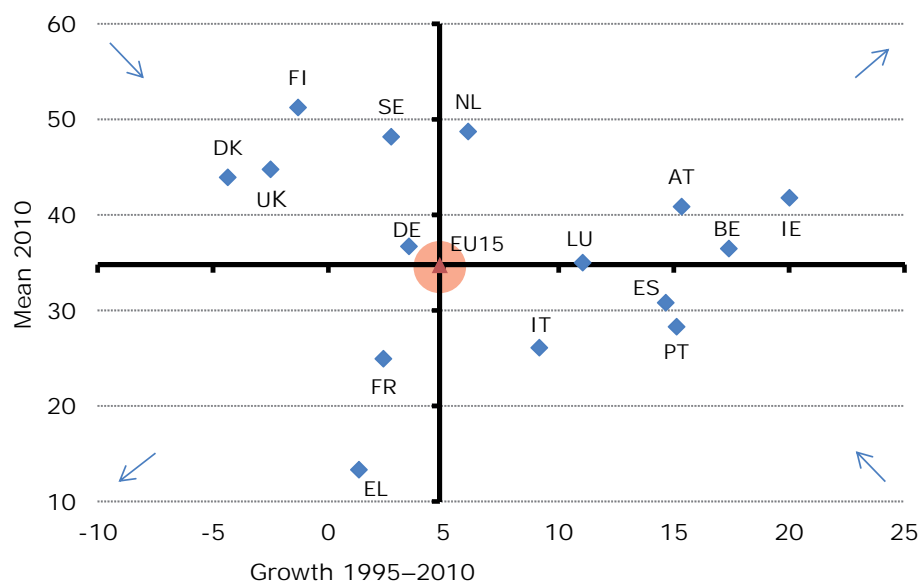
Table 5: Training: average level in EU15 (1995–2010)

	1995	2000	2005	2010	Difference between 1995 and 2010
Ireland	21.76	35.19	37.14	41.78	20.01*
Belgium	19.07	30.72	40.36	36.46	17.39*
Austria	25.51	32.64	37.54	40.84	15.33*
Portugal	13.15	9.80	15.00	28.27	15.12*
Spain	16.13	17.83	18.83	30.78	14.65*
Luxembourg	23.94	28.81	37.26	34.98	11.05*
Italy	16.92	21.01	16.79	26.08	9.16*
Netherlands	42.62	46.30	31.43	48.70	6.07*
EU15	29.92	30.49	27.15	34.76	4.84
Germany	33.19	30.37	25.18	36.69	3.50
Sweden	45.41	43.20	50.87	48.15	2.73
France	22.52	22.71	24.12	24.91	2.39
Greece	11.96	11.87	13.03	13.30	1.34
Finland	52.53	52.96	52.32	51.22	-1.30*
United Kingdom	47.25	47.63	38.36	44.76	-2.49*
Denmark	48.25	48.64	36.18	43.90	-4.36*

Note: *indicates significant difference at $p < .05$ or above

Given the general upward trend in training and the evidence for convergence in the EU15, the pattern of change in training across the EU15 can be characterised as one of harmonised improvement. However, one exception to this general pattern is Greece: the level of training in Greece diverged from that in many other EU15 countries because of a significantly slower rate of growth in training.

Figure 5: Training: convergence and divergence between EU15 countries (1995–2010)

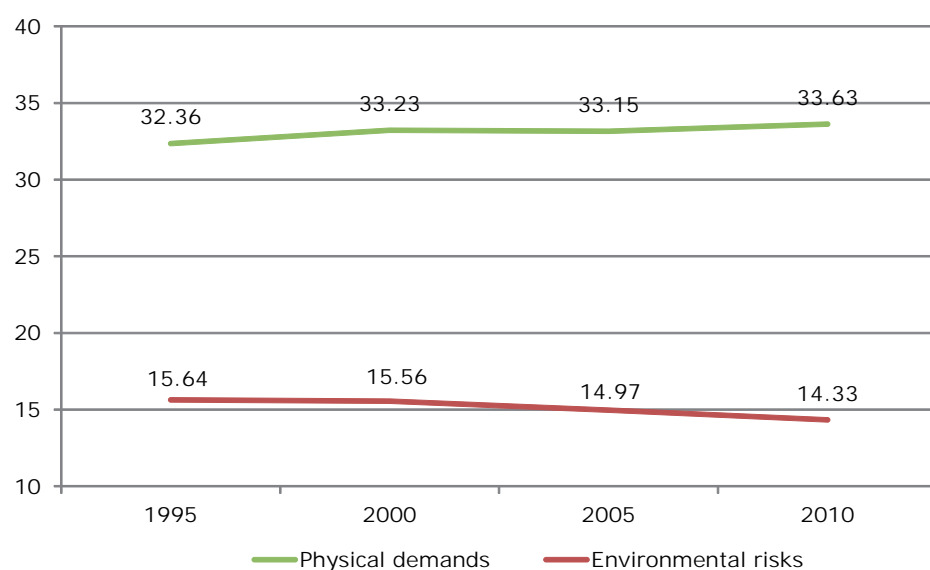


Work risks

Environmental risk

For the EU15 as a whole, the mean level of environmental risk did not change from 1995 to 2010, although significant change did occur in specific countries (Table 6 and Figure 7). Environmental risk was significantly lower in 2010 than in 1995 in nine countries (Austria, Germany, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden and the UK). These changes suggest an improvement in job quality, as low scores for environmental risk indicate better job quality. In contrast, scores for environmental risk were significantly higher in Belgium and Denmark in 2010 than in 1995, indicating a decline in job quality in these countries.

Figure 6: Work risks: trends in the EU15 (1995–2010)



A general pattern of convergence or divergence in environmental risk across the EU15 was not found using latent growth modelling, as there was no significant relationship between the initial mean level and rate of change in environmental risk. The comparative analysis of rates of change did indicate that convergence and divergence had occurred between countries.

The level of environmental risk in Ireland and the UK diverged from that in one group of countries (Austria, Finland, France, Germany, Greece, Luxembourg, Portugal, Spain, Sweden) but converged with that in another set of countries (Belgium, Denmark, Italy, and the Netherlands).

The level of environmental risk in Greece converged with that in four countries (Belgium, Denmark, Germany and France); the level of environmental risk in Spain converged with that in these same four countries plus that in Italy, Luxembourg, Finland and Sweden.

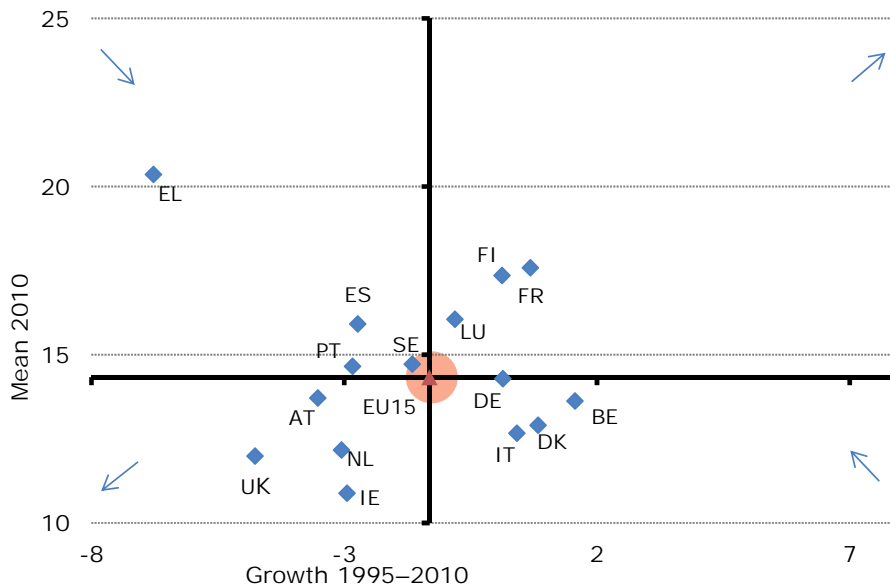
Despite these and other instances of convergence and divergence, it is difficult to detect a general pattern of convergence or divergence in environmental risk across the EU15 that can be related to the changes occurring between countries.

Table 6: Work risks: average level in EU15 countries (1995–2010)

	Environmental risk						Physical demands				
	1995	2000	2005	2010	Difference between 1995 and 2010		1995	2000	2005	2010	Difference between 1995 and 2010
Belgium	12.05	13.49	13.33	13.33	1.57*	Luxembourg	25.68	29.18	31.84	35.78	10.10*
Denmark	12.07	12.07	13.10	13.10	0.83*	Sweden	28.42	35.64	34.81	37.11	8.69*
France	16.89	16.53	16.55	16.55	0.69	Italy	28.66	30.93	33.63	35.68	7.02*
Italy	12.25	13.78	13.20	13.20	0.42*	Belgium	29.11	29.22	30.23	35.08	5.97*
Germany	14.14	13.98	15.70	15.70	0.14	France	38.27	41.00	39.11	42.05	3.78*
Finland	17.23	19.68	17.95	17.95	0.12	Ireland	27.55	30.41	27.45	30.88	3.34
Luxembourg	16.86	15.00	13.41	13.41	-0.81	Finland	34.08	36.37	39.92	37.25	3.17*
EU15	15.64	15.56	14.97	14.97	-1.31	Germany	27.65	27.50	29.47	29.11	1.47
Sweden	16.37	14.92	14.94	14.94	-1.65	EU15	32.36	33.23	33.15	33.63	1.27*
Spain	18.64	20.73	18.15	18.15	-2.73*	Austria	31.83	28.71	34.34	32.62	0.79*
Portugal	17.84	15.24	18.11	18.11	-2.83*	Portugal	39.57	37.11	41.82	40.26	0.69
Netherlands	13.82	13.22	12.43	12.43	-2.94*	Spain	36.74	41.05	37.09	35.69	-1.05
Ireland	15.21	16.47	12.05	12.05	-3.05*	Denmark	26.62	25.96	30.30	34.79	-1.82*
Austria	17.22	14.22	14.50	14.50	-3.52*	Netherlands	29.02	30.11	25.20	24.97	-4.04*
UK	16.75	15.40	11.18	11.18	-4.76*	Greece	47.49	46.10	49.33	42.96	-4.53
Greece	27.13	23.54	24.77	24.77	-6.77*	UK	33.86	31.35	28.19	29.33	-4.53*

Note: *indicates significant difference at $p < .05$ or above

Figure 7: Environmental risk: convergence and divergence between EU15 countries (1995–2010)



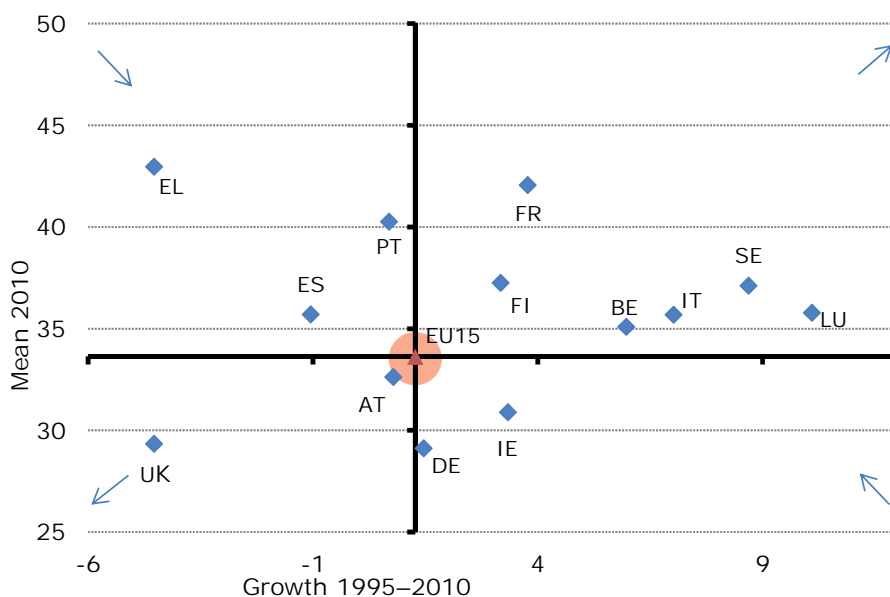
Physical demands

Across the EU15 there has been a significant upward trend in physical demands from 1995 to 2010 (Figure 8). This upward trend indicates a decline in job quality, as high physical demands are indicative of lower job quality. The upward trend is reflected in the seven countries in which physical demand was significantly higher in 2010 than in 1995 – Austria, Belgium, France, Italy, Luxembourg, Finland and Sweden (Table 6). However, this trend was not apparent in all countries. There were no significant differences in the level of physical demands between 1995 and 2010 in Germany, Greece, Spain, Ireland and Portugal, and the level of physical demands was significantly lower in 2010 than in 1995 for Denmark, the Netherlands and the UK.

The latent growth modelling did not find a clear pattern of convergence or divergence in physical demand between the EU15 countries. There were, however, two notable features (Figure 8).

- Significantly faster rates of growth in physical demands in countries such as Austria, Italy, Luxembourg and Sweden meant that the level of physical demands in these countries converged towards that of Greece and Spain, countries with high levels of physical demands.
- The level of physical demands in the Netherlands and the UK had diverged from all other countries (except Denmark and Germany) as a result of significantly faster declines.

Figure 8: Physical demands: convergence and divergence between EU15 countries (1995–2010)



Work intensity

Two components of work intensity were evaluated: workload and task interdependence.

Workload

A significant upward trend in workload occurred from 1995 to 2010 (Figure 9). This upward trend signifies a decline in job quality, as high workload indicates lower job quality. The general upward trend is mirrored across five EU15 countries where workload was significantly higher in 2010 than in 1995 (Belgium, Greece, Ireland, Italy and Luxembourg; see Table 7). The upward trend is not reflected in Denmark and Finland (where there were no significant differences in workload between 1995 and 2010) nor in Austria, the Netherlands, Portugal or the UK, where workload was significantly lower in 2010 than in 1995.

Figure 9: Work intensity: trends in the EU15 (1995–2010)

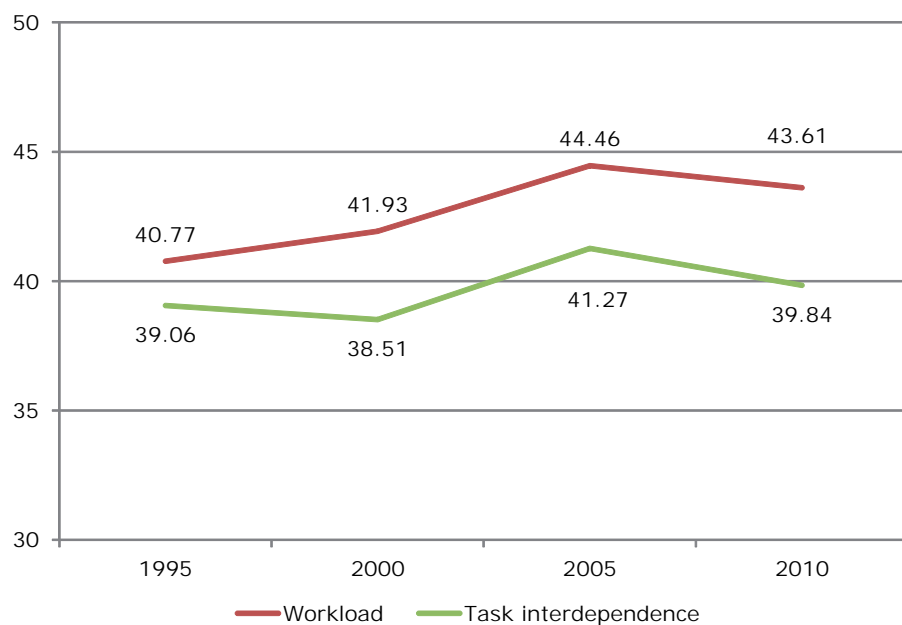


Table 7: Work intensity: Average level in EU15 countries (1995–2010)

	Workload						Task interdependence				
	1995	2000	2005	2010	Difference between 1995 and 2010		1995	2000	2005	2010	Difference between 1995 and 2010
Luxembourg	29.04	37.09	40.44	40.36	11.24*	Luxembourg	36.29	37.97	41.56	42.23	5.94*
Italy	32.36	40.29	43.76	42.53	10.18*	Greece	40.94	41.99	44.22	45.43	4.37*
Greece	41.73	44.22	53.77	50.80	8.95*	Belgium	35.56	39.20	43.04	39.63	4.17*
Ireland	37.51	41.03	37.31	46.60	8.89*	Germany	34.00	33.24	40.75	37.57	3.48*
Belgium	32.22	36.46	42.81	40.28	8.16*	Finland	38.50	39.46	40.56	41.26	2.81
France	36.09	39.63	39.62	43.54	7.21*	Ireland	45.41	44.50	36.77	48.08	2.56
Spain	31.58	32.90	42.98	38.21	6.71*	UK	44.85	45.44	44.68	46.89	1.81*
Germany	44.05	44.74	49.89	48.74	4.32*	EU15	39.04	38.50	41.41	39.86	0.78
Sweden	46.21	53.47	53.82	50.05	3.61*	Sweden	37.66	36.95	37.12	38.20	0.56
EU15	40.67	41.91	44.61	43.70	2.84*	Italy	37.82	38.54	38.31	37.62	-0.30*
Denmark	41.38	40.47	53.36	41.95	0.70	France	42.77	39.45	44.44	42.23	-0.55
Netherlands	44.14	46.90	40.78	41.40	-2.73*	Portugal	39.14	36.19	47.14	38.15	-0.80
Finland	51.62	50.47	53.78	48.41	-3.24	Denmark	34.26	31.40	37.71	33.34	-0.87
UK	48.23	44.72	41.62	42.47	-6.14*	Spain	39.68	42.39	37.79	37.90	-1.83
Portugal	34.99	29.72	36.82	28.45	-6.61*	Austria	36.82	35.94	41.17	33.26	-3.56*
Austria	55.19	46.31	51.46	47.01	-8.28*	Netherlands	37.63	30.64	40.14	32.82	-4.79*

Note: *indicates significant difference at $p < .05$ or above

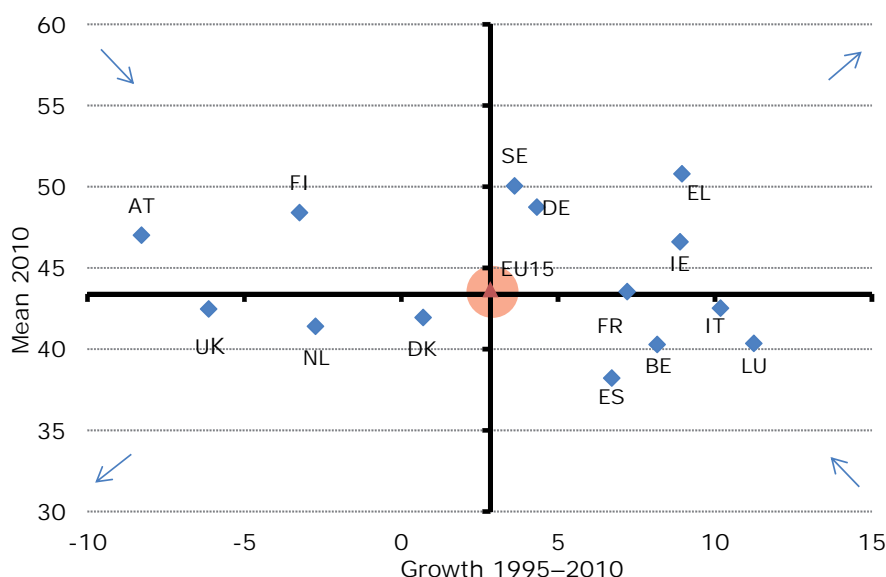
A significant negative relationship between the initial mean level and growth rate of workload indicates that workload converged across the EU15 from 1995 to 2010. The comparative analysis of rates of change between countries suggests

that this occurred largely as a result of significantly faster increases in countries with lower levels of workload in 1995 (see Figure 10). In particular, the comparative analysis suggests the following.

- A group of countries with relatively low workload (Belgium, France, Italy, Luxembourg, and Spain) converged towards a group of countries with higher levels (Austria, the Netherlands, Finland, UK).
- An exception to this general convergence is Portugal, in which workload diverged away from that in all other countries (apart from Austria, the Netherlands, Finland, and the UK) as a result of a significantly faster decline in workload.

