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Changes in the Structure of Employment in the EU and Their Implications for Job Quality

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Summary

The number of people in employment in the EU as a whole has tended to increase over the past decade or more (before the current economic crisis). Equally, while the number of jobs in the EU may have expanded over this period, the performance in achieving the other main objective of the Employment Strategy – improving job quality – which has been given the same importance as increasing job numbers, remains uncertain. Indeed, there have been few systematic attempts to throw light on developments as regards this strand of the policy, primarily because of the difficulty of both defining and measuring job quality. The concern here is precisely with this aspect of employment performance across the EU, i.e. to examine changes in job quality alongside those in job numbers to obtain a fuller perspective on developments and to identify how far an increase in the number of employed has been achieved at the expense of job quality. It is evident that the growth of employment which has occurred since the mid-1990s has been accompanied by structural changes in the types of jobs that are performed, in terms of the nature of the tasks involved, the sector of activity in which they are located and the terms and conditions applying to them. Many aspects of these changes in the structure of employment are well documented – the continuing shift from agriculture and manufacturing to services, the shift from manual to non-manual jobs, the increase in part-time jobs and, in a number of countries, the expansion of jobs with temporary contracts of employment.

The concern in this study – covering most of the EU member states over the period 1995-2005 – is not so much to examine these changes as such, though they underlie much of the analysis, but to consider their overall implications for the nature of the jobs in which people are employed across the EU and, in particular, for job quality. A job is defined as a particular occupation in a particular industry. These jobs are ranked according to their relative wage or their relative skill intensity. Given that these job rankings are relatively stable over time, we examine whether job expansion mainly took place for jobs in the lower or upper part of the ranking. Overall, the results suggest an increase in job quality in most of the countries included; in particular, the hypothesis of 'job polarization' could not be supported. The study further includes an analysis of differences with respect to job quality and changes in job quality for a number of other dimensions, such as gender, age, part-time working, fix-term contracts, etc.

In more detail, the results of the analysis show that, in general, there has been a movement of employment in almost all Member States across the European Union over the past ten years towards higher paid jobs which seem to require higher levels of education – in so far as this can be deduced from the levels attained by the workers employed in them. This has occurred at the same time as the number of persons in work has risen, though to differing extents in different countries, suggesting that, in broad terms at least, the European Employment Strategy objective of more and better jobs has been

achieved. Nevertheless, this dual objective has been achieved to a greater extent in some countries than others – in Ireland and Slovenia more than in the Netherlands, Spain or Italy, where growth in the number of jobs seems to have been accompanied by little if any improvement in job quality, as measured by the indicators used here, or than in Portugal, where improvements in job quality have been associated with little or no growth in employment. It should however be emphasized that the measure of changes in job quality, which is the focus of the study, is only a partial indicator of the actual changes in quality that might have occurred, even assuming that relative wages and education levels adequately reflect this aspect. The measure, therefore, is concerned to capture improvements in quality that occur as a result of shifts in employment between jobs, of more people working in jobs further up the wage or skill hierarchy than before. It does not capture, nor does it pretend to, improvements in the quality of given jobs, which is also an important part of the European Employment Strategy.

With respect to other characteristics of employed persons, the analysis suggests that there has been little change in the prevalence of fixed-term contracts of employment over recent years and little change in their incidence across the wage distribution – in the sense that they remain relatively concentrated in the lower paid jobs across the EU as a whole. It also suggests that there has been an increase in the proportion of jobs with long hours of work towards the top of the wage distribution. Further, the results of the analysis indicate that there has been some improvement in the position of women in employment, in the sense that there has been a relative shift of women towards higher paid jobs in the EU as a whole – or, more accurately, a shift away from lower paid jobs since, while the overrepresentation of women at the bottom of the wage distribution has diminished, their underrepresentation at the top of the distribution has remained unchanged. The position of migrant workers, as distinguished by nationality and country of birth, has, however, not improved. Indeed, the relative concentration of migrant workers in lower paid jobs has increased in the EU over the past ten years.

Keywords: *job quality, employment structures, gender, age, migrants*

JEL classification: *J23, J24, J31*

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Changes in the structure of employment in the EU and their implications for job quality

1 Introduction

The number of people in employment in the EU as a whole has tended to increase over the past decade or more. The proportion of working-age population (those aged 15-64) in employment – the employment rate – has risen almost continuously since the mid-1990s and though the slowdown in economic growth in the early part of the present decade dampened the rate of increase, it did not bring it to an end, unlike in previous such periods. Policy-makers responsible for the European Employment Strategy, which has been raising the employment rate as one its central objectives, can, therefore, point to some success.

On the other hand, the rate of growth in employment has varied markedly between EU Member States and, in overall terms, has not been in line with that required to meet the target set at the Lisbon Council in 2000 of achieving an employment rate of 70% by 2010. None of the countries which had an employment rate below 70% before the target was announced – all but four Member States – have succeeded up to now in attaining the target, though many have closed the gap.

Equally, while the number of jobs in the EU may have expanded over recent years, performance in achieving the other main objective of the Employment Strategy, that of improving job quality, which has been given the same importance as increasing job numbers, remains uncertain. Indeed, there have been few systematic attempts to throw light on developments as regards this strand of the policy, primarily because of the difficulty of both defining and measuring job quality.

The concern here is precisely with this aspect of employment performance across the EU, to examine changes in job quality alongside those in job numbers to obtain a fuller perspective on developments and to identify how far an increase in the number of employed has been achieved at the expense of job quality. This is important for assessing the achievements of the European Employment Strategy, or at least is an essential starting-point for evaluating the success or otherwise of the strategy. But it is also of more general interest and relevance given that social well-being cannot be judged only in terms of whether people have jobs or not. It is equally pertinent to take account of the kinds of job which people do and what in a broad sense they gain from doing them.

[*] The authors would like to acknowledge the support and assistance received from Johannes Pöschl at wiiw and Lydia Greunz at Applica, as well as helpful comments on earlier drafts received from the research staff at the European Foundation.

It is evident that the growth of employment which has occurred since the mid-1990s has been accompanied by structural changes in the types of job which are performed, in terms of the nature of the tasks involved, the sector of activity in which they are located and the terms and conditions applying to them. Such changes are not unusual. Indeed, they are an inherent part of the process of economic development and of the changes in technology, the organization of work, the pattern of consumer demand and the international division of labour which underlie this.

Many aspects of these changes in the structure of employment are well documented – the continuing shift from agriculture and manufacturing to services, the shift from manual to non-manual jobs, the increase in part-time jobs and, in a number of countries, the expansion of jobs with temporary contracts of employment. The concern here is not so much to examine these changes as such, though they underlie much of the analysis, but to consider their overall implications for the nature of the jobs in which people are employed across the EU and, in particular, for job quality.

Up to now, the approach adopted to this has, for the most part, been to identify the various dimensions of job quality and to try to assess how they have changed over time. The dimensions concerned are many in number. They include pay, productivity, the nature of the employment contract, access to training and the length of working hours as well as more subjective aspects such as job satisfaction, the degree of responsibility for the work undertaken and the prospects for career advancement. These, it should be evident, vary considerably in terms of their measurability, their relative importance and the extent to which they are likely to be comparable across different countries with different social norms and institutional arrangements. Moreover, even for those aspects which are measurable in principle, the data are often not available, particularly on a comparable and consistent basis, to monitor developments across the EU in practice.

The studies undertaken to assess changes in job quality have, therefore, tended to focus on the aspects for which data are available, or could be found, and to examine how indicators based on these have changed over time in particular countries. The results produced, though interesting, are not only partial but are often difficult to interpret since the various indicators do not necessarily move in the same direction and the weight which should be attached to one relative to another is invariably unclear and open to debate. Accordingly, though in principle it might be possible to combine indicators to form a composite index of changes in job quality, how to do this in a meaningful way remains uncertain, especially if part of the concern is to compare changes across countries.

2 Methodology

The analysis of European labour markets carried out in this report is based on a method which was originally proposed by Joseph Stiglitz in 1996[1], and subsequently refined and expanded by the American sociologist Erik Olin Wright[2]. The basic idea is relatively simple: instead of studying employment changes directly in terms of the number of individuals in work, it considers employment in terms of jobs, which are defined as specific occupations within specific sectors (for instance, secretaries in the construction industry or machine operators in textile manufacturing). Within each national labour market and using the year in the middle of the period being examined as a base, these jobs are ranked according to the median hourly wage or the average educational attainment level of job-holders (which are taken as measures of job quality), and grouped into quintiles (that is, five equal-sized groups ranked in terms of wage or education levels from high to low). The change in the number of people employed in each of these quintiles over a specific period (1995 to 2005 in the case of the present study) indicates where in the wage or skill hierarchy employment is growing and where it is declining or expanding by less. In this way, changes in employment can be analysed from both a quantitative perspective (i.e., the change in the number of people employed) and a qualitative perspective (i.e., what kind of jobs are being created and destroyed over the period in terms of their relative wage and educational levels).

An important assumption underlying this approach is that the wage or skill hierarchy remains unchanged over time, that there is no significant tendency for the median wage or average education level associated with particular jobs to increase or decline *in relative terms*. This assumption seems to correspond with reality to a large extent, in the sense that wage hierarchies and relative skill requirements of different jobs seem to be relatively stable over 5-10 year periods as considered here, if not necessarily over the very long-term[3], despite a general increase in wages and education levels. Moreover, the fact that wage and skill hierarchies are defined only in very broadly in terms of quintiles reinforces the likely validity of this assumption. Although, therefore, there may be instances of the wage or skill levels associated with some jobs to change in relative terms, the changes in question are unlikely in most cases to cause a shift in the jobs concerned between quintiles.

Nevertheless, it should be emphasized that the focus of the approach is on the shift of employment between jobs at different levels in the wage or skill hierarchy and so leaves out of account general increases in the wage and skill levels of jobs which themselves might signify improvements in job quality. The results of the analysis should be interpreted with this in mind.

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1 Council of Economic Advisors (1996), 'Job creation and employment opportunities: the United States labour market, 1993-1996', Office of the Chief Economist, Washington DC.

2 Erik O. Wright and Rachel E. Dwyer (2003), 'Patterns of job expansions in the USA: a comparison of the 1960s and 1990s', *Socio-Economic Review* (2003)1, pp. 289-325.

3 It should be noted, however, that Wright and Dwyer, *op. cit.*, found relatively little change in the wage hierarchy in the US between the 1960s and 1990s.

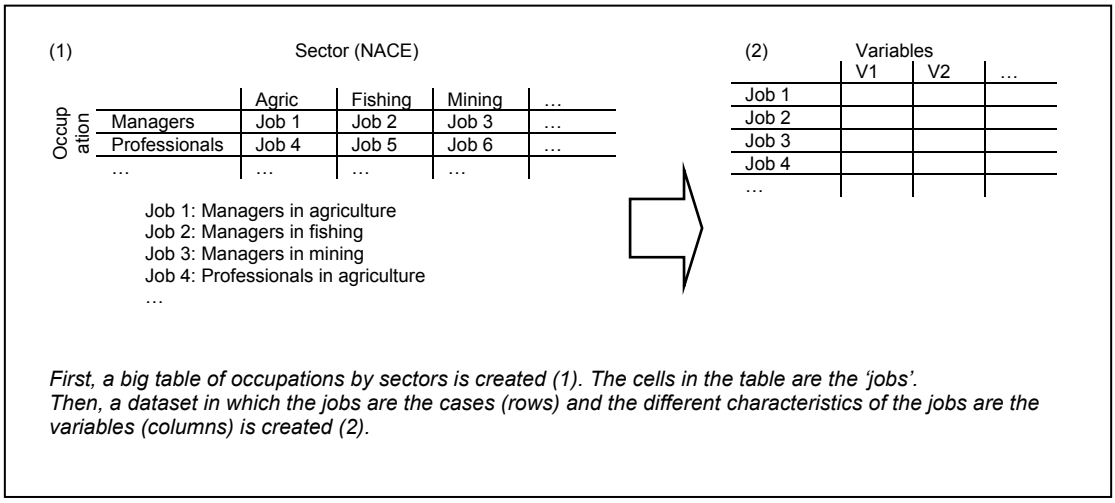
In what follows, the main steps in the construction of the analytical dataset that forms the basis of all the subsequent analysis are only briefly outlined and readers interested in more detail are referred to the documents which complement the present study[4].