As high workload is generally taken to be an indicator of low job quality, the combination of an upward trend in workload and a significant level of convergence indicates that the pattern of change in job quality exhibited by workload is best characterised as a harmonised decline.

Figure 10: Workload: convergence and divergence between EU15 countries (1995–2010)



Task interdependence

There was a significant upward trend in task interdependence across the EU15 from 1995 to 2010 (Figure 9), suggesting a decline in job quality, as high task interdependence is indicative of lower job quality. Although there were relatively clear linear trends in task interdependence across a number of countries, such as Finland, Greece, Luxembourg, and the United Kingdom (Table 7), the changes over time in task interdependence were more erratic in countries such as Austria, Denmark, Germany, Ireland, Portugal, and the Netherlands, which had large increases or declines in one or more years. This makes it difficult to reach a firm conclusion about the direction of change in task interdependence in these countries based on the available time series data. In addition, no noticeable pattern of convergence or divergence across the EU15 was uncovered, although the comparative analysis of rates of change between countries provides examples of task interdependence having converged or diverged between countries.

Working time quality

Working time quality showed a statistically significant upward trend from 1995 to 2010 (Figure 11), suggesting a general improvement. The general upward trend is reflected in 11 countries where working time quality was significantly higher in 2010 than in 1995 (Table 8). The upward trend was not apparent in Germany and the Netherlands, where there were

no significant differences in working time quality between 1995 and 2010 nor in Denmark and Sweden, where working time quality was significantly lower in 2010 than in 1995.

Figure 11: Working time quality: trends in the EU15 (1995–2010)

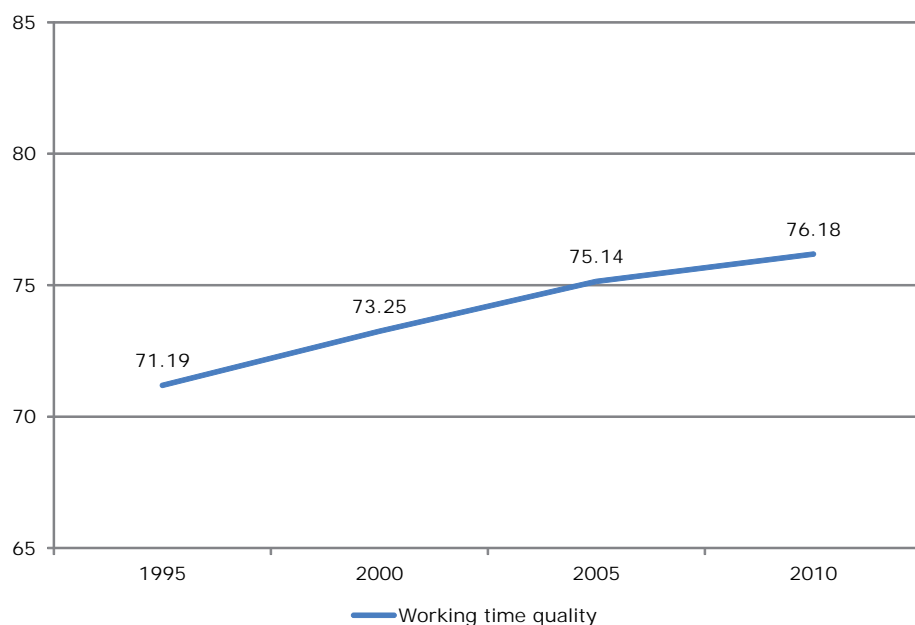


Table 8: Working time quality: average level in EU15 Member States (1995–2010)

	1995	2000	2005	2010	Difference between 1995 and 2010
France	68.63	72.60	82.55	81.43	12.76*
Ireland	65.52	68.03	72.14	74.12	8.53*
Belgium	71.23	77.88	77.86	79.44	8.18*
Portugal	64.14	70.08	69.97	71.65	7.63*
Italy	67.17	69.28	70.30	74.80	7.55*
Spain	66.67	64.69	68.81	74.11	7.31*
Luxembourg	68.31	73.04	74.98	74.81	6.78*
Finland	73.90	72.59	77.14	79.51	5.76*
EU15	71.18	73.27	74.94	76.15	4.99*
Austria	70.91	71.99	70.66	75.57	4.82*
Greece	54.40	63.29	57.65	59.06	4.62*
United Kingdom	71.63	73.63	76.21	74.62	3.22*
Germany	75.58	77.81	76.01	76.35	0.81
Netherlands	80.22	81.53	81.03	80.53	0.36
Sweden	77.45	75.80	75.28	76.06	-1.50*
Denmark	83.95	84.63	82.62	81.38	-2.61*

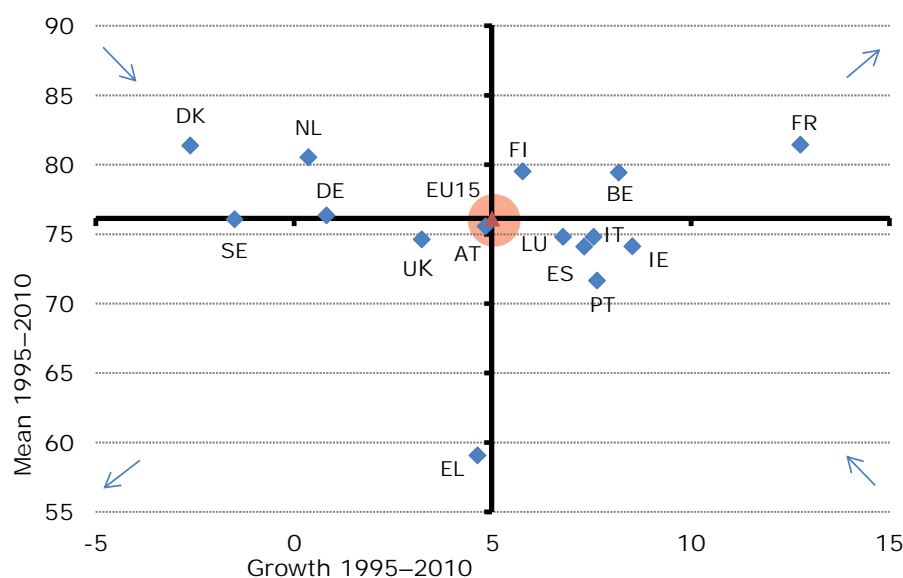
Note: * indicates significant difference at $p < .05$ or above

The latent growth modelling indicated that working time quality had converged across the EU15, as there was a significant negative relationship between the initial mean level and rate of change in working time quality. The comparative analysis of rates of change between countries indicated that the convergence of working time quality between EU15 countries had resulted from the following factors:

- countries with low levels of working time quality in 1995 (France, Spain, Italy and Ireland) having significantly faster growth rates than countries with higher working time quality in 1995;
- declining trends in Denmark and Sweden.

The overall pattern of change in working time quality can therefore be characterised as harmonised improvement.

Figure 12: Working time quality: convergence and divergence between EU15 Member States (1995–2010)



Job quality in Greece: From limited modernisation to devaluation

In terms of job quality, Greece is an unusual case, having relatively low scores on job quality but experiencing many improvements compared to the EU15 average and its Southern European counterparts. The findings of this chapter show that Greece has some of the lowest scores among the EU15 countries on three of the four components of job quality examined (skills and discretion, work risks, working time quality) while converging with the rest of the EU15 due to positive growth in job quality (although the increase in workload is a clear exception to this). As such, between 1995 and 2010, Greece has been narrowing the gap with other EU15 countries but remains near the bottom in terms of job quality.

For most of the period from 1995 to 2010, Greece followed a policy of ‘modernisation’, understood as an attempt to converge or catch up with its counterparts in the EU15 in terms of socioeconomic performance. This was a period of strong GDP and wage growth as well as a period of labour market reforms (facilitating contract flexibility and working time flexibility) and the institutional consolidation of social dialogue. During this period the service sector grew, whereas the primary sectors contracted, which contributed to the relative decline of traditional and Tayloristic forms of work organisation in the Greek economy in favour of newer forms. However, the new forms of work organisation

adopted in Greece were predominantly of a ‘lean production’ type, seeking competitive advantage by increasing the number of labour inputs per hour rather than the quality of labour inputs per hour, through work intensification rather than innovation (Arundel et al 2006; Eurofound, 2009). Thus, while some features of Taylorism (such as deskilling) began to be replaced with more discretionary ones, and while there were efforts to improve the working environment and working time arrangements, the improvements did not extend to the area of work intensity. Intensity increased significantly, especially in terms of workload.

Although unemployment began to increase in 2009 and GDP declined, the full impact of the crisis on the Greek labour market was felt in 2010, just after the last wave of the EWCS was conducted (April 2010). Following the downgrading of the Greek government debt, a Memorandum of Understanding was signed on May 2010 between Greece and the ‘Troika’ (a group composed of representatives of the European Commission, the European Central Bank and the International Monetary Fund). The 2010 Memorandum imposed strict austerity policies and in the following years a series of reforms were enacted with the aim of balancing public finances and increasing competitiveness. Among other austerity measures, the deregulation of labour relations was planned. Thus, as a result of the deep recession and the adoption of strict austerity policies, it has been increasingly difficult to campaign for the improvement of working conditions and investment in skills at the workplace. Legislative reforms weakened trade union power, notably by limiting the duration of contracts, not extending agreements, introducing arbitration procedures and through unilateral reductions in the minimum wage. Coupled with the weakness of the state in monitoring working conditions and enforcing labour law, a surge in undeclared work, unpaid overtime, uninsured work and delays in salary payments have been observed. In addition, overall job quality in Greece is likely to have worsened since 2010 due to the large reduction of the public service sector that followed the Memorandum.

In sum, the positive trends in job quality observed in Greece between 1995 and 2010 may have been short term. It is an open question whether the trajectory of convergence of Greece with the EU15 in terms of job quality since 2010 has changed into a trajectory of divergence.

Convergence and divergence in the EU27 from 2000–2010

This section focuses on convergence and divergence in the EU27 from 2000 to 2010 with a particular focus on the new Member States (NMS) that joined the EU after 2004 but that had participated in the EWCS since 2000. A degree of similarity in the results from the EU15 for 1995–2010 is to be expected but differences are likely to occur because additional countries are included and the starting point for the analysis is different – that is, 2000 rather than 1995. The mean scores for all countries are shown in Annex A1.

Skills and discretion

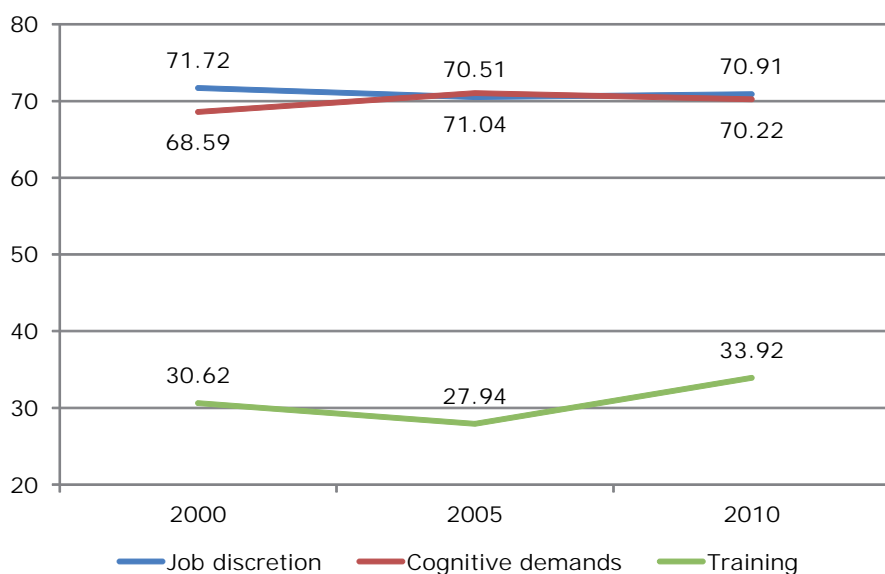
Job discretion did not show any upward or downward trend across the EU27 from 2000 to 2010 although there were changes in individual countries. In particular, among the NMS, job discretion increased in six countries (Estonia, Latvia, Lithuania, Poland, Romania and Slovenia) and decreased in the other six (Bulgaria, Cyprus, Czech Republic, Hungary, Malta and Slovakia). Across the EU27, polarisation in job discretion was evident. In part, this polarisation was driven by the trends in the NMS, with the three Baltic states diverging upwards and five NMS (Bulgaria, Cyprus, the Czech Republic, Hungary, and Slovakia) diverging downwards.

Cognitive demand exhibited a significant upward trend across the EU27 and significant increases occurred in all but three of the NMS (Bulgaria, Cyprus and Poland). However, a clear pattern of convergence or divergence was not evident across the EU27. Training also had a significant upward trend across the EU27, reflected in all the NMS except Bulgaria,

the Czech Republic and Slovakia. However, the increases in training were typically smaller in countries among the NMS than in EU15 Member States.

There was no significant level of convergence in training across the EU27, although the pattern across countries indicated a degree of convergence as a result of declines in countries with high levels of training (Denmark, UK) and increases in countries with low levels of training (Portugal, Romania, Spain).

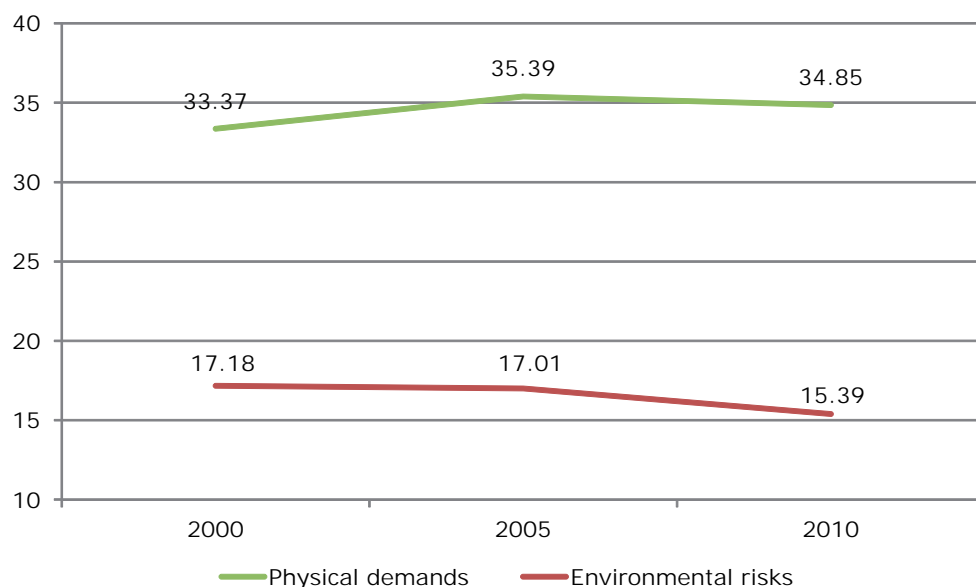
Figure 13: Skills and discretion: trends in the EU27 (2000–2010)



Work risks

Environmental risks showed a significant downward trend across the EU27 from 2000 to 2010, with significantly faster declines occurring in the NMS. An inspection of the change in each country shows that environmental risk declined in most of the NMS, whereas in continental European and Nordic countries there were slower rates of decline or growth. As environmental risks were typically higher in the NMS, these trends indicate a degree of convergence in environmental risk between the NMS and continental European and Nordic countries from 2000 to 2010. In contrast, physical demands showed a significant upward trend across the EU27 and increases were evident in eight of the NMS and ten of the EU15, with increases significantly greater in the NMS than in the EU15. Although there is no overall pattern of convergence or divergence, the results suggest that two clusters of countries have diverged from each other. In the smaller cluster, physical demands declined or remained static (Denmark, Czech Republic, Ireland, Netherlands, UK, and Slovakia). In the larger cluster of 16 countries containing an equal mix of NMS and EU15 countries, physical demands increased.

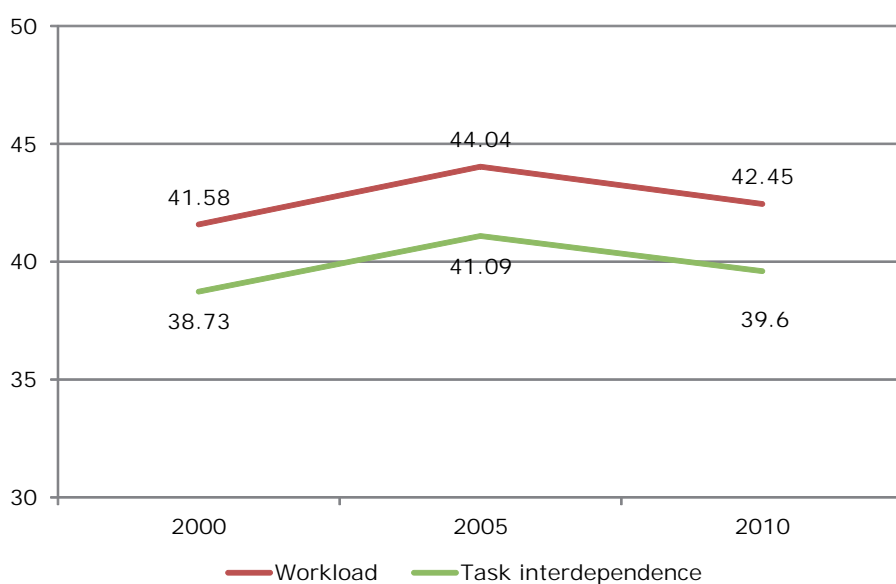
Figure 14: Work risks: trends in the EU27 (2000–2010)



Work intensity

There was a significant upward trend in workload across the EU27 from 2000 to 2010, with a rate of increase significantly higher in the EU15 than in the NMS.¹⁰ Indeed, nine EU15 countries recorded increases in workload from 2000 to 2010, while eight of the NMS recorded either declines or no change in the level of workload. The result of these changes was a significant level of convergence in workload across the EU27. A similar pattern of growth was seen with regard to task interdependence – a significant upward trend across the EU27 and a faster rate of growth in the EU15 (with task interdependence decreasing in 10 of the NMS and increasing in 10 of the EU15) resulting in convergence across the EU27.

Figure 15: Work intensity: trends in the EU27 (2000–2010)

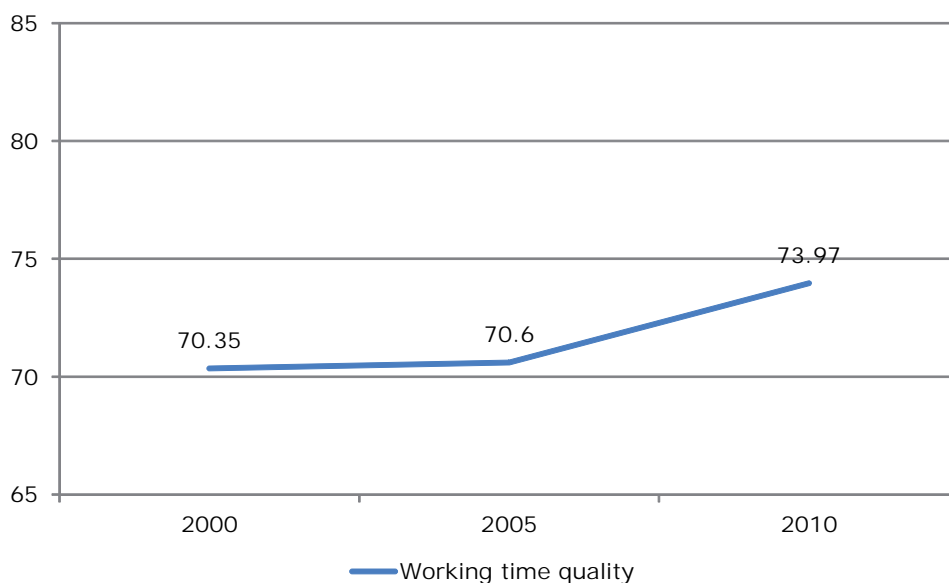


¹⁰ This is the case when Slovenia, the outlier, is removed from the analysis.

Working time quality

There was a significant upward trend in working time quality across the EU27 and a significant level of convergence. This convergence appears to have resulted from faster increases in countries with lower initial levels of working time quality. For example, while working time quality tended to be lower in the NMS, increases in working time quality occurred in all but one of the NMS – Slovenia. Furthermore, some of the largest increases occurred in the three Baltic states.

Figure 16: Working time quality: trends in the EU27 (2000–2010)



Summary

Across the EU27, from 2000 to 2010, there were improvements in job quality with regard to cognitive demand, training, environmental risk and working time quality. But there have also been declines in job quality as evidenced by the upwards trends in physical demands and work intensity. Differences between the NMS and EU15 also emerged. Across the NMS, more beneficial changes occurred in environmental risks, work intensity and working time quality, while training increased at a slower rate in these countries.

A degree of convergence occurred across the EU27 on five of the eight components of job quality covered in this report, with countries in the NMS and EU15 converging with regard to environmental risk, work intensity and working time quality. Divergent trends were seen in job discretion and physical demands. Thus, although the trend was toward greater convergence, the extent of convergence was such that national differences in job quality still remain, particularly between the NMS and northern Member States of the EU15. Furthermore, the extent of improvement in job quality varied greatly between countries among the NMS. For example, despite improvements in many of the NMS, Bulgaria stands out as having experienced declines in job discretion, cognitive demand and training, increases in work risks and comparatively lower increases in working time quality.

Institutional and macroeconomic 3 determinants

Previous research has shown that the broader institutional and macroeconomic context in which organisations are located can shape job quality (Green, 2006; Kalleberg, 2011). The aim of this chapter is to examine how institutional and macroeconomic factors influence the convergence and divergence of job quality in the EU15 and EU27.

Understanding institutional differences

Institutional theories are concerned with the influence of national institutions on work and employment practices and imply that national differences in institutions will lead to cross-national variation in job quality (Gallie, 2007a). While there are a number of institutional theories, employment regime theory is particularly suitable to the analysis of job quality in Europe as it identifies the institutional characteristics of European countries that influence job quality, and states how institutional characteristics vary systematically between countries in the form of institutional regimes. Employment regime theory has also been empirically validated in previous studies of European job quality (Amable, 2003; Gallie, 2007a; Goergen et al, 2009; Holman et al, 2009).

The two key institutional characteristics identified by employment regime theory as relevant to job quality are national employment policies (such as employment rights legislation, welfare provision, full employment policies) and national trade union power (Esping-Andersen, 1990; Korpi, 2006). These institutional characteristics may affect job quality in a number of ways. Employment protection legislation that guards against unfair dismissal may increase the capacity of employees to secure and protect better working conditions, while more extensive welfare provision (such as higher unemployment benefits and sickness benefits) may tighten the labour market, thereby giving employees more power to secure higher quality jobs (Dobbin and Boychuk, 1999; Gustavsen, 2007; Wallerstein, 1999). Furthermore, trade unions will have greater capacity to achieve their aims (such as promoting skills, resisting job standardisation) when they formally participate in organisational decision-making (such as works councils and wage coordination) or have high levels of union membership (Culpepper and Thelen, 2007; Esser and Olsen, 2012; Gallie, 2003; Kirov, 2011; Kristensen and Lilja, 2010).

Differences in national employment policy can be assessed using measures of employment protection legislation (that is, the costs and strictness of procedures involved in dismissing individuals or groups of workers) and welfare expenditure (that is, the proportion of national GDP spent on social benefits paid to individuals for unemployment, disability, sickness and health, old age, housing, family and children, and social exclusion). Differences in trade union power can be assessed through measures of national wage coordination (the extent to which wages are set through national agreements between unions and employers) and union density (the proportion of trade union members). It is therefore expected that job quality in national contexts with strict employment protection, high welfare expenditure, nationally coordinated wages or high union density should diverge from job quality in contexts where these factors are absent.

Another important feature of national institutions is that they vary systematically between countries, insofar as there are different types of institutional regime. Employment regime theory identifies five institutional regimes in Europe:

- Nordic (Denmark, Finland, Sweden);
- Continental (Austria, Germany, France, Luxembourg, Netherlands);
- North-West (the UK, Ireland);

- Southern European (Cyprus, Italy, Greece, Portugal, Spain, Malta);
- Eastern European (Central and Eastern Europe countries).¹¹

According to employment regime theory, Nordic regimes tend to have strong and extensive employment policies (strict employment protection laws, high welfare expenditure), as well as trade unions that are more influential due to their involvement in organisational decision-making (national wage coordination) and high union membership. By comparison, employment policies become progressively weaker and unions less influential in Continental regimes, followed by North-West regimes and then Southern and Eastern European regimes. For example, in Continental regimes, trade unions have slightly less influence and power, and in North-West regimes national employment policies are less extensive (especially regarding employment protection) and trade unions less influential (Hyman, 2001). Southern European and Eastern European regimes typically have weaker employment policies and lower levels of trade union power.

An advantage of using institutional regimes as a unit of analysis is that they enable the combined effects of national institutions to be examined. According to employment regime theory, the rank order of job quality by institutional regime should be Nordic, Continental, North-West and then Southern European and Eastern European regimes. Recent analyses confirm this pattern with some variation (Bustillo et al, 2011; Holman, 2013). Moreover, the development of job quality should vary between institutional regimes. For example, Nordic regimes should not only be more effective than North-West or Southern European regimes at fostering job quality, they also should be better able to resist pressure to respond to globalisation or market liberalisation by standardising, simplifying and intensifying work processes (Greenan et al, 2013). As a result, the development of job quality in Nordic regimes may diverge from that in other institutional regimes (North-West, Southern European and Eastern European).

Examining macroeconomic factors

Job quality might also be affected by macroeconomic factors such as levels of national income and unemployment rates. Countries that are wealthy (as indicated by a high GDP) may be able to afford better levels of job quality. For example, organisations from high GDP countries may be able to offer shorter working hours and provide more training opportunities (Eurofound, 2012a). The opposite argument can also be made as the relationship is bi-directional.¹² Furthermore, in response to legislative reform, countries with a high GDP may be able to afford to implement higher standards than the legally enforceable minimum and be better equipped to enforce employment protection legislation. In addition, a low unemployment rate might foster job quality because it increases the capacity of employees and trade unions to resist low-quality work and employment practices (Dobbin and Boychuk, 1999; Gustavsen, 2007; Leschke et al, 2012; Wallerstein, 1999) and because it increases the need for employers to provide attractive working conditions as a means of recruiting and retaining staff in a tight labour market (OECD, 2004).

¹¹ Employment regime theory uses the term social democratic rather than Nordic, and liberal rather than North-West regimes. For consistency with other Eurofound recent reports, the terms Nordic and North-West are used.

¹² Further study on cyclical deviation could help in exploring this issue.

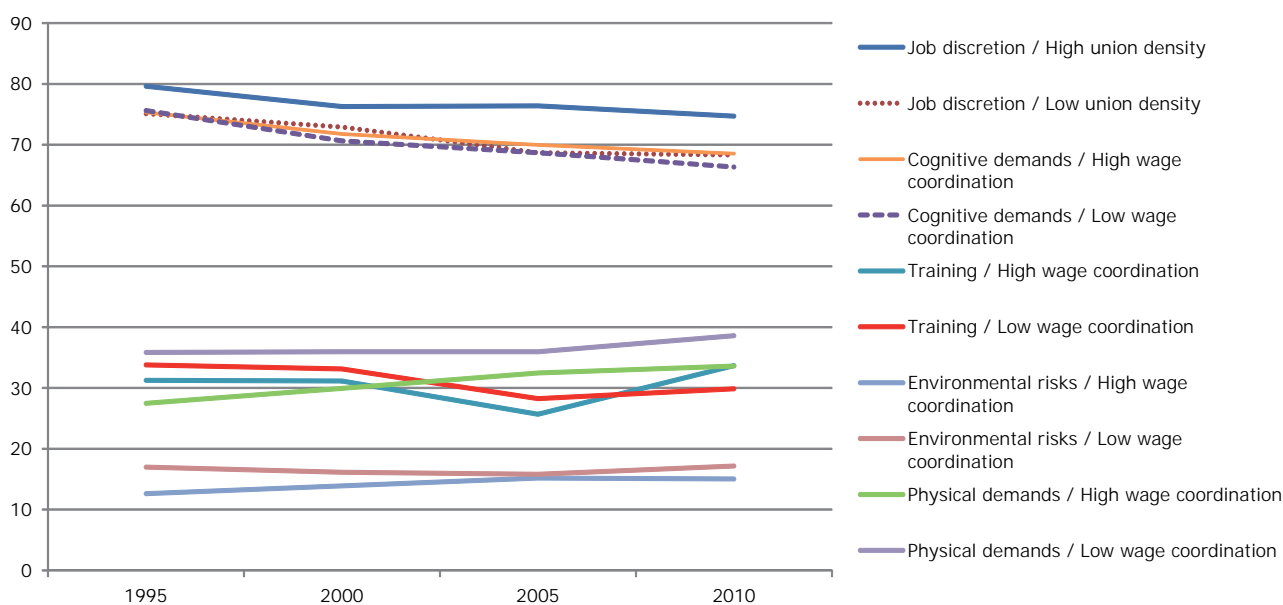
National institutional characteristics

The analysis revealed that, in line with employment regime theory (Gallie, 2007b), job quality was associated with higher wage coordination, greater trade union density, stricter employment protection legislation and higher welfare expenditure.¹³ National institutional characteristics were also associated with divergent trends in job discretion and cognitive demand. Countries with high wage coordination had significantly slower rates of decline in cognitive demand and countries with high union density had significantly slower rates of decline in job discretion. As a result, the level of cognitive demand diverged between countries with different levels of wage coordination, while job discretion diverged between countries with different levels of trade union density. This is illustrated in Figure 17, which plots the change over time in job quality for countries with higher-than-average trade union density or wage coordination and for countries with lower-than-average trade union density or wage coordination. These divergent trends suggest that the level of trade union influence in a country influences trends in these two key components of job design.

Countries with high wage coordination also had significantly faster increases in scores for training, as well as faster increases in work risks (that is, environmental risk and physical demands). The general trend across these aspects of job quality was towards greater convergence, since levels of all aspects tended to be lower in countries with high wage coordination.

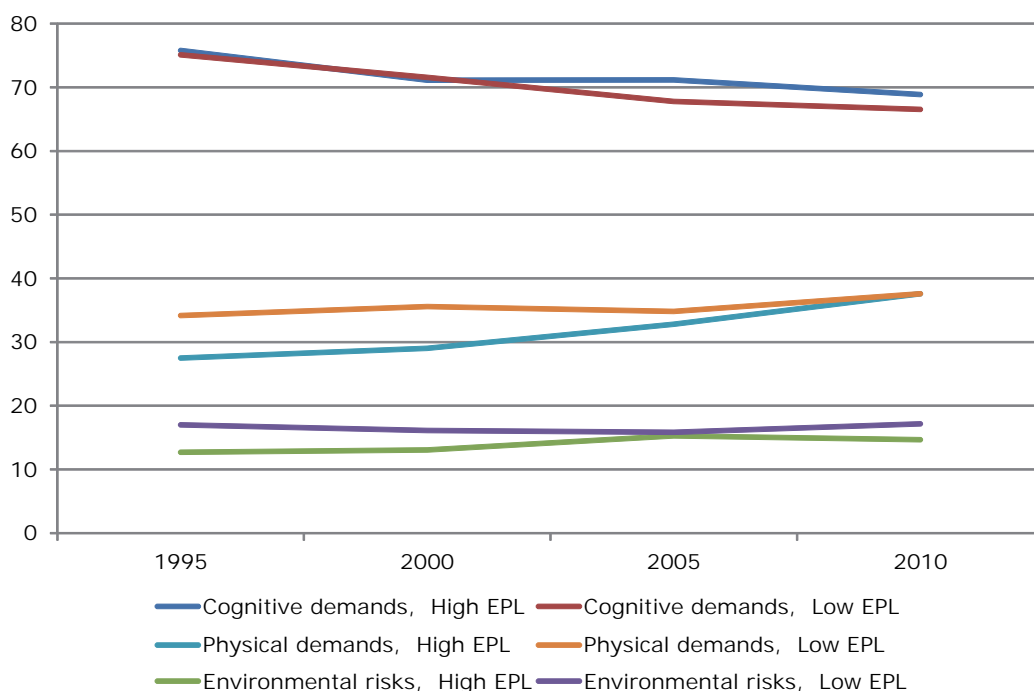
The other national institutional characteristic associated with trends in job quality was the degree of employment protection legislation, which was related to slower declines in cognitive demand and hence greater divergence between countries with different levels of employment protection legislation. Employment protection legislation was also associated with significantly faster increases in environmental risk and physical demand. As these components of job quality were lower in countries with high employment protection, the difference in rates of change suggests convergence in environmental risk and physical demand (see Figure 18).

Figure 17: Convergence and divergence in job quality by wage coordination and union density (EU15, 1995–2010)



¹³ The only exceptions to this pattern were workload, which tended to be positively associated with institutional characteristics, and training provision, which was unrelated to institutional characteristics.

Figure 18: Trends in job quality by employment protection legislation (EPL), EU15



Institutional regime

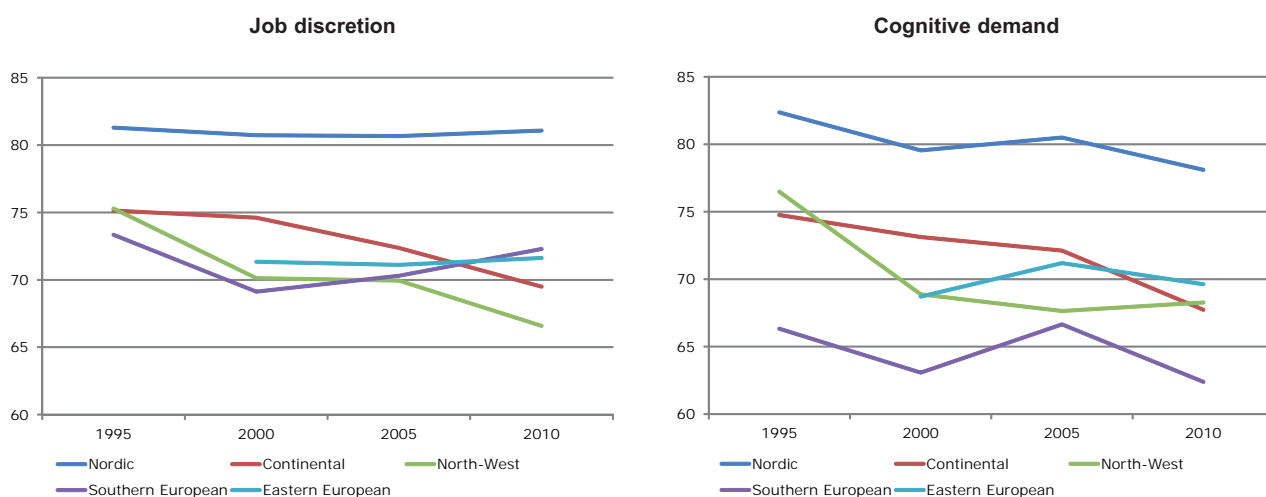
The level of job quality varies considerably between institutional regimes in Europe (Table 9). Broadly, the rank order of job quality by institutional regime is Nordic, Continental, North-West, Southern European and finally Eastern European. From 1995 to 2010, Nordic regimes were characterised by significantly higher job discretion, cognitive demand training and working time quality, as well as lower task interdependence. Nordic regimes, however, tend to have higher workload. Continental regimes were characterised by high working time quality (although it is lower than in Nordic regimes), moderate levels of job discretion, cognitive demand and workload, and relatively low task interdependence. North-West regimes were characterised by low physical demands, as well as moderate levels of job discretion, cognitive demand, training and working time quality (these were all lower than in Continental regimes except for training) and high task interdependence. Southern European regimes had moderate levels of job discretion and work intensity, but high work risks and low working time quality. Eastern European regimes had low job discretion, cognitive demand, workload, and working time quality, as well high work risks.

Table 9: Institutional regimes: average level of job quality 1995–2010

Job quality measure	Institutional regime	1995	2000	2005	2010
1. Skills and discretion					
Job discretion	Nordic	81.30	80.73	80.67	81.08
	Continental	75.14	74.62	72.37	69.50
	North-West	75.29	70.12	69.95	66.59
	Southern European	73.34	69.12	70.31	72.29
	Eastern European		71.34	71.11	71.62
Cognitive job demands	Nordic	82.37	79.55	80.50	78.10
	Continental	74.76	73.13	72.12	67.74
	North-West	76.48	68.88	67.65	68.28
	Southern European	66.33	63.08	66.65	62.39
	Eastern European		68.71	71.19	69.63
Training	Nordic	47.81	46.58	41.95	41.55
	Continental	29.53	31.40	28.39	29.79
	North-West	36.11	40.38	36.19	38.54
	Southern European	22.09	22.33	21.47	26.67
	Eastern European		32.15	25.63	31.70
2. Work risks					
Environmental risks	Nordic	15.39	16.34	17.82	18.39
	Continental	14.28	14.56	16.38	17.31
	North-West	15.59	16.44	12.95	15.51
	Southern European	15.56	16.20	17.58	16.51
	Eastern European		16.68	17.29	16.62
Physical demands	Nordic	30.16	34.10	38.44	37.14
	Continental	29.77	31.77	34.43	38.17
	North-West	30.13	31.54	29.37	33.94
	Southern European	33.20	35.04	38.11	38.55
	Eastern European		28.88	34.26	34.53
3. Work intensity					
Workload	Nordic	47.47	48.85	53.68	46.67
	Continental	41.87	42.42	43.84	43.18
	North-West	43.17	42.24	39.35	43.48
	Southern European	35.69	39.44	45.84	43.77
	Eastern European		38.95	40.80	39.32
Task interdependence	Nordic	36.99	35.81	38.32	37.69
	Continental	36.15	35.32	41.52	39.26
	North-West	44.55	44.36	41.02	47.66
	Southern European	41.13	41.57	42.95	41.29
	Eastern European		38.98	40.88	38.47
4. Working time quality					
	Nordic	76.62	75.84	75.71	76.64
	Continental	73.21	75.47	76.02	77.15
	North-West	69.94	70.88	74.15	73.22
	Southern European	68.19	70.71	69.90	72.85
	Eastern European		65.09	64.76	67.93

A comparative analysis of rates of change between institutional regimes in the EU15 was conducted on each measure of job quality. Focusing first on skills and discretion, Nordic regimes had significantly different rates of change in job discretion from all other regimes in the EU15, insofar as the comparatively high level of job discretion was maintained in Nordic regimes and is diverging from all other regimes in the EU15, increasing this gap. This is illustrated in Figure 19. Differences in the rates of change in job discretion between all other regimes were not significant. For cognitive demand, the rate of change in North-West regimes was significantly higher than in all other regimes. This has resulted in divergent trends between North-West and Nordic regimes, and converging trends between North-West and continental regimes, and between North-West and Southern European regimes. This pattern of change is similar to that found at the country level, such as polarisation between one set of countries and convergence between another set. For training, no significant differences in rates of change were found between institutional regimes. These results therefore suggest that institutional regimes play a role in the divergence and convergence of job discretion and cognitive demand between countries, but not for the trends in training.