2.1 Construction of the jobs matrix

As indicated above, the analysis here is based on jobs rather than individuals, jobs being defined as particular occupations in different sectors. This is operationalized in the following way: for each country, a matrix, or table, is constructed crossing occupations as defined in the International Standard Classification of Occupations (ISCO) at the two-digit level with sectors as defined in the Statistical Classification of Economic Activities (NACE) at the two-digit level, using data from the EU Labour Force Survey. Each cell of the matrix or table is defined as a 'job' (see Figure 2.1).

Figure 2.1

The jobs matrix



First, a big table of occupations by sectors is created (1). The cells in the table are the 'jobs'.
Then, a dataset in which the jobs are the cases (rows) and the different characteristics of the jobs are the variables (columns) is created (2).

Defined in this way, there would be 1680 jobs in an economy, as there are 28 2-digit ISCO occupations and 60 2-digit NACE sectors[5]. In practice, the real number of jobs used in the analysis is smaller, since some jobs do not exist in reality (for example, agricultural workers in motor vehicle manufacture)[6].

[4] See Enrique Fernández-Macías (2008), 'Recent changes in the structure of jobs in Europe: Analytical Framework' (http://www.eurofound.europa.eu/research/0298.htm), for a detailed explanation of the approach and its implications, Robert Stehrer and Terry Ward (2008), 'Recent Changes in the Jobs Structure of the EU: Technical Report' (http://www.eurofound.europa.eu/research/0298.htm) for a detailed explanation of the practical application of the method to European labour markets and of the data used, and Hermine Vidovic (2008), 'Recent Changes in the Jobs Structure of the EU: Literature Review' (http://www.eurofound.europa.eu/research/0298.htm) for a detailed discussion of the literature on job quality and structural change of the labour market.

[5] There are actually 62 sectors in the present classification but two are very small sectors – private households producing goods for their own use and private households producing services for their own use, which exits only in a few countries and which have been aggregated here with households employing domestic staff, which also tends to be small in most countries.

[6] See Stehrer and Ward, *op. cit.*, for details of the construction of the jobs matrix.

2.2 Measuring jobs in terms of their quality

In previous studies based on this methodology, the median hourly wage of each job was used as a measure of its quality. The present study follows the same approach but includes a second measure of job quality based on the educational attainment level of job-holders.

It should be emphasized at the outset that the use of wages as an indicator of job quality is based as much on pragmatic considerations as on theoretical ones. It cannot be denied that job quality is a multifaceted concept composed of several dimensions which cannot be reduced to the wage it pays: The European Foundation's own quality of work concept distinguishes four main components – career and employment security, health and well-being, skills development and reconciliation of work and non-work life – each with several sub-components[7]. It is near impossible, however, to develop a multivariate measure of job quality that enables trends in the different EU Member States to be compared in detail, which is the aim here. This is, first, because the data necessary to do so are not available and, second, because the reality of EU national labour markets is so varied, that it is likely to be impossible to construct such a multivariate measure in a meaningful and widely accepted way.

Instead of attempting the near impossible, the approach here is to select single, or twin, indicators which serve as reasonable approximations to job quality. The main indicator used, relative wage levels, is not only one of the main aspects of job quality but one which tends to be highly correlated with other aspects. Much the same can be said of the education levels required by jobs, which seem to be correlated, in particular, with job satisfaction. Moreover, both are of interest in their own right as well as being highly relevant indicators of the extent to which the structure of employment in European economies is shifting towards higher value-added (and therefore better paid) and more knowledge-intensive (and therefore requiring higher education levels) activities[8].

Each job in the economy is, accordingly, assigned two indicators of quality, one based on the median hourly wage of job-holders and the other based on their average educational attainment level. Because the ranking of jobs in terms of these indicators tends to change only slowly over time, a constant measure of the indicator is used to examine how the structure of employment has changed over recent years[9].

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[7] See European Foundation for the Improvement of Working Conditions (2002), *Quality of work and employment in Europe. Issues and Challenges*, Office for Official Publications of the European Communities, Luxembourg.

[8] See Stehrer and Ward, *op. cit.*, for more detailed discussion of these points.

[9] In practice, the median hourly wage is estimated from a combination of the Structure of Earnings Survey for 2002, the EU Statistics of Income and Living Conditions (SILC) for 2004 and the Structural Business Statistics for 2004. See Stehrer and Ward, *op. cit.*, for details of the estimation procedure.

2.3 Analysing structural change in the labour market and the implications for job quality

The two indicators of job quality can then be used to examine how the structure of employment has changed over time – or how the number of workers in the jobs classified to each of the wage or education quintiles described above has altered (see Figure 2.2). This is based primarily on data from the EU Labour Force Survey which provides details of employment for most Member States for each year from 1995 to 2005 (and for most of the new Member States from 1998).

Figure 2.2

Describing the impact of structural change on the quality of employment

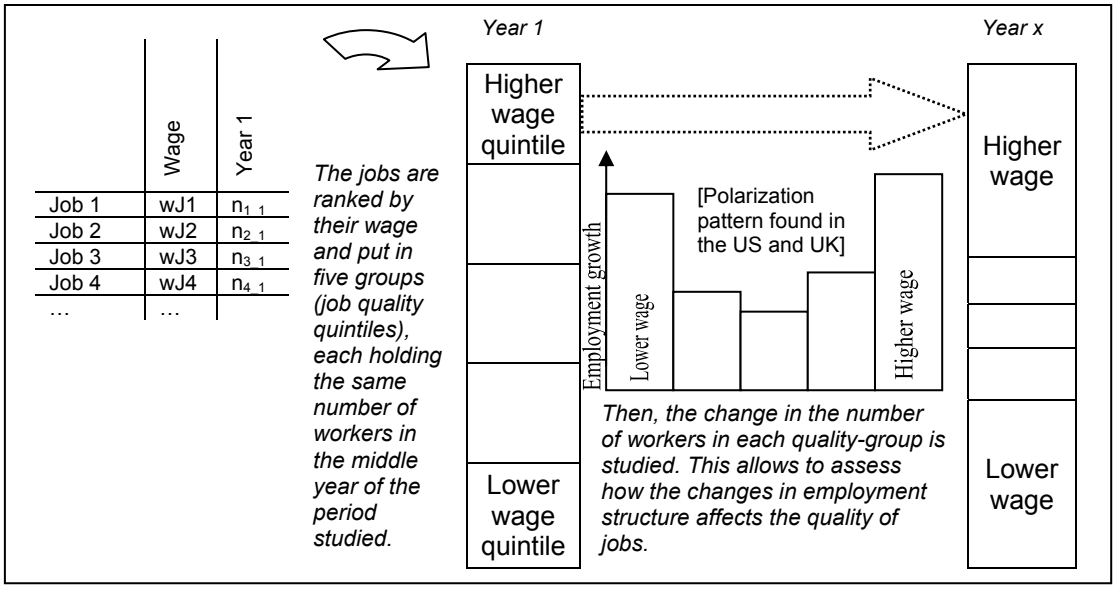
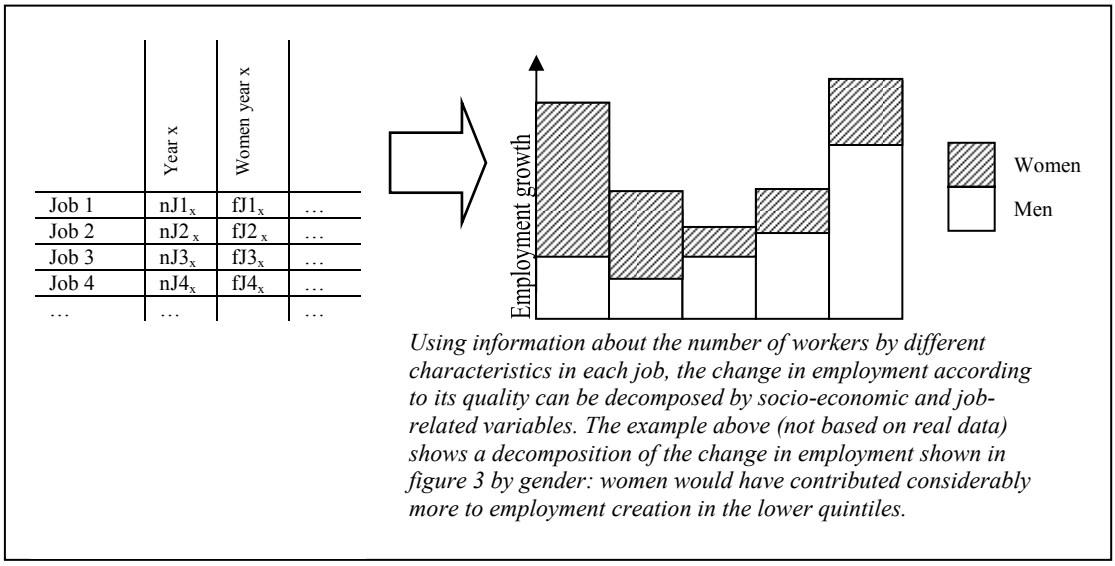


Figure 2.3

Decomposing the change in employment quality by other characteristics



2.4 Decomposing change

Other aspects of employment in addition to jobs as defined here are also examined to explore in more detail the characteristics of the changes which occurred over the decade 1995-2005. These include the gender and age of workers, their country of origin, their hours of work and the nature of their contracts of employment which indicate whether and to what extent, for example, a growth of low-paid – and therefore low quality – jobs is associated with workers with particular characteristics or the extent to which the growth of high-paid jobs has favoured particular groups (Figure 2.3 illustrates the approach adopted).

3 The structure of European labour markets

The ranking of jobs in terms of relative wages and skill, or education, levels gives an insight into labour market behaviour in different EU countries and, specifically, into the influence of national factors on the two rankings. The issues examined here concern, first, the relationship between the structure of relative wages, or wage hierarchies, in different EU countries, secondly, the relationship between the educational requirements of jobs, thirdly, the link between the relative wages paid by different jobs and the education level required and, fourthly, the influence of gender on relative wages.

3.1 The wage quintiles in different EU Member States

It is instructive to compare the wage hierarchies measured in terms of quintiles, as described above, between Member States to examine how far they differ from one another and how far they are the same or similar. This is of particular interest in the context of the present study since it throws light on the extent to which labour markets vary across the EU in terms of the relative wages which they give rise to. This in turn might be associated with differences in their institutional characteristics (in wage setting arrangements, especially) or in the balance of supply and demand in respect of particular skills.