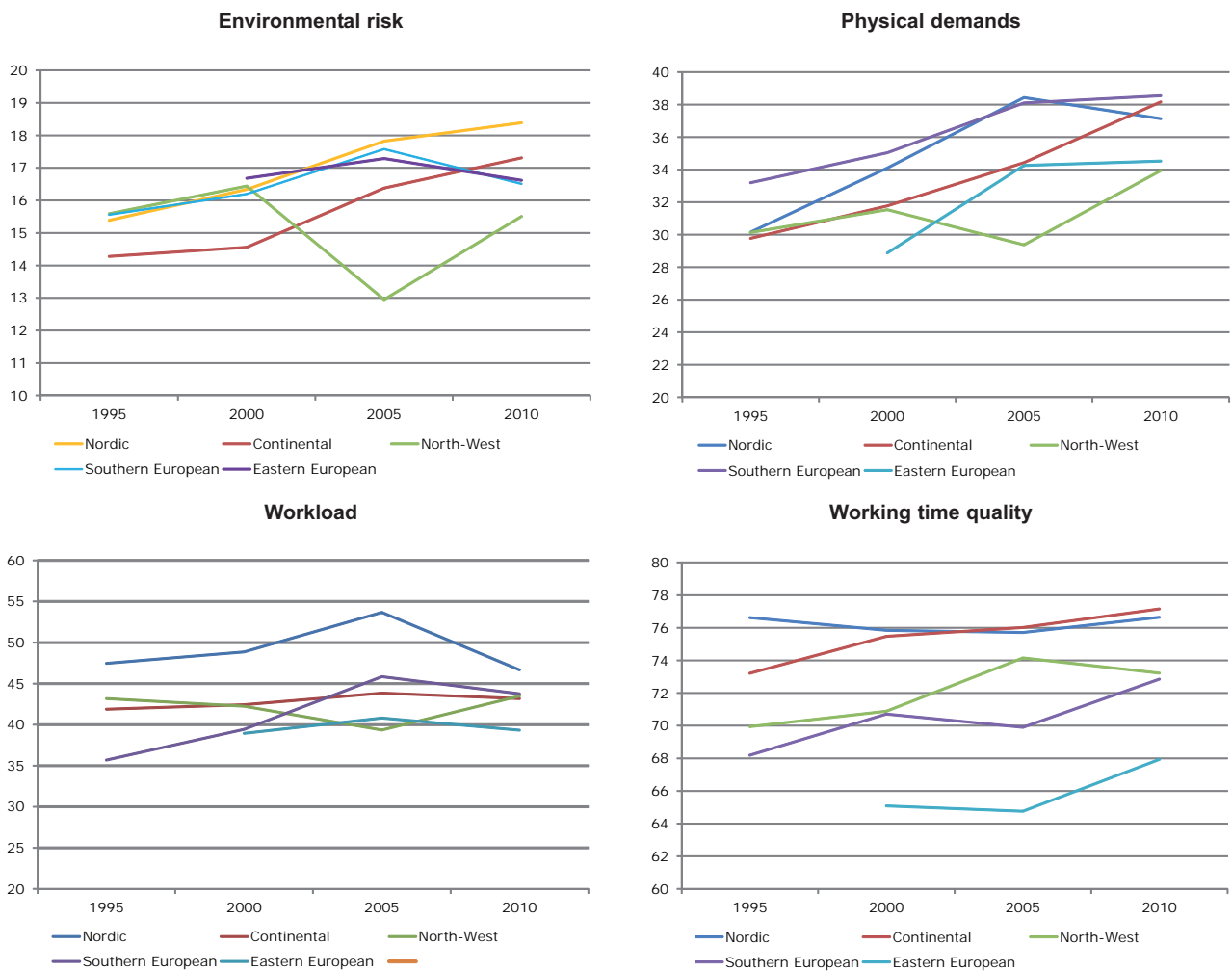
Figure 19: Skills and discretion: trends by institutional regime, 1995–2010



For work risks, North-West regimes had significantly slower rates of growth than all other regimes, insofar as the level of work risks in North-West regimes has diverged from that in other regimes (see Figure 20). In addition, Nordic regimes had significantly faster rates of growth in physical demands than did North-West and Southern European regimes. Overall, these findings indicate that work risks have diverged between countries with different institutional regimes.

The growth rate of workload was significantly slower in North-West regimes than all other regimes. The pattern of change indicated in Figure 20 suggests that the level of workload in North-West regimes has diverged from that in Nordic regimes and converged with that in Southern European regimes. Lastly, the growth rates of working time quality in Continental and Southern European regimes were significantly faster than in Nordic regimes.

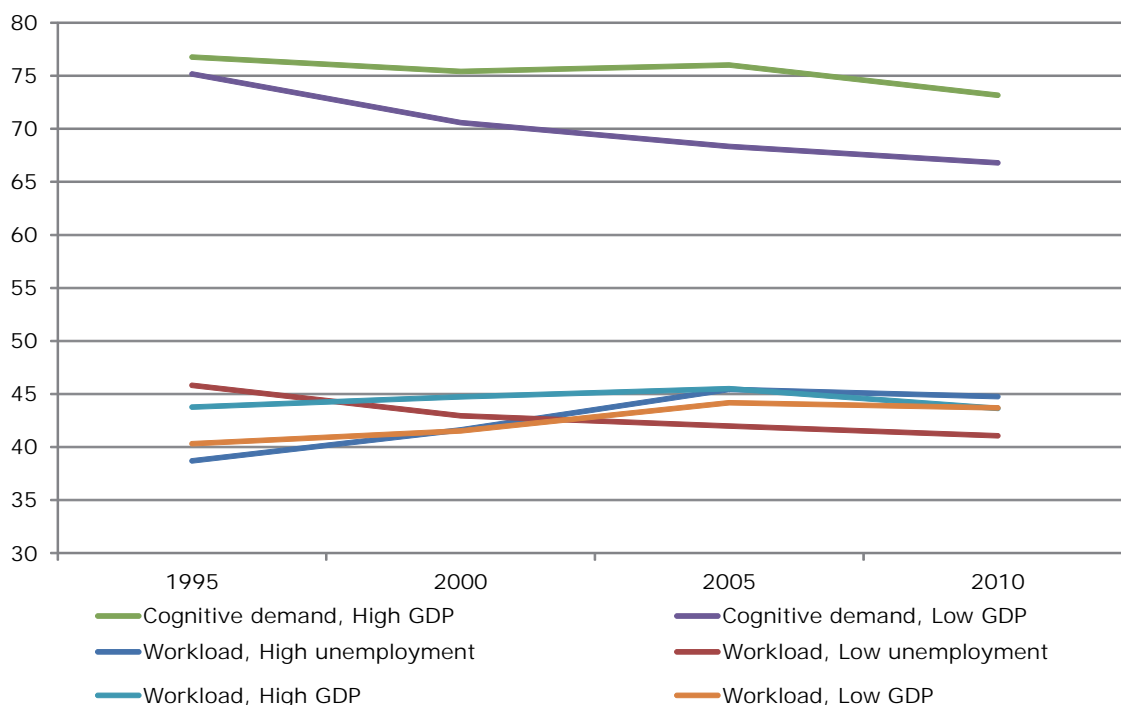
Figure 20: Work risks, workload and working time quality: trends by institutional regime, 1995–2010



Macroeconomic determinants

Among the EU15, countries with high GDP and low unemployment consistently had higher levels of job quality between 1995 and 2010. In terms of change over time, few trends in job quality were affected by the level of unemployment or GDP, except for cognitive demand and workload. High unemployment was associated with faster increases in workload. This is illustrated in Figure 21, which plots the change over time in workload for EU15 countries with higher-than-average unemployment and countries with lower-than-average unemployment. From Figure 21 it can be seen that faster increases in workload occurred in countries with higher levels of unemployment, insofar as workload has converged between countries with high and low levels of unemployment. Low GDP was also associated with faster declines in cognitive demand and faster increases in workload. These trends resulted in cognitive demand diverging and workload converging between countries with high and low levels of GDP.

Figure 21: Workload: trends by GDP and unemployment 1995–2010



Institutional and macroeconomic effects in EU27 from 2000 to 2010

Institutional effects: Broadening the analysis to the EU27 from 2000 to 2010, institutional characteristics had few effects on job discretion, cognitive demand, training or work risks. An exception was the association of wage coordination with faster increases in training, in that training converged between countries with high and low wage coordination. For work intensity, higher employment protection and welfare expenditure were associated with faster increases in workload and task interdependence. This led to a divergence in workload and a convergence in task interdependence between counties with high and low employment protection and high and low welfare expenditure.

Between institutional regimes, there were few differences in the rates of change in job discretion, cognitive demands or training for the EU27 from 2000 to 2010. However, due to a slower rate of growth in training in Eastern European countries, the level of training in these regimes diverged from both continental and Southern European regimes.

There were also differences in rates of change between institutional regimes with regard to work risks and work intensity, particularly between North-West regimes and others. For example, in North-West regimes, environmental risks increased at a slower rate compared to Nordic and Continental regimes, physical demand increased at a slower rate compared to all other regimes, and workload and task interdependence declined in comparison to the growth in Nordic, Continental and Southern European regimes. In Eastern European regimes, physical demands increased at a faster rate than in all other regimes. However, the effect of these changes on convergence or divergence between regimes was difficult to discern. Lastly, working time quality increased more rapidly in Southern European and Eastern European regimes than in Nordic regimes, resulting in convergence in working time quality between institutional regimes.

Macroeconomic effects: Changes in job quality across the EU27 countries from 2000 to 2010 did not appear to be strongly influenced by macroeconomic factors.

Variation in Eastern European economies

In 2004, ten new countries joined the EU (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovenia and Slovakia), with two more joining in 2007 (Bulgaria and Romania). From the perspective of these countries, being part of the EU offered an opportunity for economic development and modernisation, including in the domain of work and work organisation in which greater convergence was one potential outcome. But the hopes of convergence between the NMS and the EU15 have not been achieved in all cases.

The NMS have low per capita GDP, high unemployment and weak employee voice, all of which contribute to comparatively lower job quality. Research by Eurofound (2009) revealed that many countries in eastern Europe have high rates of Taylorist or traditional forms of work organisation. These findings have been corroborated by an analysis on the prevalence of work types using the EWCS, confirming that in these countries ‘poorly balanced jobs’ and ‘low quality jobs’ are most dominant (Eurofound, 2012a). There is little improvement thus far: for instance, Table 9 shows that job discretion, cognitive demand and working time quality are low in Eastern European countries. Yet in other areas the situation is much better. Work intensity, for example, is lower in Eastern European countries.

Going beyond the institutional model, it should be emphasised that there are differences across the Eastern European countries, as can be seen in several of the tables in this report. For instance, different industry structures are found within the NMS group, as countries in central Europe have ‘high-road’ industries (such as the automotive and electronics sectors) that are mostly absent in southeastern Europe. Instead, ‘low-road’ sectors such as the clothing and textile industries make up a larger share of the economy. Some sectors in the NMS have attracted investment by multinational companies but much more frequently companies are small, relatively uncompetitive and not well integrated in the world economy. In addition, many enterprises in Romania and Bulgaria are vulnerable as they are situated at the end of the global value chain, which often means poor working conditions and job quality. In sum, southeastern Europe is still dominated by low value-added sectors and low-paid, vulnerable jobs.

The transition from a planned economy to a market economy in countries such as these brought about important shifts in economic activity. The restructuring was very intensive, involving a massive privatisation of formerly state-owned companies, a changing model of public services, and the inflow of foreign investments. At first, the outlook seemed promising, but the Great Recession hit southeastern Europe dramatically. For example, in Bulgaria the construction labour force doubled from 2004 to 2008, reaching 337,700 employees, and then dropped to 204,000 between 2012 and 2013.

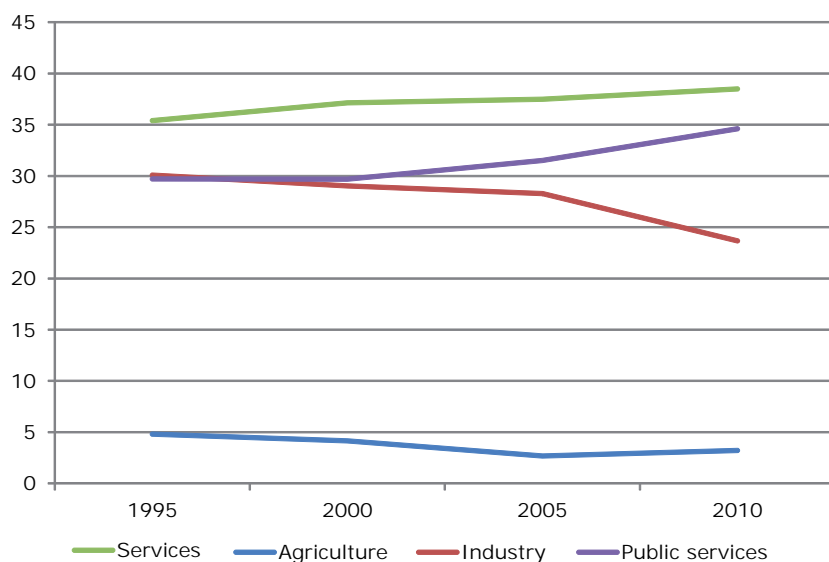
Different management models coexist within the region, including both modern practices favouring job discretion, and practices favouring paternalism and Taylorism. In countries such as Estonia and Hungary, learning organisation systems are in place. However, southeastern Europe did not develop such a management culture. Recent research in low-wage sectors in Bulgaria (Kirov et al, 2014) shows that worker flexibility dominates and a dual labour market emerges. The quality of work is affected by the lack of opportunities to develop skills and to express worker voice. This is particularly the case for older workers, women and ethnic minorities.

In Eastern European countries, both collective bargaining coverage and union density are low. From this perspective there are not sufficient ‘anchors’ for preserving or promoting job quality (Lehndorff, 2015). The state, in turn, is unable to enforce labour legislation. Instead, the thriving informal economy in this region pushes the labour force into precariousness, so that workers experience insecurity of income as well as employment. Many sectors of the economy are not covered by collective bargaining and employee representation. In this context, employees are voiceless and deprived of opportunities for expression, even informally.

Sectoral changes in job quality 4

In recent decades, many European countries have experienced changes in industrial composition, such as a relative decline in their manufacturing and agricultural industries and growth in private- and public-sector services (see Figure 22).

Figure 22: Changing industrial composition of EU15 Member States (1995–2010)



Given that average levels of job quality differ between sectors, changes in sectoral composition could shape trends in job quality and hence convergence and divergence in job quality across Member States.

The first aim of this chapter is to consider whether trends in job quality reflect changes occurring within industries or simply reflect changes in the sectoral composition of the overall EU economy. The distinction is important, as, in the latter scenario, the situation within specific jobs or industries could be more static than it would appear based on aggregate-level trends. Under such circumstances, overall improvements or declines in job quality do not necessarily reflect changes within sectors but rather compositional changes in the economy where sectors with better or worse conditions have grown or contracted at different rates.

To examine this issue, decomposition analysis was used to break down aggregate EU-level changes in job quality and working conditions into the effects of within-sector changes in average job quality ('within-sector effects') and the effects of changes in the relative size of different sectors ('between sector' or 'industrial-shift' effects). A full description of the method used can be found in Annex H. A cross-time harmonised sector variable is used with four broad sectors: agriculture (including fishing); industry (manufacturing, construction, and mining); services; and public services (industries dominated by the public sector). The armed forces are excluded.

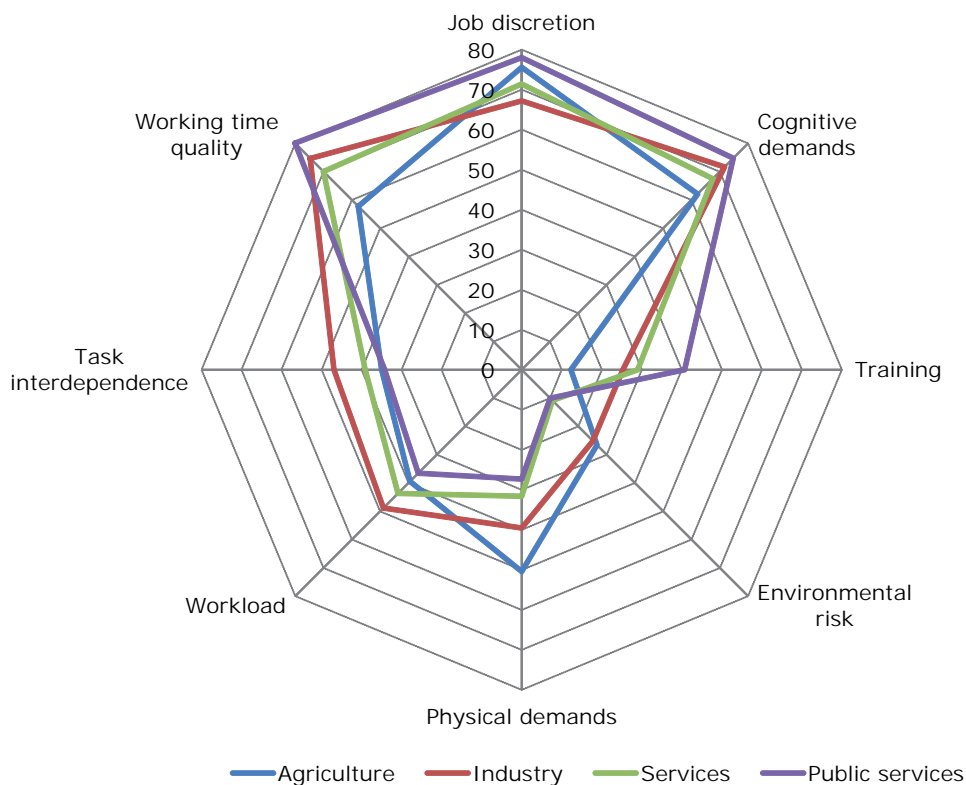
The second aim of this chapter is to compare rates of change in job quality across sectors, to examine the extent to which convergence and divergence of job quality is occurring between sectors.

Sectoral differences

The mean differences between sectors in job quality from 1995 to 2010 for the EU15 can be seen in Figure 23. In general, the public service sector tends to have high levels of job quality, while the agricultural sector has the lowest job quality.

The industry sector is notable for low levels of job discretion, high work risks and high work intensity, whereas the service sector is notable for lower levels of cognitive demand and working time quality in addition to low job discretion and low work risks.

Figure 23: Sectoral differences in job quality in the EU15 (mean score 1995–2010)



Importance of ‘within-sector’ changes

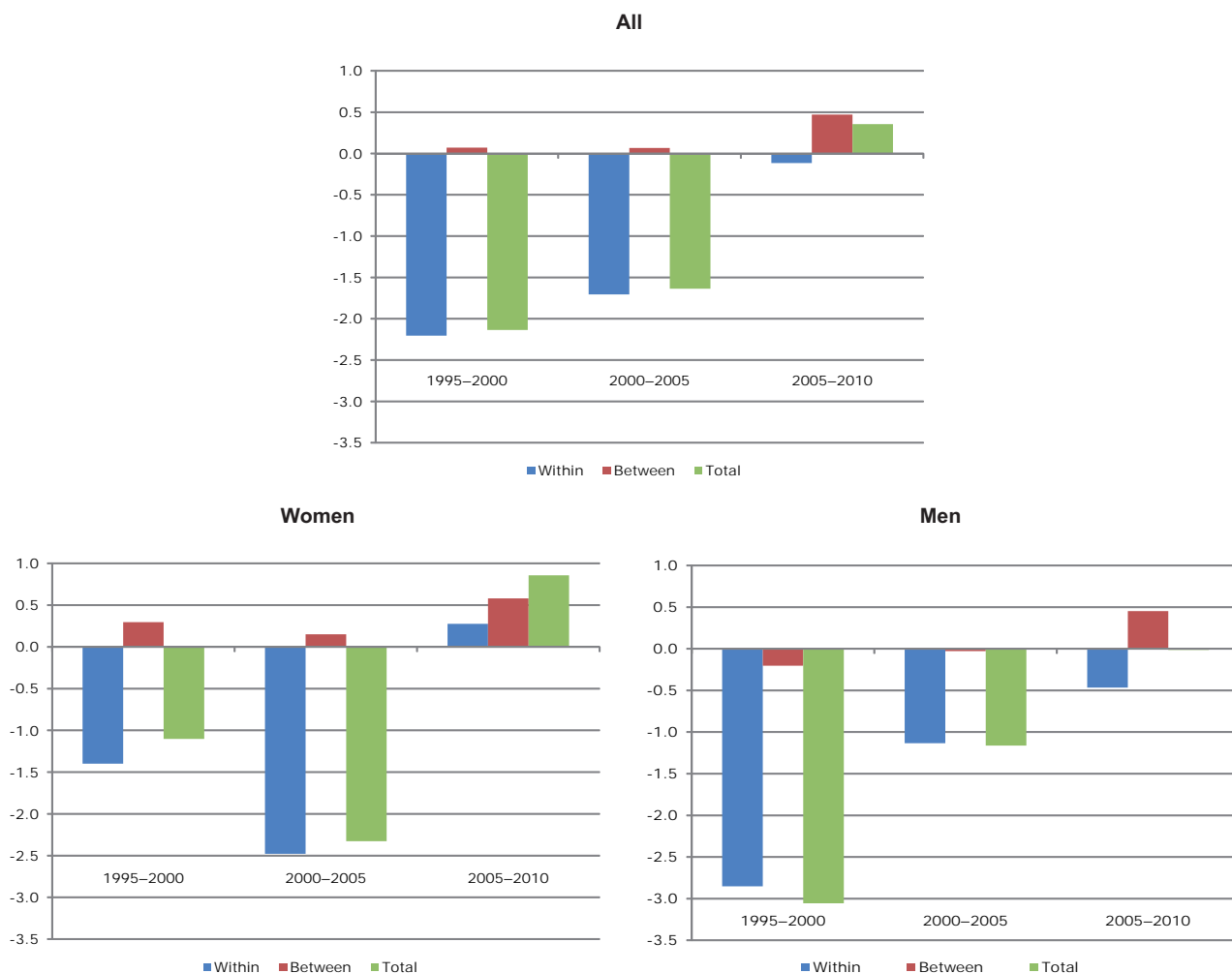
Across all components of job quality, the decomposition analysis indicated that trends in job quality have largely been driven by within-sector changes rather than between-sector shift effects. This means that trends in job quality were more dependent on developments within sectors than on changes in the broader industrial structure of the EU economy.