Differences between Member States in both aspects might well be expected given the different features of labour markets in different parts of the EU and given also the different structures of economic activity which in large reflect differences in the stage of economic development as indicated by varying levels of GDP per head. Differences in relative wage hierarchies between some of the new Member States with relatively low levels of GDP per head – and, for example, a large proportion of the work force employed in agriculture – and some of the more prosperous countries in the EU-15 with the great majority of people employed in services might particularly be expected to be observed.

It is equally of interest here since differences in wage hierarchies between countries would imply that the quality of a given job also varies to the extent the two are related. If this is the

case, then common trends in the structure of employment across the EU would have differing implications for job quality in different countries, which might give rise to a question-mark over the validity, or usefulness, of the basic assumption. On the other hand, if relative wage levels for the same jobs tend to be similar, then this would not only reinforce the meaningfulness of the analysis but it would also open up the possibility of comparing job quality across the EU and the extent to which it is tending to change over time, in addition to assessing changes country by country.

3.2 The relationship between wage hierarchies across the EU

To examine the relationship between wage hierarchies in different Member States – i.e. the extent to which a given job has a similar relative wage across the EU – the set of wage quintiles estimated for each country can be correlated with every other country in turn to produce a matrix of correlation coefficients (see Table 3.1 below). These indicate that the correlation between the wage hierarchies in each pair of countries is relatively close in nearly all cases, suggesting that – in these broad terms at least – the structure of relative wages is similar in different parts of the EU.

The countries in which relative wages are least well correlated with those in other countries are Estonia, Latvia and Lithuania, particularly the last two. Indeed, for Latvia and Lithuania, the only countries with which there is a reasonably close correlation of the structure of relative wages with each other, this might reflect the fact that these two countries have the lowest levels of GDP per head of those included in the analysis. Accordingly, a somewhat different pattern of balances between supply and demand in the labour market might be expected. The other countries for which the correlation appears to be comparatively weak are Greece and Cyprus, which may reflect their somewhat different structure of economic activity as compared with other Member States.

Apart from the three Baltic States, there is little sign of any significant difference between the wage hierarchies in the new Member States and those in the rest of the EU, and accordingly little evidence at this broad level of wage setting arrangements being radically different.

The correlation results also indicate that for most countries, the closest relationship in relative wages is with neighbouring or similar countries[10]. The results are summarized country by country in appendix A.2 below. In the main text we only discuss the main points to emerge.

[10] This in part is attributable to the estimation procedure, insofar as where data on wages were missing for particular jobs, estimates were based on relative wages in the jobs concerned in neighbouring or similar countries. Since, however, the number of instances where this procedure was used was relatively small, this can explain only a minor part of the correlations.

Table 3.1

Correlation coefficients between relative wages in pairs of EU Member States as measured by quintiles

	Austria	Belgium	Cyprus	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Latvia	Lithuania	Luxem-bourg	Nether-lands	Poland	Portugal	Spain	Sweden	Slovak Republic	Slovenia	United Kingdom
Austria		0.790	0.659	0.833	0.682	0.638	0.811	0.707	0.861	0.603	0.812	0.785	0.836	0.557	0.591	0.806	0.712	0.826	0.774	0.832	0.787	0.789	0.825	0.728
Belgium	0.790		0.629	0.812	0.667	0.501	0.798	0.617	0.798	0.597	0.742	0.707	0.740	0.432	0.555	0.807	0.683	0.785	0.670	0.782	0.795	0.745	0.748	0.656
Cyprus	0.659	0.629		0.753	0.688	0.606	0.636	0.631	0.687	0.651	0.654	0.629	0.589	0.478	0.580	0.605	0.660	0.652	0.618	0.684	0.674	0.699	0.681	0.673
Czech Republic	0.833	0.812	0.753		0.723	0.617	0.826	0.769	0.818	0.658	0.787	0.776	0.811	0.504	0.593	0.780	0.737	0.833	0.757	0.858	0.777	0.846	0.787	0.738
Denmark	0.682	0.667	0.688	0.723		0.644	0.696	0.744	0.721	0.593	0.706	0.718	0.706	0.441	0.573	0.624	0.725	0.609	0.598	0.707	0.715	0.712	0.633	0.779
Estonia	0.638	0.501	0.606	0.617	0.644		0.539	0.746	0.597	0.509	0.648	0.600	0.604	0.666	0.688	0.531	0.629	0.570	0.583	0.592	0.561	0.642	0.581	0.726
Finland	0.811	0.798	0.636	0.826	0.696	0.539		0.717	0.819	0.605	0.717	0.763	0.785	0.478	0.540	0.753	0.713	0.788	0.713	0.809	0.850	0.800	0.731	0.740
France	0.707	0.617	0.631	0.769	0.744	0.746	0.717		0.759	0.616	0.695	0.789	0.792	0.496	0.581	0.596	0.751	0.669	0.682	0.783	0.690	0.762	0.633	0.828
Germany	0.861	0.798	0.687	0.818	0.721	0.597	0.819	0.759		0.618	0.811	0.821	0.826	0.536	0.639	0.804	0.761	0.824	0.787	0.830	0.824	0.780	0.791	0.781
Greece	0.603	0.597	0.651	0.658	0.593	0.509	0.605	0.616	0.618		0.576	0.657	0.647	0.417	0.485	0.573	0.648	0.560	0.558	0.704	0.555	0.661	0.513	0.646
Hungary	0.812	0.742	0.654	0.787	0.706	0.648	0.717	0.695	0.811	0.576		0.752	0.821	0.629	0.667	0.757	0.726	0.796	0.761	0.789	0.739	0.723	0.812	0.751
Ireland	0.785	0.707	0.629	0.776	0.718	0.600	0.763	0.789	0.821	0.657	0.752		0.832	0.498	0.589	0.716	0.745	0.728	0.715	0.794	0.746	0.760	0.723	0.796
Italy	0.836	0.740	0.589	0.811	0.706	0.604	0.785	0.792	0.826	0.647	0.821	0.832		0.472	0.579	0.740	0.757	0.776	0.785	0.844	0.747	0.780	0.784	0.779
Latvia	0.557	0.432	0.478	0.504	0.441	0.666	0.478	0.496	0.536	0.417	0.629	0.498	0.472		0.724	0.546	0.465	0.579	0.614	0.488	0.469	0.482	0.548	0.602
Lithuania	0.591	0.555	0.580	0.593	0.573	0.688	0.540	0.581	0.639	0.485	0.667	0.589	0.579	0.724		0.572	0.562	0.681	0.641	0.599	0.555	0.621	0.664	0.644
Luxembourg	0.806	0.807	0.605	0.780	0.624	0.531	0.753	0.596	0.804	0.573	0.757	0.716	0.740	0.546	0.572		0.647	0.785	0.704	0.744	0.702	0.698	0.732	0.658
Netherlands	0.712	0.683	0.660	0.737	0.725	0.629	0.713	0.751	0.761	0.648	0.726	0.745	0.757	0.465	0.562	0.647		0.669	0.644	0.738	0.742	0.759	0.661	0.764
Poland	0.826	0.785	0.652	0.833	0.609	0.570	0.788	0.669	0.824	0.560	0.796	0.728	0.776	0.579	0.681	0.785	0.669		0.808	0.823	0.739	0.758	0.817	0.679
Portugal	0.774	0.670	0.618	0.757	0.598	0.583	0.713	0.682	0.787	0.558	0.761	0.715	0.785	0.614	0.641	0.704	0.644	0.808		0.773	0.672	0.749	0.749	0.698
Spain	0.832	0.782	0.684	0.858	0.707	0.592	0.809	0.783	0.830	0.704	0.789	0.794	0.844	0.488	0.599	0.744	0.738	0.823	0.773		0.800	0.843	0.784	0.728
Sweden	0.787	0.795	0.674	0.777	0.715	0.561	0.850	0.690	0.824	0.555	0.739	0.746	0.747	0.469	0.555	0.702	0.742	0.739	0.672	0.800		0.745	0.762	0.723
Slovak Republic	0.789	0.745	0.699	0.846	0.712	0.642	0.800	0.762	0.780	0.661	0.723	0.760	0.780	0.482	0.621	0.698	0.759	0.758	0.749	0.843	0.745		0.721	0.733
Slovenia	0.825	0.748	0.681	0.787	0.633	0.581	0.731	0.633	0.791	0.513	0.812	0.723	0.784	0.548	0.664	0.732	0.661	0.817	0.749	0.784	0.762	0.721		0.678
United Kingdom	0.728	0.656	0.673	0.738	0.779	0.726	0.740	0.828	0.781	0.646	0.751	0.796	0.779	0.602	0.644	0.658	0.764	0.679	0.698	0.728	0.723	0.733	0.678	

Note: Highlighted figures are those where the correlation coefficient exceeds 0.80.

Source: Estimates based primarily on the Structure of Earnings Survey for median hourly earnings in 2002, with gaps completed from data in the EU-SILC for 2005 and in the Structural Business Statistics for 2003. Estimates of wages converted to quintiles on the basis of LFS data.

The implication of the correlations is that the wage structure is relatively similar in most EU Member States, at least when measured in terms of quintiles. The further implication is that as well as using relative wages in each country as an indicator of job quality and how this is tending to change over time, the possibility is opened up of comparing job quality in different parts of the EU by applying a common measure of relative wages. In other words, the results of the correlation exercise suggest that it is possible to carry out a cross-sectional analysis of job quality on the basis of wage quintiles in addition to a time-series analysis. Moreover, by the same token, the results also suggest the possibility of assessing the change in job quality in the EU as a whole on the same basis.

It should be noted that the close relationship between wage rankings in different countries measured in terms of the simple correlation coefficient is confirmed if rank correlation coefficients are computed instead. Indeed, the coefficients are even higher in most cases than reported above (see Appendix Table A.1).

3.3 Differences in the extent of wage dispersion

Although the structure of relative wages may be similar across EU countries, there are still marked differences in the extent of dispersion of wages, between the median wage paid by jobs at the top of the wage hierarchy and that paid by those at the bottom. While this is left out of account in the analysis here since the concern is with relative wage – and education – levels as indicators of relative job quality, it is, nevertheless, of interest to consider variations in wage dispersion across countries, or how much better paid jobs in the upper part of the wage ranking are as compared with those in the lower part[11].

The average hourly wage of jobs in the top quintile of the ranking (ranked by the hourly median wage) relative to that of jobs in the bottom quintile, therefore, varies from just over two in Denmark and Sweden – i.e. the average wage for the former jobs is twice as high as the average for the latter – to close to 5 in Italy and Portugal (Figure 3.1). In general, the countries with the widest dispersion, with the biggest gap between the highest paid jobs and the lowest paid are those in the south of the EU15, apart from Greece (in which perhaps surprisingly the extent of wage dispersion is relatively low) and the new Member States, apart from the Czech Republic and Slovakia.