Rather than show this across all components of job quality, it was decided to illustrate this with regard to job discretion and cognitive demand, where the compositional effects are slightly more complex. First, in terms of job discretion, there has been a mix of within-sector and between-sector effects. The changes in job discretion between 1995 and 2000, and between 2000 and 2005, resulted from within-sector declines rather than the expansion or contraction of particular sections, that is, between-sector change (Figure 24). In contrast, from 2005 to 2010, a between-sector effect through a shift in the industrial composition of the labour market towards industries with higher levels of job discretion was detected (of 0.5 percentage points), whereas there was no real within-sector effect.

There is a gender effect, too. Closer inspection of the trends broken down by gender shows that between 2005 and 2010 women actually experienced an increase in job discretion of around 0.8 percentage points. This was driven predominantly by a shift in sectoral composition towards sectors with higher job quality (a between-sector effect of 0.6

percentage points). For men, in contrast, the counterbalancing effects of a negative within-sector effect and a positive between-sector effect led to no overall change.

Figure 24: Sector change in job discretion (EU15, 1995–2010)

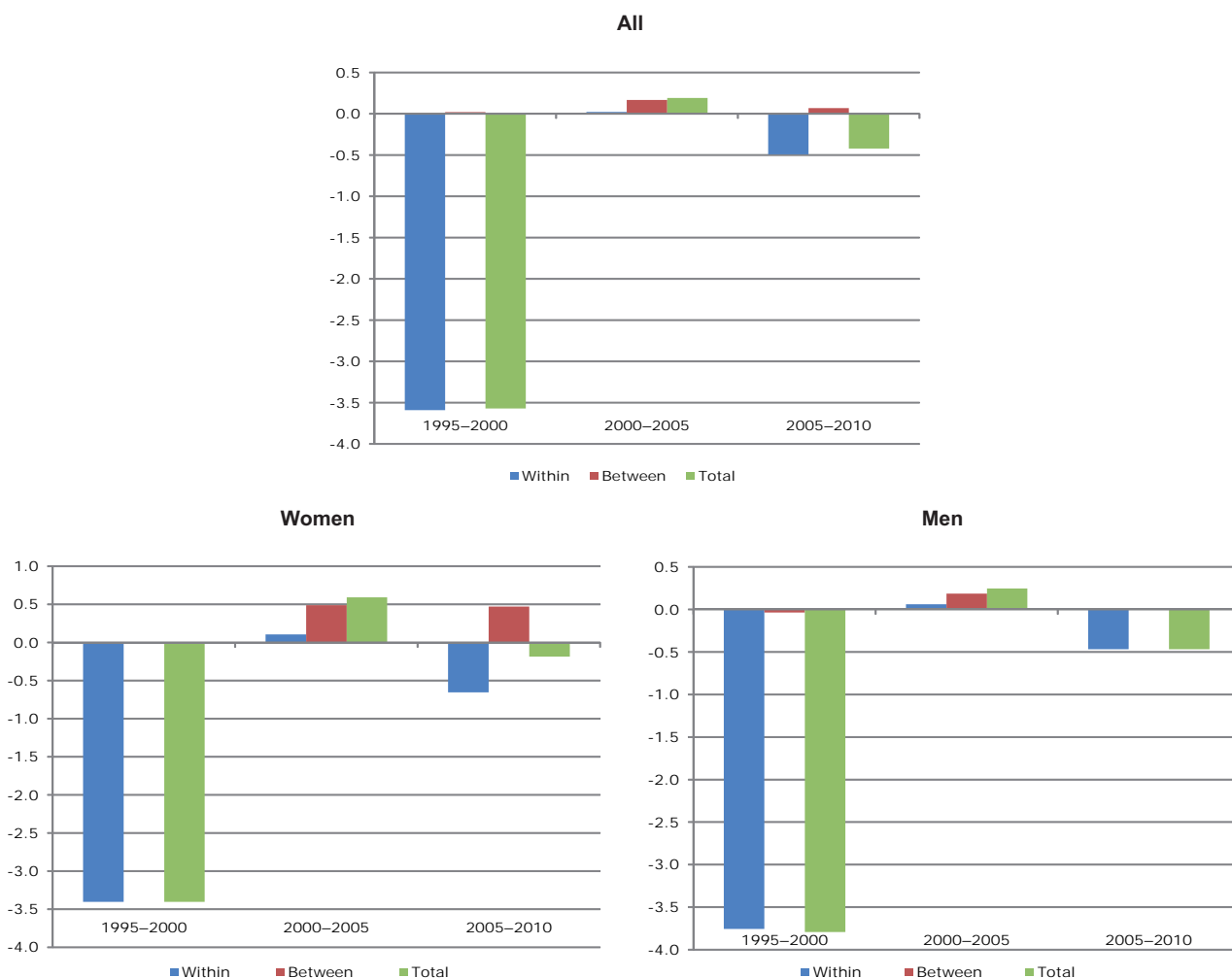


As with job discretion, changes in cognitive demands were largely driven by within-sector declines rather than between-sector shift effects. The trends for men and women were fairly similar, although for women the influence of a between-sector shift towards sectors with higher levels of cognitive demands was more apparent, both in the period from 2000 to 2005 and from 2005 to 2010 (Figure 25). This compositional shift effect was around +0.5 points in both of these periods. In the latter, this effect was large enough to largely cancel out a within-sector decline of a similar magnitude.

Comparative analysis of sectoral trends

Across most components of job quality, there were no significant differences in rates of change between sectors. One exception was that working time quality increased at a faster rate in the service sector than in industry.

Figure 25: Sector change, cognitive demands (EU15, 1995–2010)



Job quality in Spain and the ‘housing bubble’

The analysis in this report shows that in Spain there has been a significant improvement of job quality in terms of training, work risks, task interdependency and working time quality. By contrast, there has been a decline in job discretion and an increase in workload. However, it is unclear if these general improvements will be sustained, given the shifts in economic activity brought about by the economic crisis. The housing bubble experienced in Spain from the mid-1990s led to the share of employment in the construction sector growing from 9.2% in 1994 to 13.3% in 2007 (García Serrano, 2012). In this particular year, with Ireland, Spain was the EU Member State with the highest share of employment in construction. By 2011, however, the employment share of construction had decreased to 7.8%. Furthermore, between the end of 2007 and June 2009, the number of unemployed persons had risen from 290,000 to almost 700,000.

The burst of the bubble and collapse of employment in this sector is likely to have had an impact on job quality. First, together with agriculture and manufacturing, the construction sector is characterised by high levels of physical demand. Moreover, it is also characterised by low requirements in terms of cognitive demands and job discretion. This is confirmed by the low levels of educational attainment of workers in this sector, including the large number of early school leavers who went to work in construction between 2004 and 2007. Another aspect to be considered is the high

rate of temporary employment in this sector. These types of contract, and especially those of shorter duration, are characterised by having lower levels of job quality in such dimensions as environmental risks, job discretion and cognitive demands (Prieto et al, 2009). Finally, the construction sector is also characterised by high levels of environmental risks. Thus, by 2007, the number of accidents and injuries in the construction sector accounted for almost 26% of total injuries and accidents reported in the economy. By 2012, only 11% of total injuries and accidents at work took place in the construction sector.

Work and organisational characteristics 5

The aim of this chapter is to examine whether some work characteristics – occupation, extent of computer use, self-employment – shape the convergence and divergence of job quality across the EU15.

Occupation

The International Standard Classification of Occupations (ISCO) differentiates between 10 broad types of occupation. These 10 occupational groups can be grouped into four categories distinguished by skill level and type of work:

- high-skilled clerical such as managerial, professional and technical occupations (ISCO groups 1–3);
- low-skilled clerical, such as clerks and service workers (ISCO groups 4–5);
- high-skilled manual, including skilled agricultural workers, craft and trade workers (ISCO groups 6–7);
- low-skilled manual, including machine operators and elementary occupations (ISCO groups 8–9).

The tenth occupational group, armed forces, is not included in this analysis.

Job quality between occupational groups is likely to vary as a result of differences in skill level and task type. First, as skilled tasks are more complex and difficult for employers to control, skilled occupations are likely to have jobs with higher cognitive demand and job discretion. Second, as skilled workers are fewer in number, employers may need to offer better working and employment conditions to attract and retain them. Third, as manual tasks are more demanding and manual workers in greater supply, manual occupations are likely to have lower job quality, particularly with regard to work risks and work intensity.

Recent perspectives suggest that the differences in job quality between occupational groups will increase, resulting in greater polarisation in job quality between occupational groups (Eurofound, 2015). One perspective is that globalisation and liberalisation have had a particularly deleterious effect on the job quality of low-skilled occupations because they are relatively easy to transfer to low-wage countries. This reduces the capacity of European workers in low-skilled occupations to maintain or increase existing levels of job quality. Other perspectives suggesting greater polarisation between occupational groups draw on theories of skill-biased technological change (SBTC). One view of SBTC is that the introduction of information technologies complements non-routine skilled tasks and substitutes for routine tasks. Polarisation between high- and low-skilled occupations should increase, because workers in low-skilled occupations are more easily replaced by technology, which lowers their ability to secure better job quality unless their jobs are automated completely. A more nuanced view of SBTC is that computers can be used to substitute for certain cognitive non-routine tasks but not non-routine manual tasks, such as cutting hair. This means that reductions in job quality are most likely to occur in low-skilled clerical occupations that tend to perform non-routine cognitive tasks, as the threat of being replaced by technology is greater for workers in these occupations (Goos et al, 2009).

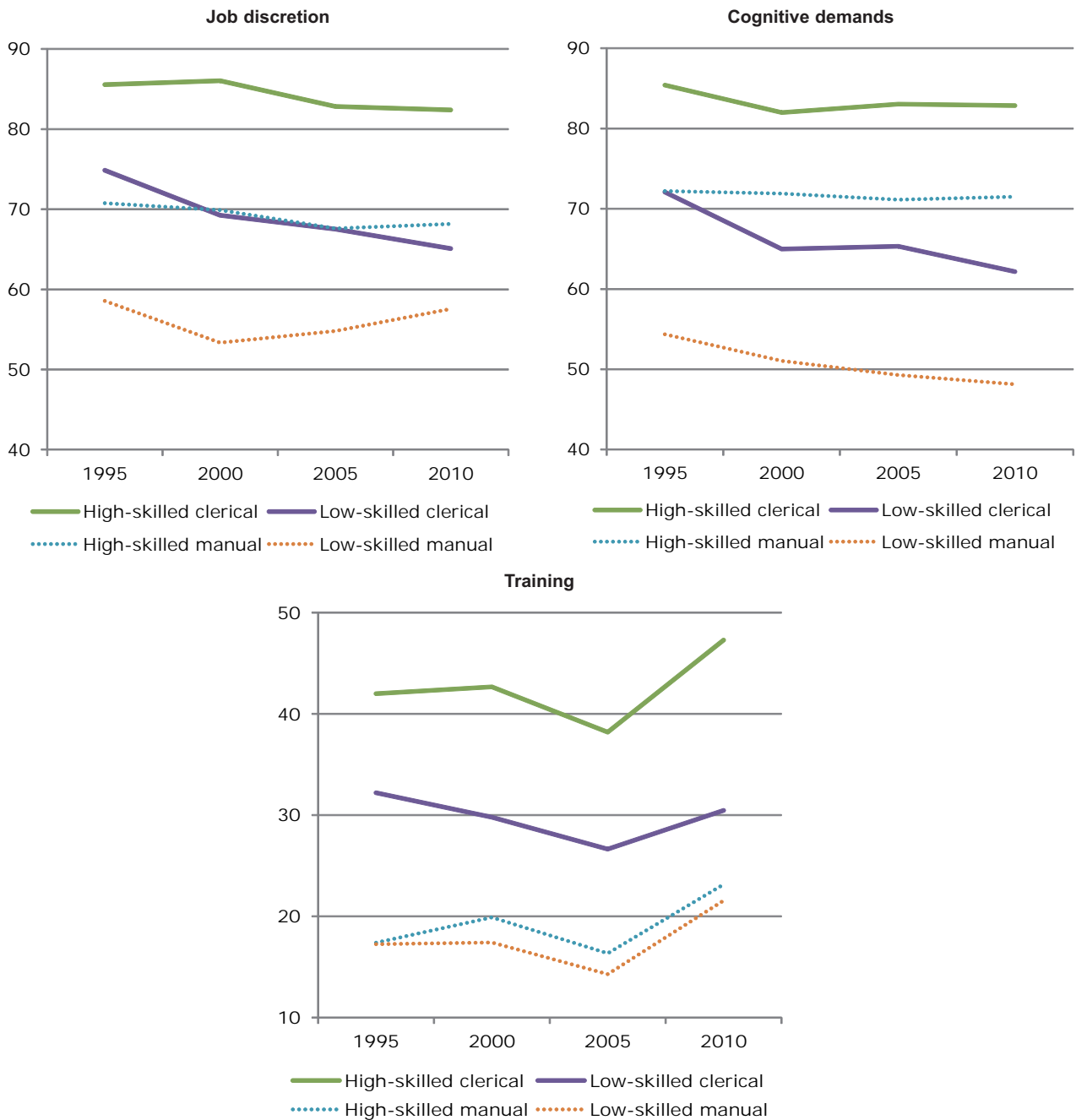
The results in Table 10 indicate that, as expected, high-skilled clerical occupations typically have higher levels of job quality, while low-skilled manual occupations often have lower levels of job quality.

Table 10: Job quality: average level by occupational group (EU15 1995–2010)

Job quality	Occupation		1995	2000	2005	2010
Job discretion	High-skilled	Clerical	85.56	86.04	82.84	82.40
	Low-skilled	Clerical	74.87	69.25	67.53	65.08
	High-skilled	Manual	70.77	69.90	67.61	68.17
	Low-skilled	Manual	58.57	53.35	54.81	57.56
Cognitive job demands	High-skilled	Clerical	85.40	81.99	83.05	82.87
	Low-skilled	Clerical	72.09	64.97	65.32	62.17
	High-skilled	Manual	72.21	71.89	71.14	71.51
	Low-skilled	Manual	54.36	51.04	49.30	48.13
Training	High-skilled	Clerical	42.01	42.67	38.19	47.30
	Low-skilled	Clerical	32.20	29.80	26.64	30.46
	High-skilled	Manual	17.39	19.89	16.35	23.15
	Low-skilled	Manual	17.25	17.41	14.28	21.55
Environmental risks	High-skilled	Clerical	9.89	9.42	9.11	9.11
	Low-skilled	Clerical	8.54	7.76	8.17	8.17
	High-skilled	Manual	28.35	30.24	33.67	33.67
	Low-skilled	Manual	23.43	24.82	21.35	21.35
Physical demands	High-skilled	Clerical	21.18	22.23	23.42	23.81
	Low-skilled	Clerical	28.11	28.95	28.76	31.55
	High-skilled	Manual	46.01	48.22	51.46	49.20
	Low-skilled	Manual	45.61	46.95	44.55	46.60
Workload	High-skilled	Clerical	39.34	41.29	42.40	42.46
	Low-skilled	Clerical	38.87	37.21	42.05	40.29
	High-skilled	Manual	44.27	47.04	53.99	48.02
	Low-skilled	Manual	42.70	45.17	44.56	47.42
Task interdependence	High-skilled	Clerical	35.63	34.93	39.87	38.93
	Low-skilled	Clerical	37.51	37.92	39.83	38.55
	High-skilled	Manual	43.50	42.66	45.78	43.85
	Low-skilled	Manual	43.32	42.70	42.84	40.61
Working time quality	High-skilled	Clerical	71.42	70.74	73.75	74.75
	Low-skilled	Clerical	75.54	77.75	78.88	79.22
	High-skilled	Manual	65.09	69.18	71.85	74.09
	Low-skilled	Manual	71.15	75.57	75.31	76.63

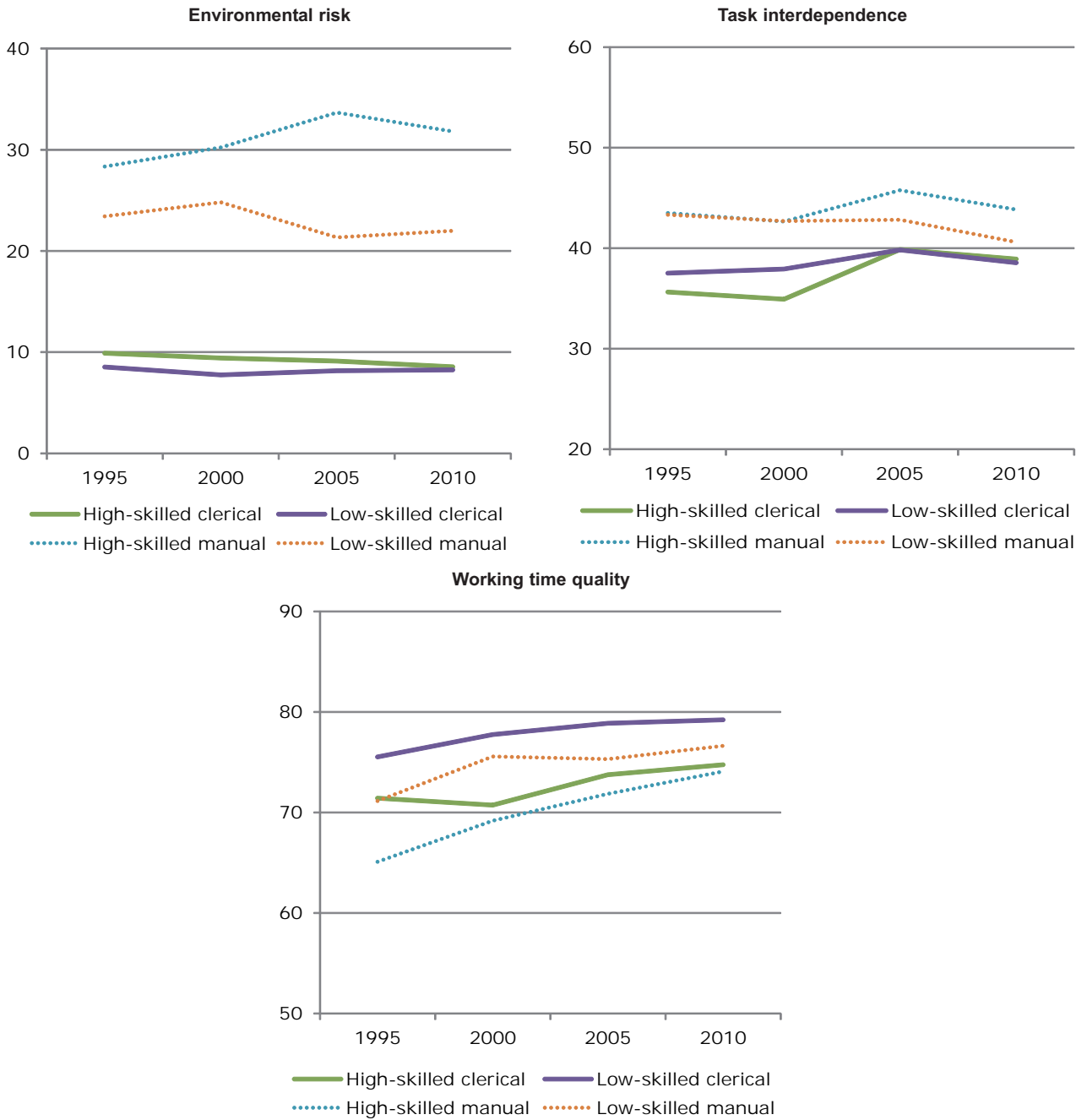
With regard to changes in job quality over time, the results show that job quality has converged and diverged among occupational groups. First, job discretion and cognitive demand declined at a faster rate, while training grew at a slower rate in low-skilled clerical occupations (Figure 26). Cognitive demand also decreased, but at a slower rate, in high-skilled manual occupations. These results therefore indicate that one key trend in job quality along occupational groups is the relative change in ‘skills and discretion’ for low-skilled clerical occupations. This has resulted in ‘skills and discretion’ diverging between high- and low-skilled clerical workers, and converging between low-skilled clerical and manual workers.