EU countries vary markedly, therefore, in terms of the distribution of earnings, which reflects institutional and structural differences (such as in the size of the agricultural sector, which is still substantial in Poland) as well as in education levels (which remain extremely

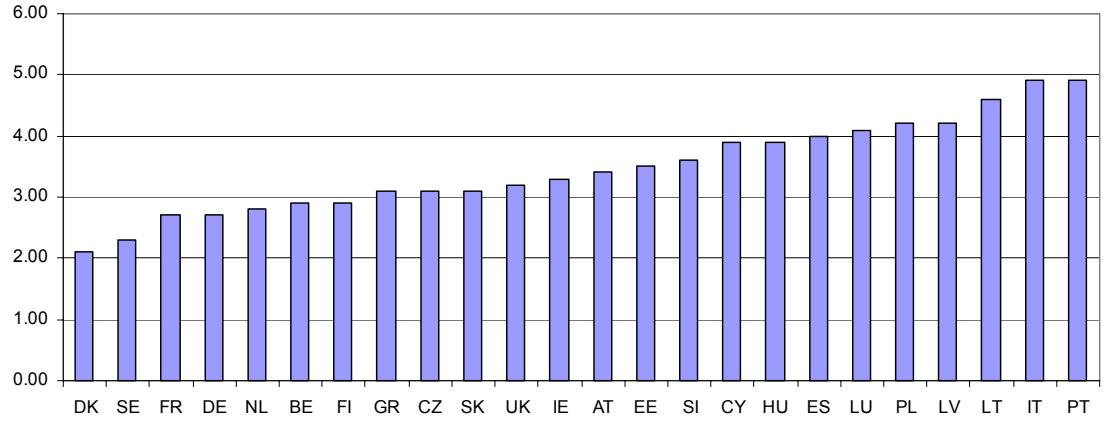
[11] It should be noted that this aspect does not feature in US or other single country studies in this area which focus on relative wages in the economy as a whole rather than on those in different parts or regions of the economy.

wide in Portugal, where over 70% of those aged 25-64 have no education beyond basic schooling and only just over 10% have a university degree or the equivalent)[12].

Figure 3.1

Wage dispersion in EU Member States

Average wage, top quintile/bottom quintile



The contrast between the structures of wages in relative and absolute terms seems to suggest that similar relative wage structures across countries can co-exist with substantial differences in the absolute extent of wage dispersion – in other words, that a broadly similar structure of relative pay and education levels can be stretched to a greater or lesser extent depending on the underlying characteristics of the economic and social system[13].

3.4 The relationship between skill rankings across the EU

Just as the case of jobs ranked by relative wages, the ranking of jobs in terms of skill content in different countries can also be compared with each other. This is done in the same way as for the structure of relative wages above, namely by calculating the correlation coefficient between the skill rankings, as measured by quintiles, in each pair of countries in turn. The results are reported in the Appendix Tables A.2 and A.2 in terms of both simple correlation coefficients and rank correlation coefficients. In both cases, all the pair wise results are highly significant in statistical terms, which suggests that the same kind of job in different countries requires broadly similar skill levels, at least in relative terms, which is perhaps only to be expected.

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[12] For the link between education levels and the distribution of earnings, see A. B. Atkinson (2007), 'The distribution of earnings in OECD countries', *International Labour Review*, Vol. 146, No. 1, pp. 41-60 and for details of the education levels themselves, see OECD (2007), 'Education at a glance 2007', OECD Indicators.

[13] This sounds very similar to the old idea of international occupational prestige or socio-economic scales, such as the ISEI (International Socio-Economic Index of Occupational Status; see H. B. G. Ganzeboom, P. M. De Graaf and D. J. Treiman (1992), 'A Standard International Index of Socio-Economic Status', *Social Science Research*, Vol. 21, No. 1, pp. 1-56) or the SIOPS (Standard International Occupational Prestige Scale; see D. J. Treiman (1977), *Occupational Prestige in Comparative Perspective*, Academic Press, New York).

Indeed, the ranking of jobs across countries in terms of education levels is even more similar than the ranking in terms of wages. The correlation coefficient is above 0.8 for all pairs of countries, except for the three Baltic States, though even for these counties, they are relatively high.

The similarity of the job rankings across countries is confirmed by more detailed analysis (specifically on the basis of principal component factor analysis). Workers classified in the same job in different parts of Europe, therefore, tend to have similar relative wages and similar relative education levels. As indicated above, although the wage structures are very different in absolute terms, they seem to be quite similar in relative terms – i.e. in terms of the relative positions of different jobs.

This perhaps is only to be expected given that all the countries covered are (more or less) advanced capitalist economies, with in most cases relatively similar employment structures. At the same time, a number of the countries covered – the new Member States – have only comparatively recently become market economies and have been undergoing considerable structural change over the past 15-20 years. It is perhaps less expected that these countries would also have much the same ranking of jobs in terms of wages, in particular, as the EU15 countries. Indeed, apart from the three Baltic States, it is difficult to detect any difference between these countries and the others in terms of the correlations.

3.5 Comparison of the job rankings across sectors and occupations

The concern here is to compare the ranking of jobs in terms of relative wages and education levels across countries in more detail by examining which particular jobs are ranked at different points in the distribution. The purpose is, first, to gain a better understanding of the general approach adopted in the study to facilitate interpretation of the results which emerge from it. Secondly, it is identify the types of job which differ in terms of their ranking across countries, or which diverge from the generally close relationship indicated above.

To facilitate the analysis, jobs, which have been defined as ISCO 2-digit occupation in NACE 2-digit sectors, are grouped into their ISCO 1-digit and NACE 1-digt equivalents (for example, all 23 manufacturing industries are grouped together as are all the skilled craft and related workers included in ISCO 7). Each job is then assigned two index values from 1 to 5, the first according to their position in the ranking by relative wages, and, specifically, the quintile in which they appear, the second according to that by education level. Jobs included in the bottom quintile, or the lowest 20% of the distribution in terms of wages or education levels, therefore, is assigned a weight of 1, jobs in the second quintile, a weight of 2, and so on up to 5 for jobs in the top 20% of wages or education levels. For each individual sector or occupation, an average ranking ‘index’ is then computed, which if jobs

were equally distributed across quintiles would have a value of 3. If, therefore, a value of 2.89 is calculated for jobs in manufacturing, this means that jobs in the sector are ranked slightly below the average.