Figure 26: Skills and discretion: trends by occupational group in the EU15



For work risks (Figure 27), environmental risks increased at a faster rate for high-skilled manual workers. As a consequence, the level of environmental risk for high-skilled manual workers diverged from all other occupational groups, for whom environmental risk remained relatively static over time. There were no differences between occupational groups in the rates of physical demand. With regard to work intensity, rates of change in workload were not significantly different between occupational groups. But task interdependence increased at a faster rate in high-skilled clerical workers, leading to convergence with other occupational groups. Working time quality grew at a slower rate in high-skilled clerical occupations. This resulted in working time quality among high-skilled clerical workers converging with that of high-skilled manual employees, and diverging from that of low-skilled clerical and manual workers.

Figure 27: Job quality: trends by occupational group in the EU15



Job discretion, participation and stress in Nordic countries

The Nordic countries (Sweden, Denmark and Finland), with strong institutions and robust employment regulations, stand out as having higher levels of job quality. Contrary to the average trend in the EU, job discretion did not decline from the mid-1990s (and in Denmark and Finland job discretion increased). This is likely to be the outcome of an interplay of multiple factors. First of all, following the deep crisis of the early 1990s, it was a period of strong economic growth, rapidly falling unemployment and tightening labour markets. Secondly, large investments in education together with demographic/generational change spurred a sizeable upgrading of workforce skills, a key feature being the high level of education and participation of women on the labour market. Thirdly, high labour costs and high minimum wages set by collective agreements forced companies with low productivity and offering low-paid jobs out of the market.

These developments took the Nordic countries to the top of European rankings on innovation and productivity, and accelerated structural changes in the economy. Mainly, these were: the advances of the information and communications technology (ICT) sector (most pronounced in Finland and Sweden); specialisation in the high-end of global value chains in the traded goods sector; and the expansion of the financial and business-related services sector. Labour-intensive manufacturing based on low-skilled work had already largely been closed down during the crises of the 1970s and 1980s. Technological advances were pervasive throughout society, the Nordic countries emerging as the region with the highest rates of personal computer use and internet connectivity. This has been facilitated by the egalitarian income structure and high purchasing power among consumers. Also, the large public service sectors were early movers into the world of digitalised services and infrastructure.

In this way, the Nordic countries successfully managed to reap the benefits of globalisation and skill-biased technological change by upgrading the skills and education of the workforce and moving upwards in the value chains, instead of passively facing decreasing work complexity and job quality. However, routine-based semi-skilled jobs, typically with little discretion, were prime targets for technological rationalisation in most sectors. In addition, high minimum wages and strong trade unions largely closed off the ‘low-road’ to competitiveness, while a declining supply of low-skilled labour together with tight labour markets and relatively high mobility strengthened the negotiating position of employees in general. The benefits were relatively evenly distributed, supported by institutionalised traditions for participation, work environment cooperation, and egalitarian relations at the workplace. These conditions provided a context in which employees in this period (1995–2005) could often achieve greater discretion and better job quality.

Whereas the structural shifts in demand (between sectors and occupations) tended to eliminate poor quality jobs, the interplay between institutions and the supply and demand of skilled labour also created a negotiating climate and power relations that were conducive to improvements in job content, job discretion and an upgrading of job quality within many industries and occupations. This interplay was less pronounced in countries with higher unemployment, such as Finland and Sweden, than in Denmark and Norway where labour markets were tighter and job quality was improved (Berglund, 2014; Oinas et al, 2012).

This period was marked by Nordic management discourse about ‘empowerment, delegation and flat organisations’. In addition, however, it was also distinguished by favourable trends in job discretion (most notably in Denmark and Norway) and by increased stress levels (which may be viewed as the flip side of the Nordic emphasis on employee responsibility and participation – Eurofound, 2010). As perhaps indicated by the Swedish convergence towards the mean in terms of job discretion between 2005 and 2010, the combination of more flexible labour markets, higher unemployment, growing supply of migrant labour and increased inequalities in the wake of the crisis is likely to lead to a more dualised Nordic picture with growth in jobs that display low and high job discretion (Asplund et al, 2011).

Computer use

There are two contrasting perspectives on how computer use can affect change in job quality over time. One perspective is that information technologies are generally being used by managers to de-skill, simplify and intensify the work process – principally as a means of exerting greater control and lowering costs. The effect of de-skilling also reduces the capacity of employees to secure better job quality. As a result, high levels of computer use should be associated with a decline in job quality, particularly among non-routine jobs, and thereby result in job quality converging between jobs with different levels of computer use. An alternative view, drawing on SBTC, is that jobs using computers will be associated with growth in job quality, as workers with the higher-order skills needed to operate computers have more power in the labour market to improve their job quality and are better able to resist changes to working conditions that are considered harmful. Over time, this should result in the quality of jobs with high computer use diverging from that in jobs with low computer use.

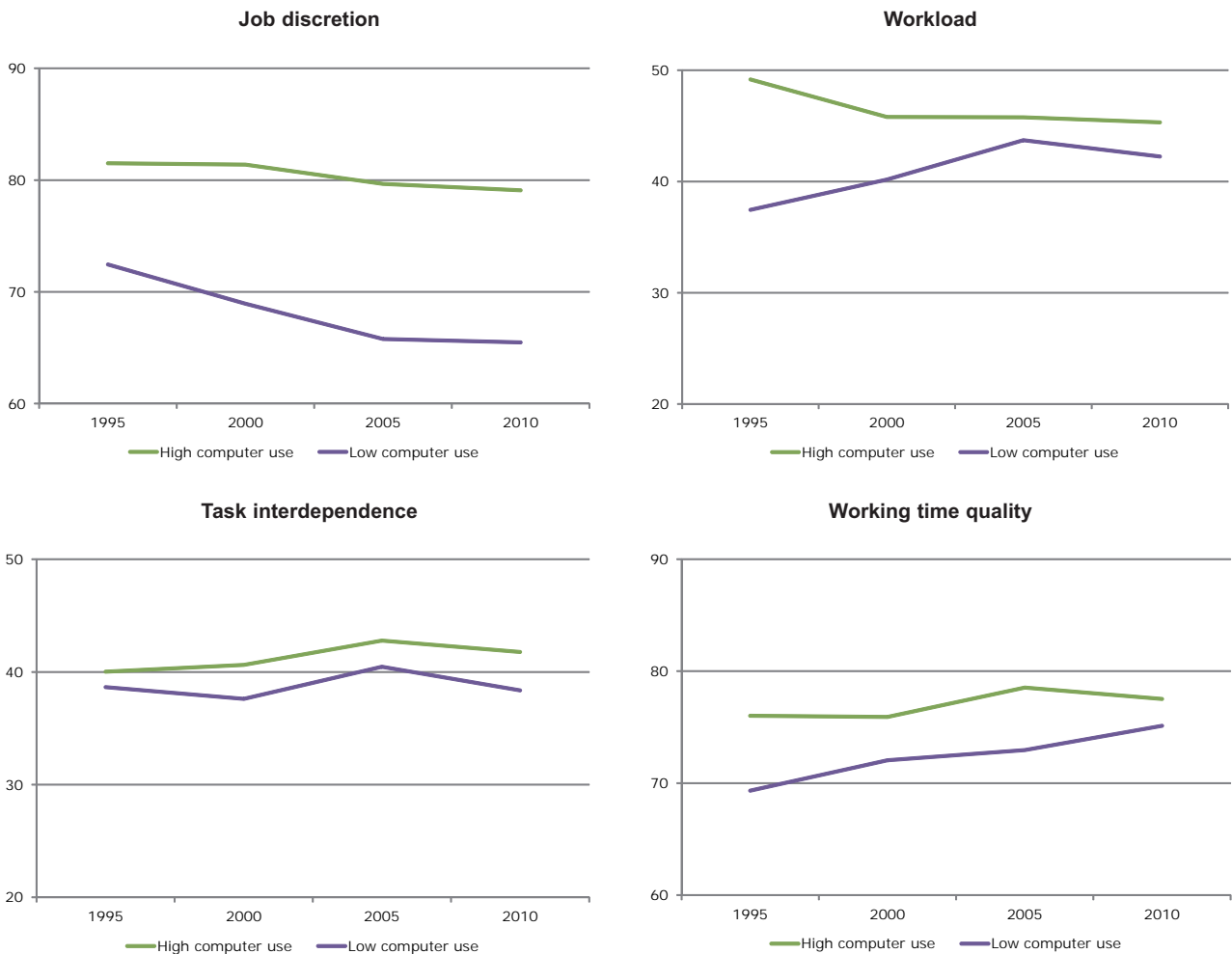
The results indicate that the use of computers at work is generally associated with higher levels of job quality. Computer use is associated with high job discretion, cognitive demand and working time quality, as well as lower work risks, that is, environmental risks and physical demands. These differences are shown in Table 11, which displays the mean levels of job quality in jobs involving low computer use (jobs using computers less than half the time) and in jobs with high computer use (jobs using computers for half the time or more).

Table 11: Job quality: Average level by high and low-computer use (EU15, 1995–2010)

		1995	2000	2005	2010
Skills and discretion					
Job discretion	Low computer use	72.44	68.94	65.77	65.47
	High computer use	81.50	81.38	79.66	79.09
Cognitive job demands	Low computer use	69.26	64.16	62.11	59.97
	High computer use	85.12	83.33	82.97	82.24
Training	Low computer use	23.79	23.92	20.53	25.34
	High computer use	46.16	45.18	38.07	46.86
Work risks					
Environmental risks	Low computer use	18.14	18.29	19.17	18.32
	High computer use	9.01	9.26	8.13	9.13
Physical demands	Low computer use	35.63	37.10	38.70	39.30
	High computer use	23.67	24.39	24.17	26.27
Work intensity					
Workload	Low computer use	37.45	40.18	43.72	42.24
	High computer use	49.18	45.80	45.77	45.31
Task interdependence	Low computer use	38.65	37.61	40.46	38.36
	High computer use	40.03	40.63	42.78	41.78
Working time quality					
	Low computer use	69.33	72.04	72.95	75.12
	High computer use	76.01	75.91	78.54	77.52

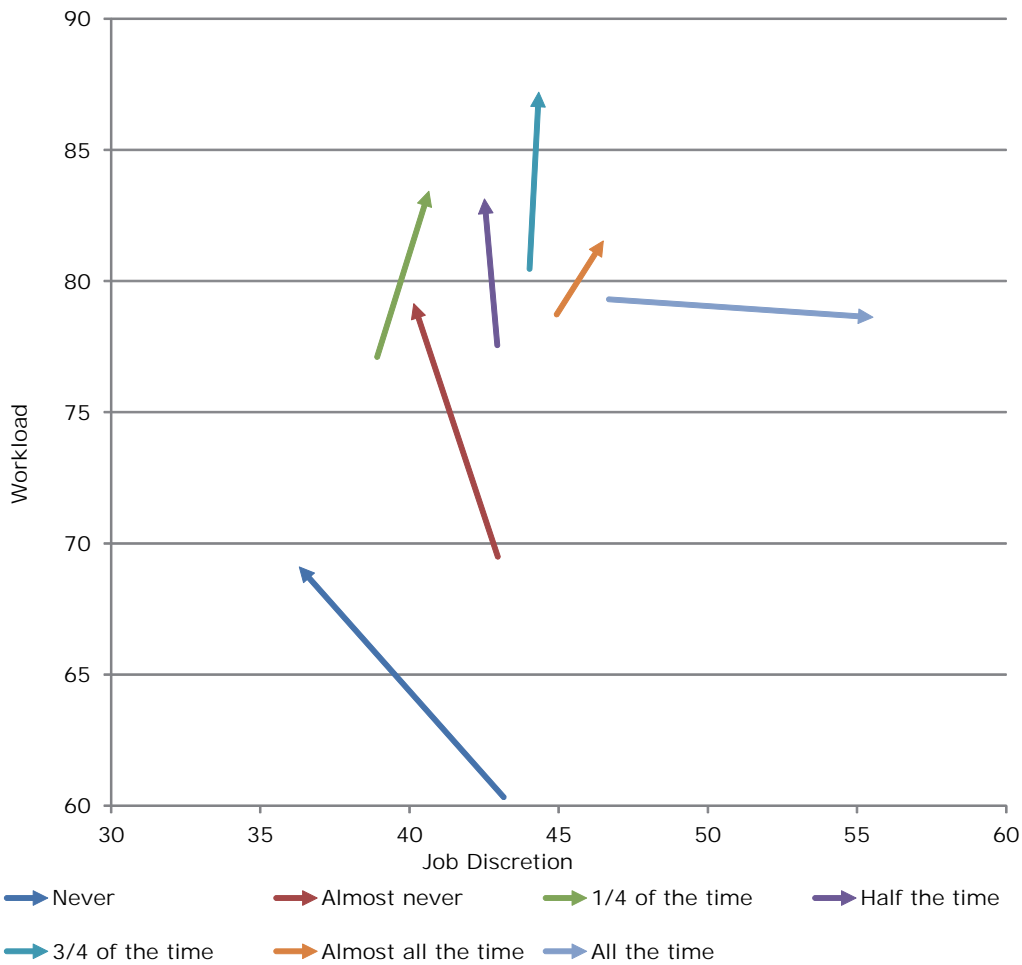
A low level of computer use was associated with faster increases in workload and led to a convergence in workload between jobs with different levels of computer use. This is illustrated in Figure 28, which compares the trends in job quality factors between jobs with low computer use and high computer use. Further analysis revealed computer use to be one of the key factors in the growth in workload when compared with other factors such as gender, age, education, occupational role and sector. This suggests that the changes occurring in jobs with low computer use are one of the main causes of the increase and convergence in workload across the EU.

Figure 28: Job quality: trends by computer use in the EU15



Jobs that do not involve the use of computers also recorded the largest increases in workload and the largest falls in job discretion. This is illustrated in Figure 29. According to job demands-control theory, jobs that combine low discretion and high workload are likely to be ‘high-strain’ jobs because the lack of control makes it difficult for employees to manage job demands effectively (Karasek and Theorell, 1990). Thus, from 1995 to 2010, jobs that did not use computers or used them sparingly were more likely to be high-strain jobs, which can have particularly harmful effects on employee well-being.

Figure 29: Workload and job discretion: trends by computer use (EU15, 1995–2010)



Trends in task interdependence and working time quality also appeared to be affected by the level of computer use (see Figure 28). Task interdependence grew at a significantly faster rate in jobs with high computer use, whereas working time quality grew at a significantly faster rate in jobs with low computer use. However, statistically, these differences became non-significant when occupation was accounted for in the analysis. This suggests that it is the differences in skills associated with computer use that are causing trends in task interdependence and working time quality to vary between jobs with different levels of computer use, rather than differences in computer use per se.

The complexity paradox

The decrease in job discretion and cognitive demands found in this report reflects a surprising and decreasing trend in work complexity. The stabilisation of the average indices between 2005 and 2010 may have resulted from cuts in jobs for young workers (these jobs having lower work complexity) combined with an ageing workforce, which suppressed the underlying trend. Indeed, within-cohort work complexity is steadily declining. This presents a real paradox, since the dynamics of a knowledge-based economy might be expected to have precisely the opposite effect, thanks to a number of factors, such as the development of white-collar work, the higher educational attainment of the workforce, increased computer use, the accumulated experience of an ageing workforce, and creativity and new ideas in general.

Indeed, research by Greenan et al (2013) on trends in quality of working life in the EU15 between 1995 and 2005 suggest that these structural factors all boost work complexity. This means that there must be a strong countervailing effect behind the downward trend in job complexity, for which Greenan and Lorenz (2010) suggest four possible explanations, relating to either an objective decline in work complexity, or to a changing subjective assessment of job complexity.

Growing standardisation of work content: This is fostered by the ways in which information and communication technology is embedded in new management practices that imply more formalisation and tighter monitoring of work effort.

Job polarisation: This offers another role for technology: skill-biased technological change has displaced those routine jobs in the middle of the wage distribution – like book keepers or bank employees – that involved reasonably complex tasks. The loss of such jobs offsets the increase in work complexity in jobs at the top of the wage distribution.

Skills mismatch: This relates to the employee feeling that the complexity of the job content does not match their skills level: employees are more skilled than ever and higher levels of qualification are continually requested, but the complexity of the tasks does not change.

Organisational change: Organisational change can drive an underestimation of the level of work complexity in a period of intense industrial restructuring, as workers compare their current job with their past job in which they developed their proficiency.

The absence of convergence in job discretion and cognitive demands may thus relate to the extent to which workers are involved in the innovation process. In some companies, a small fraction of the workforce in highly complex jobs at the top of the wage distribution is expected to display innovative behaviour at work; in others, a larger fraction (including with intermediate skills) is not as involved in workplace innovation. These differences could result in a varying propensity for innovation and patterns of innovation at the country level and, ultimately, to the efficient use of human resources throughout the careers of employees.

Self-employment

When compared with workers employed by an organisation, ‘genuine’ self-employed workers have significantly better job quality with regard to job discretion, cognitive demands, environmental risk and work intensity.¹⁴ But self-employed workers experience significantly more physical demands, have lower working time quality and receive less training. These differences are visible in the EU15 from 1995 to 2010. Despite these differences between the employed and self-employed, there was little evidence that the rate of change in job quality varied by employment status. The exception was working time quality, which increased at a faster rate for self-employed workers, in that the working time quality of self-employed workers converged towards the higher level of working time quality of employed workers.

¹⁴ See – for comparison and analysis – Eurofound 2013d and Eurofound, 2012c.

Effects of work characteristics in EU27 from 2000–2010

Occupational role

Significant differences in rates of change between occupational groups occurred for three components of job quality, although there was no clear pattern between occupational roles:

- job discretion converged between clerical and manual roles due to a faster rate of decline in high and low-skilled clerical roles;
- environmental risk diverged between high- and low-skilled manual roles since the rate of increase in high-skilled manual roles was significantly different from the rate of decrease in low-skilled manual roles;
- task interdependence converged across occupational groups as a result of the faster rate of increase in high-skilled clerical roles.

Computer use

High computer use was associated with slower declines in job discretion but faster increases in task interdependence. An outcome of this was a divergence between jobs with different levels of computer use in job discretion and task interdependence. Low computer use was associated with faster increases in working time quality, which resulted in convergence between jobs with different levels of computer use.

Employee characteristics: 6 Gender and age

The aim of this chapter is to examine the convergence and divergence of job quality with regard to the employee characteristics of gender and age.

Gender

Men and women may experience differences in job quality as a result of labour market structures and segregation. Gender segregation can be horizontal, with men and women more likely to be found in different occupations; it can be vertical, with women being more likely to be found in positions of lower seniority within occupations (Eurofound, 2013b). Although these differences in part may reflect ‘socialised preferences’ towards different types of work, gendered norms regarding male and female roles – both within the domestic and public sphere – shape access to employment and the types of work that men and women undertake.

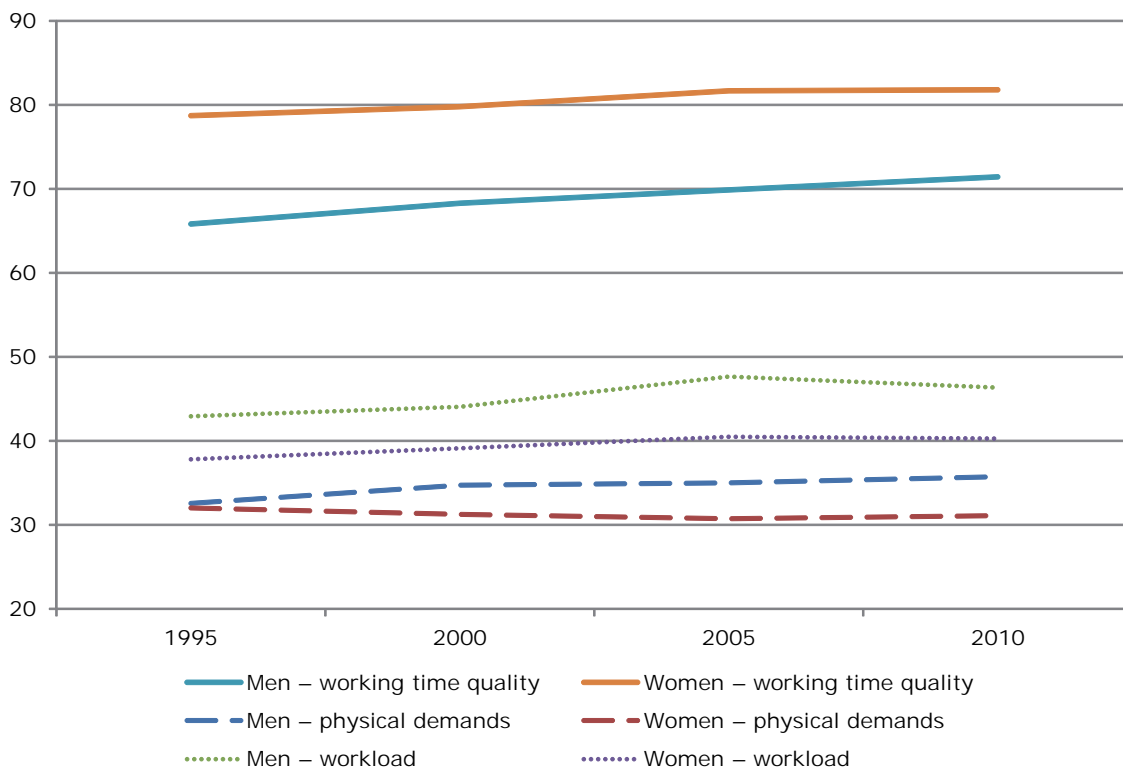
Constraints on working hours linked to domestic care may further restrict employment choices – for instance, lowering the number of paid hours’ work; in contrast, institutional factors such as childcare welfare policies help to increase levels of female participation and give the option of longer working hours. Discrimination in the labour market linked to gender norms and stereotypes regarding roles and ability may also cause vertical segregation (Rubery and Rafferty, 2013). These factors are therefore likely to lead to differences in patterns of job quality between men and women. EWCS data indicate that men tend to have significantly higher job discretion and cognitive demands but also significantly higher work risks and work intensity, as well as significantly lower working time quality (Eurofound, 2013b).

Table 12: Job quality: average level by gender (EU15, 1995–2010)

		1995	2000	2005	2010
Skills and discretion					
Job discretion	Men	75.53	72.59	71.28	71.30
	Women	74.17	72.90	70.96	71.51
Cognitive job demands	Men	76.71	72.91	72.84	72.51
	Women	69.52	66.19	66.71	66.30
Training	Men	29.82	30.09	26.17	35.37
	Women	30.43	31.03	28.65	34.04
Work risks					
Environmental risks	Men	19.03	19.69	19.66	18.82
	Women	10.81	9.98	8.96	8.89
Physical demands	Men	32.55	34.72	34.99	35.72
	Women	32.00	31.24	30.74	31.11
Work intensity					
Workload	Men	42.94	44.04	47.64	46.34
	Women	37.79	39.10	40.50	40.27
Task interdependence	Men	40.81	40.45	43.59	41.92
	Women	36.64	35.99	38.49	37.39
Working time quality					
	Men	65.84	68.29	69.88	71.44
	Women	78.72	79.79	81.67	81.82

In terms of trends over time, however, the current research highlighted two distinct findings regarding gender. On the one hand, there were no significant differences between men and women in rates of change in the skills and discretion components of job quality: job discretion and cognitive demands are declining at a similar rate for men and women, while training is increasing at a similar rate. On the other hand, there are key differences between men and women in the growth rates of work risks, work intensity and working time quality. In particular, physical demands and workload grew at a significantly faster rate for men, meaning that the level of physical demands and workload has diverged between men and women. In addition, working time quality grew at a significantly faster rate for men, indicating that working time quality has converged between men and women (see Figure 30).

Figure 30: Convergence and divergence in job quality by gender



Age

Age may affect job quality in a number of ways. A higher concentration of younger workers in entry-level jobs can reduce levels of job discretion, but this situation may improve with age as job tenure, work experience and seniority increases. At the same time, for older workers, age discrimination may restrict the types of jobs viewed as suitable. Cohort differences in levels of education due to changes over time in access to education may further restrict access to high quality jobs. There may also be gender differences linked to life-stage effects, where reductions in participation linked to childrearing for some women may limit employment to fewer hours of work.

Table 13: Job quality: average level by age category (EU15, 1995–2010)

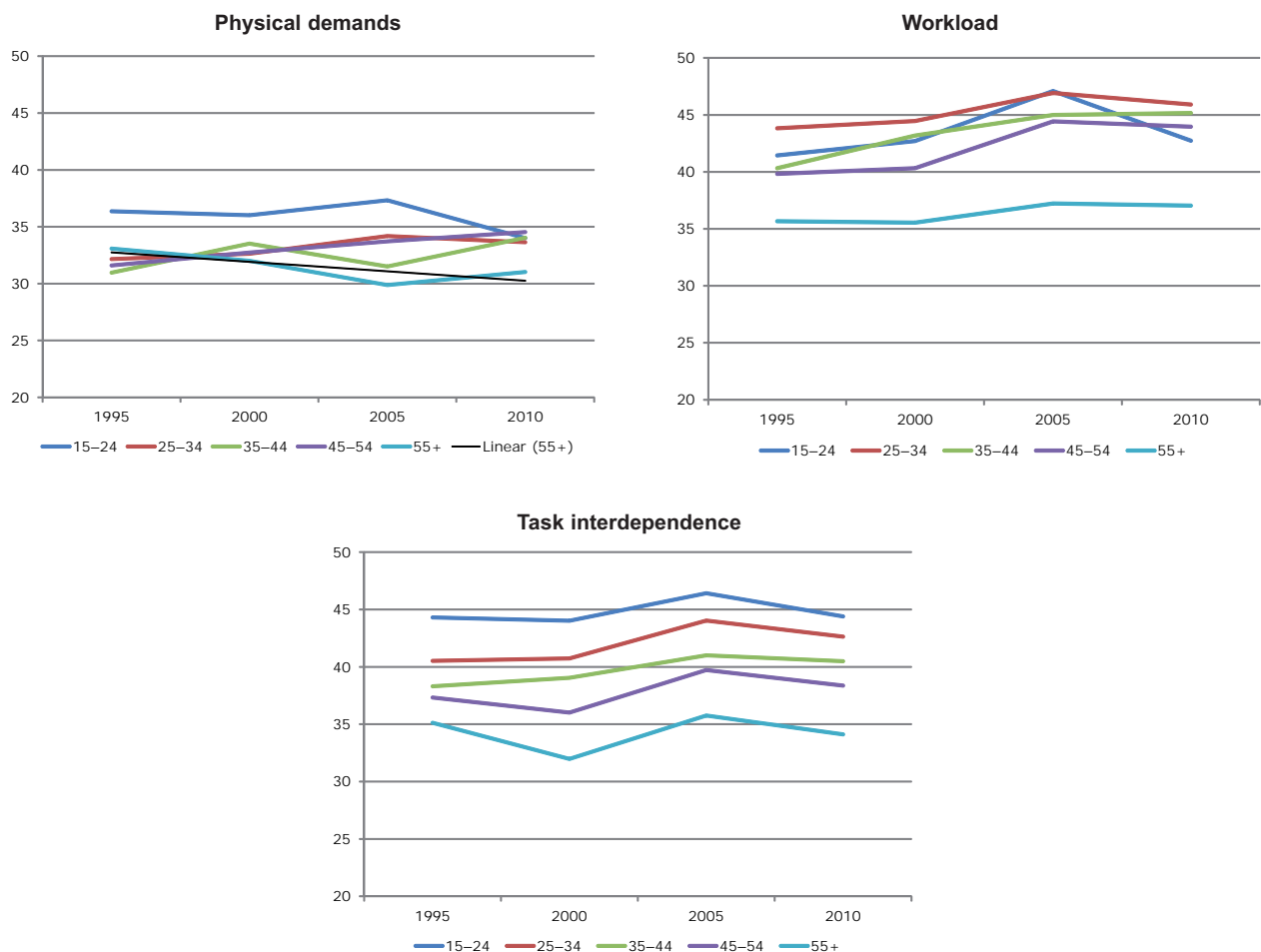
	Age	1995	2000	2005	2010
Skills and discretion					
Job discretion	15–24	66.63	60.06	53.69	57.19
	25–34	75.24	73.90	71.16	71.01
	35–44	76.59	74.30	74.43	72.95
	45–54	76.23	74.09	72.34	73.21
	55+	76.77	76.54	77.78	75.30
Cognitive job demands	15–24	66.39	63.79	59.57	62.01
	25–34	75.88	70.67	73.75	70.59
	35–44	75.78	73.31	73.26	71.06
	45–54	74.59	70.63	69.92	71.55
	55+	69.39	65.60	67.63	67.72
Training	15–24	32.26	30.19	22.20	32.23
	25–34	32.60	33.31	30.41	34.83
	35–44	31.91	31.91	31.30	37.64
	45–54	28.55	30.96	26.47	35.94
	55+	20.04	19.50	19.66	29.10
Work risks					
Environmental risks	15–24	17.05	16.46	17.05	14.38
	25–34	15.87	15.42	15.13	13.74
	35–44	15.03	16.04	14.26	14.56
	45–54	14.88	15.11	15.61	15.11
	55+	16.13	14.51	12.82	13.24
Physical demands	15–24	36.37	36.02	37.33	34.00
	25–34	32.16	32.63	34.18	33.64
	35–44	30.97	33.52	31.51	34.03
	45–54	31.60	32.74	33.71	34.53
	55+	33.08	32.01	29.87	31.02
Work intensity					
Workload	15–24	41.44	42.70	47.09	42.74
	25–34	43.82	44.47	46.93	45.91
	35–44	40.32	43.19	45.00	45.16
	45–54	39.82	40.32	44.43	43.97
	55+	35.67	35.55	37.22	37.04
Task interdependence	15–24	44.30	44.02	46.41	44.40
	25–34	40.52	40.74	44.03	42.63
	35–44	38.31	39.05	41.00	40.49
	45–54	37.33	36.02	39.72	38.36
	55+	35.12	31.97	35.75	34.11
Working time quality					
	15–24	73.85	76.74	77.01	81.13
	25–34	71.62	73.43	75.48	74.78
	35–44	71.26	72.78	74.20	76.28
	45–54	70.59	72.87	75.15	74.77
	55+	68.63	70.72	74.57	77.17

The findings indicate that, although younger workers tended to have lower-quality jobs (Table 13), the relationship between age and job quality was non-linear: job quality does not simply get better as age increases. A more nuanced understanding of the relationship between age and job quality can be obtained by examining job quality across five age groups: 15–24, 25–34, 35–44, 45–54 and 55+.

On the whole, rates of change between different age groups were similar across the different components of job quality. In particular, there were no differences in rates of change between the three ‘middle’ age groups, that is, 25–34, 35–44, 45–54 years. The two main exceptions occurred with regard to the 15–24 age group and the 55+ age group. For instance, the 15–24 age group had a slower rate of increase in training, although this did not substantially alter the general picture of convergence in training between age groups.

The 55+ age group experienced significantly different rates of change in comparison to all other age groups for physical demands and both components of work intensity (workload and task interdependency). The trends illustrated in Figure 31 suggest that physical demands have declined in the 55+ age group, which contrasts with the upward trends in the other age groups. In addition, the level of work intensity has remained static in the 55+ age group, which contrasts with the upward trends in work intensity across other age groups. One outcome of this has been a divergence in work risks and work intensity between the 55+ age group and all other age groups.

Figure 31: Job quality: convergence and divergence by age group (EU15, 1995–2010)



Age and gender in the EU27 (2000–2010)

Within the EU27 cognitive demands increased at a faster rate for women, resulting in convergence of job quality between men and women, while environmental risk and physical demands increased at a faster rate for men, which resulted in work risks diverging between men and women. There were very few differences in rates of change between age groups across all aspects of job quality and no notable pattern of results.

Work intensity, labour market reforms and the generation gap in Italy

The findings of this report reveal that work intensity increased in 1995–2005 and remained relatively stable in the subsequent period (2005–2010). The case of Italy provides an example of some of the potential underlying dynamics of such intensification, where two main drivers of work intensification can be distinguished: the changes in the balance of power between employers and employees due to reform of the Italian labour market; and the structural changes in the Italian economy, including technological change. Both drivers have led to an intergenerational imbalance with younger workers being most affected by work intensification.












In Italy, such work intensification comes in a period characterised by major reforms of the Italian labour market aimed at increasing flexibility through a reduction of employment protection legislation (EPL) for temporary workers. In the mid-1990s, the significant restrictions imposed by EPL on dismissals was felt to deter job creation, reduce worker motivation and increase absenteeism (Ichino and Riphahn, 2005; Jacob, 2010). The ‘Treu’ and ‘Biagi’ reforms in 1997 and 2003 increased the flexibility of the Italian labour market by promoting flexibility at the margin (for instance, deregulation of temporary contracts and/or the development of agency work and other contracts of limited duration) while maintaining existing rules on permanent contracts (Boeri, 2011). In Italy, temporary work was often used by firms as a source of cheaper labour, taking advantage of the large regulatory gap between this kind of employment and permanent contracts, rather than as a tool to adapt the production process to changing circumstances, or to screen and evaluate new recruits. As a result, most temporary contracts were not transformed into permanent ones (Garibaldi and Taddei, 2013). In 2011, temporary employment exceeded the OECD average in the younger cohorts and was below average in older cohorts. In particular, 49.9% of employees aged between 15 and 24 years were on temporary contracts, twice the OECD average (Fornero, 2013). The economic crises magnified this intergenerational imbalance, with younger workers more severely hit by both unemployment and exposure to temporary contracts.

The ‘Fornero’ reform of 2012 was subsequently introduced to promote inclusiveness and dynamism in the labour market. The main idea was to preserve flexibility and reduce exit rigidities, and at the same time, limit the improper use of atypical contracts. The latter objective was sought by streamlining the range of available labour contracts, introducing some restrictions on the use of agency workers and increasing employer costs for fixed-term employment (Garibaldi and Taddei, 2013). Increased labour flexibility, however, continues to shape employee incentives and bargaining power (Franceschi and Mariani, 2014). Trade unions principally bargain with the aim of maximising the interests of permanent workers. This often leaves young temporary employees at a disadvantage, as they may feel the need to demonstrate increased work effort to improve their chances of converting their position into a permanent job. High unemployment rates and the absence of alternative employment opportunities with better contractual arrangements, as seen among younger workers, further reduce employee bargaining power. A situation of high unemployment and absence of alternative employment further supports employers’ demands for more effort from workers and increased workloads to boost productivity, since employers know that temporary workers perceive a credible threat that their contract may not be renewed.

Overview and policy implications 7

A general aim of the European Union since its inception has been to promote and harmonise the quality of work and employment conditions. Given the diversity between European countries it is therefore of considerable interest to study the direction of developments in job quality across Member States to better understand whether job quality is converging towards a harmonised ‘European standard’ or whether Member States have separate paths of development. To this end, the general aim of this report is to examine the convergence and divergence of job quality in the EU15 from 1995 to 2010. The findings reveal that the convergence and divergence of job quality across Europe is far from straightforward, as there are various starting points from which the trends in job quality are observed, and convergence and divergence has occurred across many different dimensions of job quality.

Table 14: Patterns of convergence and divergence in job quality across the EU

	EU15			EU27			
	General change	Convergence-diverge	General pattern	General change	Convergence-diverge	General pattern	
1. Skills and discretion							
Job discretion	Decline	Convergence and divergence	Polarisation with harmonised decline 	No Change	Polarisation	Polarisation	
Cognitive job demands	Decline	Convergence and divergence	Polarisation with harmonised decline 	Increase	Convergence and divergence		
Training	Increase	Convergence	Harmonised improvement 	Increase	Convergence	Harmonised improvement	
2. Work risks							
Environmental risks	Increase	Convergence and divergence		Decrease	Convergence	Harmonised improvement	
Physical demands	Increase	Convergence and divergence		Increase	Convergence with some divergence	Harmonised decline with some divergence	
3. Work intensity							
Workload	Increase	Convergence and divergence	Harmonised decline 	Increase	Convergence	Harmonised decline	
Task interdependence	Increase	Convergence and divergence		Increase	Convergence	Harmonised decline	
4. Working time quality							
	Increase	Convergence	Harmonised improvement 	Increase	Convergence	Harmonised decline	

Trends in job quality across the EU

In terms of overall trends across the EU15, five of the eight components of job quality studied in this report declined between 1995 and 2010 (Table 14).

The five declining components were all facets of work organisation: job discretion, cognitive demand, physical demands, workload and task interdependence. This suggests that there has been a general trend in the EU15 towards the simplification and intensification of work. This downward trend is most evident from 1995 to 2005; it may be that it is less evident from 2005 to 2010 because simpler, more intense jobs are more vulnerable to being lost during economic downturns.

The results derived from the analyses of the EU15 are consistent with results from other studies, including those examining change in work organisation using the EWCS dataset but over earlier time periods and using different methodologies (Eurofound, 2006; Eurofound, 2012a; Green et al, 2013; Greenan et al, 2013) and those studies employing different datasets, such as Gallie et al (2004) who reported declines in job discretion in the UK from 1992 to 2001.

Similar findings to those for the EU15 (1995–2010) were found from the analysis of work organisation in the EU27 from 2000 to 2010 – namely, increasing levels of workload and physical demands. But there were also differences in the trends for job discretion (for which there was no change), cognitive demand (which increased) and environmental risk (which declined). These differences may be partly explained by the different starting points of the analysis (for instance, much of the change in job discretion in the EU15 occurred from 1995 to 2000) and also the range of countries studied: cognitive demand, for instance, showed significant upward trends in many NMS and in some EU15 countries from 2000.

A further feature of the results for the NMS was the variety in trends within this group of countries, with Bulgaria in particular standing out as experiencing declines in job quality across many aspects of work organisation.

Two components of job quality increased over time in the EU15 from 1995 to 2010 and the EU27 from 2000 to 2010: training and working time quality. For training, the main increase occurred from 2005 to 2010, which may indicate that the increase was largely a response to the economic downturn or due to the greater destruction of jobs with lower job quality. In contrast, the steady increase in working time quality does not appear to have been substantially affected by the Great Recession, although the 2010 data may be too recent to permit the detection of longer-term effects. Training and working time quality are also human resource practices that are often covered by formal organisational or national policies. This may indicate that job quality has improved in areas that are more subject to formal human resources policies or collective bargaining (such as training and working time) but that it has declined in areas that are less subject to such approaches (such as work organisation). Again, these trends in training and working time quality are similar to earlier studies using EWCS data.

Convergence and divergence of job quality across the EU

Turning to the convergence and divergence of job quality between countries, there is evidence of convergence across the EU15 and EU27 in training, workload and working time quality. There is also evidence of divergence in job discretion and cognitive demand both between and within countries.

Drawing on the typology of divergence and convergence introduced in the introduction and presented in Table 1, three patterns of change at the EU-level are evident:

- a harmonised decline in the quality of workload – a converging and worsening pattern of job quality across the EU (See Table 14);
- a harmonised improvement in training and working time quality, which results largely from faster improvements in those countries with lower levels of training or working time quality, especially the Southern European states of Italy, Spain and Portugal, as well as the NMS;
- a polarised decline in job discretion and (in the EU15 from 1995 to 2010) in cognitive demand; this suggests a diverging and worsening pattern of job quality across much of the EU with regard to two key aspects of work organisation.

Thus, although harmonisation has been an important feature of changes in job quality across the EU, it must be remembered that there are still significant differences in job quality between many EU countries. Similar rates of change often mean these differences have remained fairly static over time, and divergence has occurred in key components of job quality such as job discretion and cognitive demand. National differences in job quality are still one of the predominant features of working life in the EU despite some convergent trends.

The results of this study broadly concur with the conclusions drawn from other studies of convergence and divergence in work and employment practices. For example, a review of studies on the convergence and divergence of HRM in Europe by Gooderham and Nordhaug (2010) suggests that, while convergence between countries has occurred for some HR practices, such as performance-related pay and contingent work (Gooderham and Brewster, 2008; Tregaskis and Brewster, 2006), national differences in HR practices are still prevalent and may even be increasing for some practices (Mayrhofer et al, 2011). Similarly, the findings of Green et al (2013) indicate that, while there was some convergence in work intensity, work risks and working time quality between EU countries from 1995 to 2010, national differences are still a key feature of European job quality.

Drivers of change in job quality in Europe

A further aim of the report is to examine the factors driving convergence and divergence between countries and across the EU as a whole. The impacts of some well-known key drivers have been examined: institutional and macro-economic factors as well as sectoral, work and employee characteristics.

Table 15: Convergence and divergence in job quality: institutional and macro-economic characteristics

	Institutional regime	Wage coordination	Trade union density	Employment protection	Welfare expenditure	GDP	Unemployment
1. Skills and discretion							
Job discretion	Nordic diverge		Diverge High trade union density, slower decline				
Cognitive job demands	Nordic diverge; others converge	Diverge High wage coordination, slower decline		Diverge High employment protection slower decline		Diverge High GDP slower decline	
Training		Converge then diverge High wage coordination, faster Increase					
2. Work risks							
Environmental risks	Diverge North-West slower growth	Converge High wage coordination, faster increase		Converge High employment protection, faster increase			
Physical demands	Diverge North-West slower growth	Converge High wage coordination, faster increase		Converge High employment protection, faster increase			
3. Work intensity							
Workload	Converge and Diverge North-West slower growth					Converge Low GDP, faster increase	Converge high unemployment, faster increase
Task interdependence							
4. Working time quality							
	Faster growth in North-West and Southern European regimes						

National institutions

The analysis of institutional factors used employment regime theory to classify countries into different types of institutional regime (such as Nordic and North-West) and to identify key national institutional characteristics that shape job quality, namely, trade union power (measured as the extent of wage coordination structures and trade union density) and national employment policies (measured by employment protection legislation and welfare expenditure). When the relationship of job quality to institutional regimes and characteristics was examined, the results were generally in accord with employment regime theory: for instance, job quality was higher in Nordic regimes and in countries with more wage coordination. However, the rate of change in job quality tended to be similar across most institutional regimes and relatively unaffected by institutional characteristics. This suggests that, although national institutional structures may

help to produce and sustain a certain level of job quality, they do not appear to be driving wide-ranging changes in the level of job quality between countries.

There were, however, a number of exceptions to the similar rates of change across institutional regimes.

In Nordic regimes, the decline of job discretion and cognitive demand was significantly slower, high wage coordination ameliorated downward trends in cognitive demand and fostered faster increases in training, while high trade union density ameliorated downwards trends in job discretion and stricter employment protection legislation slowed declines in cognitive demand. One conclusion from these results is that, while the downward pressures on the quality of work organisation are being felt equally across all institutional regimes in Europe, Nordic regimes have been better able to buffer the effects of these downward pressures as a result of greater trade union power and stricter employee protection legislation. A consequence of this has been an increasing divergence in job discretion and cognitive demand between Nordic regimes and other regimes. Another conclusion is that institutional characteristics associated with trade union power are also buffering the downward pressures on the skills and discretion component of job quality, which has led to a divergence between countries with high and low levels of trade union influence.

Another exception to the similar rates of change across institutional regimes can be seen in the divergent trends of work risks and workload between the North-West regime (Ireland, the UK) and others. But it is not clear if these trends result from the institutional characteristics of North-West regimes (such as low trade union power and little employment protection legislation) that were not associated with faster declines in work risks or workload. One possibility is that the declines in work risks and workload in North-West regimes are driven by an institutional characteristic not included in this study, such as improvements in the enforcement of health and safety legislation. Another possibility is that a non-institutional feature unique to North-West regimes drives these trends. What this unique feature is cannot be stated with certainty but it is unlikely to be one of the sectoral, work or employee characteristics included in this report, as these were accounted for in the analysis.

In addition, the relatively faster rates of growth of working time quality in Southern European and North-West regimes might suggest that these regimes are having a more positive effect on working time quality than Continental or Nordic regimes. However, these results are probably due to a ‘ceiling effect’ in Nordic and continental regimes: growth is limited in these regimes given that working time quality is already high. As such, although working time quality is improving, there is little evidence that the institutional factors studied in this report shape the growth of working time quality.

Macroeconomic factors

The conclusions regarding the effects of macroeconomic factors on job quality are similar to those on national institutions. Specifically, although macroeconomic factors appear to play a role in producing and sustaining higher job quality (which may be because countries with a high GDP can afford to implement better working conditions and employees in countries with low unemployment can secure better working conditions), they did not play a strong role in driving wide-ranging changes in levels of job quality between countries (Dobbin and Boychuk, 1999; OECD, 2004). Macroeconomic factors do, however, appear to influence changes in workplace demands. Cognitive demand declined and workload increased at a faster rate in countries with low GDP, while the simplification and intensification of work appears to have been greater in countries with lower GDP. This could be due to organisations in countries with low GDP making more effort to compete by simplifying and intensifying work. Faster increases in workload also occurred in countries with high unemployment, which resulted in workload converging between countries. This could suggest that employees in countries with high unemployment are less able to resist increases in workload or that they are more willing to increase workload as a means of securing their job. Alternatively, the downsizing of work organisations resulting in higher unemployment may simply increase the workload for the remaining workers.

Table 16: Convergence and divergence in job quality: individual, work and sectoral characteristics

Sector	Occupation	Computer Use	Self-employed	Gender	Age
1. Skills and discretion					
Job discretion	Diverge Low-skilled clerical, faster decline	Diverge Low computer use, faster decline			
Cognitive job demands	Diverge Low-skilled clerical, faster decline				
Training	Diverge and converge Low-skilled clerical, faster decline				
2. Work risks					
Environmental risks	Diverge High-skilled manual, faster increase				
Physical demands				Diverge Men, faster increase	Diverge 55+, decline
3. Work intensity					
Workload		Converge Low computer use, faster increase		Diverge Men, faster increase	Diverge 55+, slower increase
Task interdependence	Converge High-skilled clerical, faster increase				Diverge 55+, slower increase
4. Working time quality					
	Converge and diverge High-skilled clerical, slower growth		Converge Self-employed, faster increase	Converge Men, faster increase	

Turning to other characteristics that could influence job quality, the report examined mainly sectoral, work and individual characteristics.

Sectoral composition

Changes in the broad sectoral composition of the EU workforce appear to have minimal effects on the aggregate levels of job quality or patterns of convergence and divergence. Indeed, across a variety of indicators, aggregate level changes in job quality in Europe between 1995 and 2010 have been driven largely by within-sector changes rather than changes in the sectoral composition of the labour market.

At the same time, some small sectoral shift effects were detected and on several measures the effects of change in the sectoral composition of the labour market were stronger for women than for men. For example, between 2005 and 2010, increases in job discretion among women were mainly attributable to compositional effects due to a greater shift observed in female employment compared to men from sectors such as manufacturing to public and private service sector employment. Nonetheless, the effects of change in industrial composition on aggregate job quality levels were generally much smaller than the effects of within-sector change. In addition, the findings reveal that sectors have had little effect on the convergence and divergence of job quality across the EU.

Overall, this suggests that, while there are differences in the level of job quality between sectors, the convergence and divergence of job quality across the EU15 is not being driven strongly by broad sectoral characteristics or sector shift effects. But in interpreting the findings on sector effects, it should be noted that due to sample sizes and the need to harmonise sector categories across time, a more fine-grained classification of sectors was not achievable. It could be the case that the level of aggregation used conceals compositional changes or convergences and divergences occurring at a finer level of disaggregation. At the same time, the findings using two different levels of disaggregation (four categories and 11 categories) were fairly consistent.

Work and employee characteristics

In contrast to sector effects, occupation and computer use had a more widespread effect on the rates of change in job quality. Specifically, occupational role influenced rates of change in six of the eight components of job quality, with many changes resulting in ‘negative’ patterns of convergence and divergence, such as the polarised decline of job discretion and cognitive demands between occupational groups, as a result of faster declines of these components among low-skilled clerical workers, and the divergence in environmental risk as a result of faster increases of this component among high-skilled manual workers.

One of the most notable changes was the change in the job quality of low-skilled clerical occupations – specifically, faster declines in job discretion and cognitive demand and slower increases in training – and the increasing polarisation between high-skilled clerical work and other occupational groups. These changes are in accord with theories of skill-biased technological change (SBTC), and they suggest that such changes might be driven by the introduction of new technologies in a way that decreases the quality of low-skilled clerical work but not high-skilled clerical work. While these changes may favour high-skilled occupations on the whole, they may have a downside, as the rate of growth in working time quality was significantly slower in high-skilled clerical jobs.

The relationship of computer use to job quality found in this report was generally in accord with SBTC perspectives. The use of computer technologies in jobs appears to play a role in producing and sustaining high-quality jobs and a strong role in driving improvements in job discretion and workload. An implication of this is that jobs with low computer-use may be particularly susceptible to the simplification and intensification of work and to becoming high-strain jobs. Based on SBTC, these changes may be occurring because the higher skills of workers using computers mean they have greater capacity to secure better work and employment conditions. But as the changes were restricted to job discretion and workload, they may also simply result from differences in the way that computers systems are being used or designed. For example, increasingly complex computer technologies may offer employees more discretion in how to do a task. An alternative explanation for the changes in job quality related to computer-use is that they are simply the result of greater penetration of computers into jobs with, for example, high discretion and low workload. However, there is little evidence for this, as computers have penetrated into a wide range of jobs with different levels of skill, discretion and workload. Caution must also be urged when considering the applicability of these findings across all jobs that use computer-based technologies. The measure of computer use did not assess how computers are used (such as mobile work or email use) or the types of computer-based technologies. These differences might have had a strong effect on changes in job quality. For example, workload might have increased in high computer-use jobs involving mobile technologies.

Young workers (aged 15–24 years) and female workers tended to have jobs with lower discretion and cognitive demand and there was no evidence that these differences were converging or diverging. In contrast, there was some evidence of changes in gender and age differences in job quality for work risks, work intensity and working time quality. Men in particular tended to have higher work risks and work intensity, and were experiencing faster increases in physical demand and workload, resulting in greater polarisation in work risks and work intensity between men and women. Older workers (55+) also appear to be experiencing faster declines or slower growth in work risks and work intensity, resulting in divergence from other age groups. Taken as a whole, the results indicate that increases in work risks and work intensity may be particularly problematic in male workers aged 15–54 years, and that workers over 55 are more likely to leave jobs with higher work risks either voluntarily or involuntarily.

In sum, the analysis shows that convergence and divergence occurs at different levels of analysis: from the macro-level down to the individual level. An implication of this is that job quality can converge at one level but diverge at another. For example, in Table 14 it is evident that the general trend in workload across countries was towards greater convergence (that is, a harmonised decline) although there were countervailing divergent trends in workload with regard to individual differences in gender and age. A further general observation is that institutional, work and employee characteristics appear to play a role in driving changes in work organisation (such as job discretion, cognitive demand, work intensity and work risks) but less so with regard to training or working time quality. This might indicate that the convergence in training and working time quality is being driven by supranational changes occurring across the EU, such as changing norms or EU-wide legislation.

Policy perspectives

The findings of the research confirm that job quality is shaped by multiple factors. For this reason, it is methodologically difficult to establish simple and direct causal links between national or European policy initiatives and outcomes in terms of job quality. Explanations thus need to be supported by social theory and the contextual knowledge of experts in the field, such as those who have contributed to this report from various national angles.

The picture appears uneven in terms of the impacts that policy decisions have. Social scientists and policy observers have frequently pointed out how the issue of job quality tends to lessen in importance when employment creation or competitiveness take precedence in European or national policies, such as in times of high unemployment. This may be due to a misconception that a trade-off exists between the quantity and quality of employment; it may also be due to political choices and issues of power, as well to as the limited capacities of social partners to pursue job quality at the European level (Bothfeld and Leschke, 2012). Moreover, the evidence is clear that institutions continue to make crucial differences in various aspects of job quality, and that employment regimes continue to account for some of the observed divergence between countries.

Convergence in job quality was most notable in terms of three components:

- workload;
- training;
- working time quality.

There were, however, important differences in the nature of this convergence, as according to the pattern of convergence/divergence in job quality adopted for this analysis (Table 1), workload quality display a harmonised decline across Europe, whereas both training and working time quality display a harmonised improvement.

The downward convergence in quality of workload may be partly explained by the competitive pressures of a globalising economy, by frequent downsizing, or by power shifts between unions and employers or between organisations and employees. Judging by the results of the research, these trends appear to be more acute in jobs that do not use computers; policy initiatives could be targeted towards such jobs.

The findings on convergent improvement in training and working time quality also suggest some policy impact. Here, European working time directives and various training initiatives at the European, national or regional levels may have contributed to some formalisation of HR practices conducive to better quality in these areas, particularly in those Southern European countries that started from a lower level. However, room for improvement can still be seen in this area (Eurofound, 2013c).

A further interesting finding is that although job discretion and cognitive demands appear to have declined across the EU overall, improvements were concentrated in the already-favoured Nordic countries (one possibility is that a stronger presence of trade unions in these countries continues to limit declines in cognitive demands and job discretion). Taken together with the general increase in workload, the general declines in job discretion and cognitive demand nonetheless may mark a worrying development: instead of working smarter, European workers may end up working harder in less interesting jobs. In terms of occupational differences, lower-skilled clerical occupations appear to have borne the brunt of this decline in the quality of work and are also the group losing out the most on training. This suggests that the good practices of work organisation and workplace innovation that have been developed in Nordic countries (as well as parts of Continental Europe) have not been transferred to other contexts to any large extent, possibly because for successful implementation they need to be embedded within the wider institutionalised traditions of collaboration between social partners. Furthermore, as bargaining coordination and union density appear to have a favourable influence, especially on job design, policies aimed at decentralising collective bargaining and weakening union power present further potential risks for job quality.

In terms of health and safety in the workplace, the absence of any detected policy impacts is notable regarding levels of work risks. The introduction and enforcement of occupational health and safety measures do not appear to have made any favourable or harmonising impact on the work risks studied in this report (although in North-West economies the change in work risks was more favourable. This may partly reflect differences in industrial composition between countries or, possibly, a consequence of a tendency in those countries to outsource work to smaller businesses to circumvent existing regulations. At the same time, the notion that the shift to a service economy and increasing automation of previously more challenging physical work will lead to a decline in work risks is not supported by the broad trends, particularly in countries with more coordinated economies such as Belgium and France that have experienced some of the fastest increases in work risks.

Male workers, more likely to undertake more hazardous work, faced larger increases in these risks. For workers aged 55 and over, work intensity and work risks have increased at a slower rate than for other age groups; this may, however, indicate some self-selection of older workers who leave overly stressful or hazardous jobs sooner rather than reflecting greater stability in the conditions of the jobs undertaken by older workers.

In spite of the overall picture, collective actors and policymakers should bear in mind that improvements in job quality are possible at the institutional and company level. Engaging with examples, cases and success stories may render 'job quality' more accessible to practitioners and support collective actors and policymakers in generating and sustaining commitment to these issues.

Policy pointers

Political input still required: A central conclusion from this report is that improving job quality continues to require dedicated political effort. Economic and technological change alone do not automatically advance job quality or remove unfavourable working conditions.

Ageing workforce needs attention: Demographic changes such as ageing workforces in many countries are also unlikely to trigger improvements without policy and collective actors addressing the issue. Work risks in the face of overall ageing workforces will require ongoing and enforceable health and safety efforts on all levels, as older workers are likely to have fewer possibilities to leave the labour market in the future due to restrictions on early retirement and disability benefits. As the options for early exit become more restricted and the health impacts of job strains accumulate, efforts to improve job quality need to be reinvigorated across the entire life course.

Gender aspect requires attention: Other demographic changes such as the feminisation of the workforce are likely to have varying impacts across job quality dimensions. The equality impact of measures that seek to improve job quality therefore requires careful consideration. Furthermore, the health hazards of women's work should not be left unrecognised.

Importance of representation: The findings are consistent with the role of unions and collective bargaining in limiting declines or promoting improvements in job quality. In particular, stronger collective bargaining appears to arrest declines in job discretion and cognitive demands and in further training. Policies that weaken or fragment interest representation may therefore jeopardise job quality.

Care need in implementing measures: Collective actors need to be careful in how they address job quality issues across the entire labour market, especially under the constraints of the recent economic crisis and austerity policies. Factors that improve job quality are more likely to be found in better organised, economically favourable sectors, regions or segments of the labour market. Conversely, in contexts of deepened divisions of labour, outsourcing and restructuring, there is a risk of shifting poorer quality jobs to newer or less organised sectors, regions, vulnerable groups or newcomers in the labour market. Avoiding further divergence in working conditions therefore requires deliberate effort to help spread successful arrangements and standards.

Holistic approach to policymaking: Policies to address job quality need to be integrated due to the inter-relationships between the different areas of job quality: investment in skills may prove ineffective if work organisation does not utilise the skills; increasing workloads may undermine eventual improvements in health and safety; the use of ICT may mean that lower-skilled jobs – rather than being automated, or being upgraded into more interesting jobs – simply become more tightly regimented.

‘Hard’ and ‘soft’ modes of intervention called for: Policy interventions in the institutionally varied contexts of Europe need to combine ‘harder’ and ‘softer’ modes of intervention. Harder modes of intervention might include greater regulation and its enforcement in areas such as health and safety as well as formalised monitoring and target setting where possible. Softer modes might include attention to social inclusion and possible segmentations and downward spirals in the area of employment, institutionalised mutual learning, and incentives and showcases for developing good practices or transferring such examples in a context-sensitive manner.¹⁵

Benefits of two-tiered approach: Most declines in job quality have occurred in areas that are largely the prerogative of companies and managers and which are harder to formalise in policy, such as work organisation. As such, a two-tiered approach may be needed to improve these aspects of job quality – circulating knowledge and good practices combined with supportive employment policies – as well as broader institutional and governmental support for implementation. Examples of good practices and discourses aimed at improving work organisation can be found, particularly for sectors or groups of workers with problematic working conditions.

Need for broad European dialogue on worlds of work: There are a number of challenges that limit effectiveness in addressing the issue of job quality: the specialisation of various policy areas; the limited resources and changing priorities of collective actors; the short-term approach of research projects; the need to generate the necessary commitment to the subject. To overcome these, a broader and on-going European dialogue on future worlds of work could be developed that connects issues of quality of work with other societal challenges.

¹⁵ Some examples of improving work organisation, skill utilisation and workplace participation can be found under the heading of ‘workplace innovation’ at EUWIN (<http://portal.ukwon.eu/euwin-knowledge-bank-menu-new>), a collaborative project of DG Enterprise. For selected sectors with problematic job quality, the EU-FP7’s walqing project has compiled good practice examples on the institutional and company level (<http://www.walqing.eu/webresource> and Ravn et al, 2012).

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This report examines the upward and downward trends in job quality across the EU from 1995 to 2010. The improvement and harmonisation of working conditions are core objectives of the European Union, but many factors affect job quality. The report determines the statistical significance of trends in key dimensions of job quality and maps the patterns of convergence and divergence. It offers an up-to-date analysis of changes in job quality across the EU, providing new insights to inform policymaking. The study concludes that dedicated political effort is still needed to improve job quality since this does not appear to be an automatic consequence of economic or technological development.

The European Foundation for the Improvement of Living and Working Conditions (Eurofound) is a tripartite European Union Agency, whose role is to provide knowledge in the area of social and work-related policies. Eurofound was established in 1975 by Council Regulation (EEC) No. 1365/75, to contribute to the planning and design of better living and working conditions in Europe.