Figure 3.2 plots the average value of this index for all the countries covered in the study for each NACE-1 digit sector, with the wage ranking plotted against the horizontal axis and the educational ranking against the vertical axis. The plots indicate, first, the overall ranking of the sector across the EU, in the sense that the closer to 0, or the origin, the lower the ranking. Secondly, they indicate closeness between the ranking in terms of wages and the tanking in terms of education, in the sense that the closer the points are to the diagonal (the 45 degree line), the closer the match. Thirdly, the concentration or spread of the points in each of the plots indicates the similarity or dissimilarity of the sector ranking across countries. The first plot, for example, shows that the agricultural sector in Denmark has a value of slightly above 2 both in terms of wages and education levels and in Poland a value of just over 4 in terms of wage but only slightly above 3 in terms of education levels.

In most sectors, the points representing the different countries are relatively concentrated, reflecting the similarity in both the relative wage and education hierarchies noted above. There are, however, differences. For Agriculture, the ranking differs relatively widely across countries and tends to be higher in terms of wages than education levels. Manufacturing, construction, retailing and HORECA (hotels, restaurants and catering) are all around the middle of the distribution on both indices, though construction tends to be higher in terms of pay than in terms of education., The reverse is the case for retailing and HORECA – i.e. the people employed tend to have a higher level of education than would be expected in terms of their relative pay.

Business and financial services is ranked highest position in most countries on both indices. Public administration and education are ranked similarly around a mid-to-high position, though public administration tends to have a higher ranking in terms of wages than in terms of education, while the opposite is the case for education. In general, in each of the plots, the spread of countries is wider in the horizontally than vertically, reflecting the fact that the variability of the ranking by wages is greater than the ranking by education levels, as indicated in the previous section.

Figure 3.3 shows the same types of plot but for occupations rather than sectors. As might be expected, the rankings of the different occupations are much more differentiated than the rankings of sectors – i.e. managers, professionals and technicians (ISCO categories 1 to 3) are always ranked at the upper end of the distribution, elementary workers (ISCO 9) at the lower end in all countries Nevertheless, there is some variability in the rankings of the same occupations in different countries[14] .

[14] This to some extent may reflect classification differences rather than actual differences, as noted earlier.

Figure 3.2

Weighted quintile average for sectors, 2005

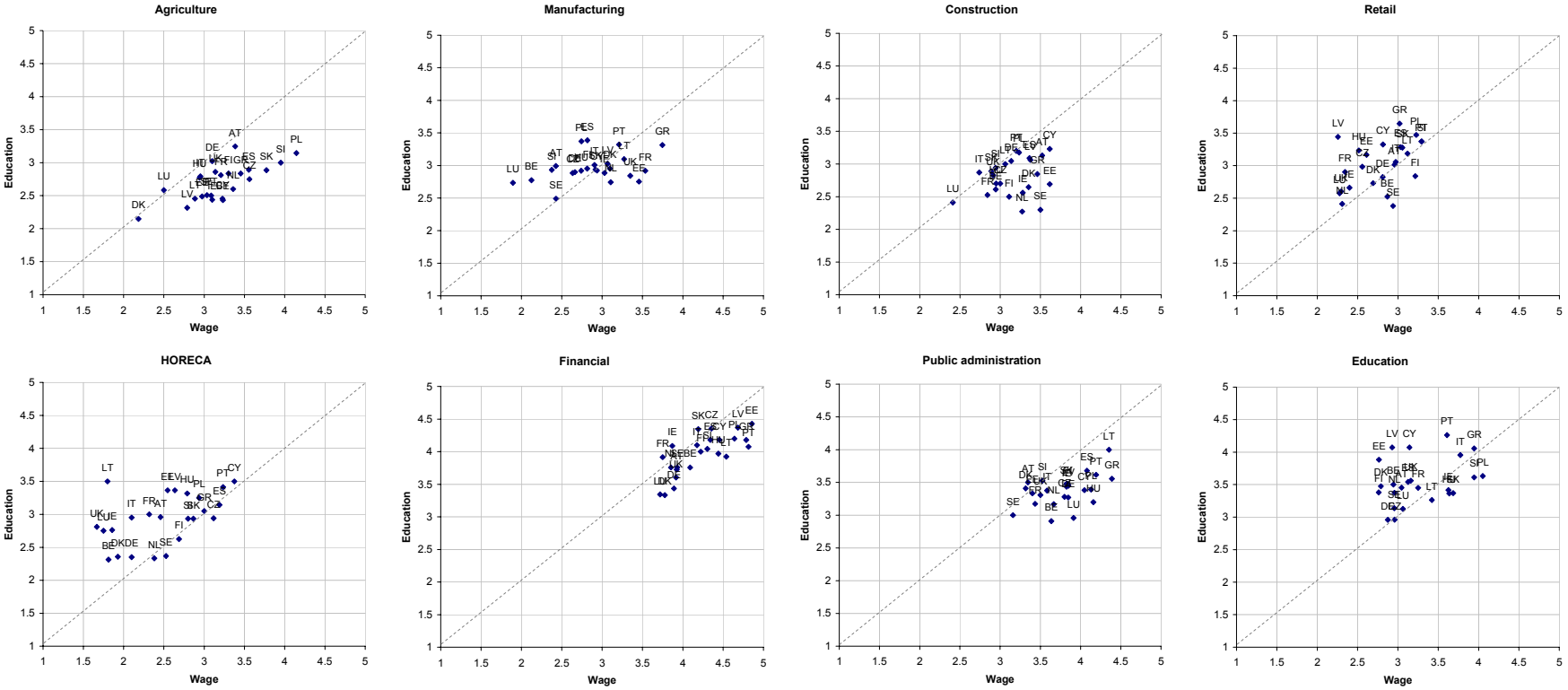
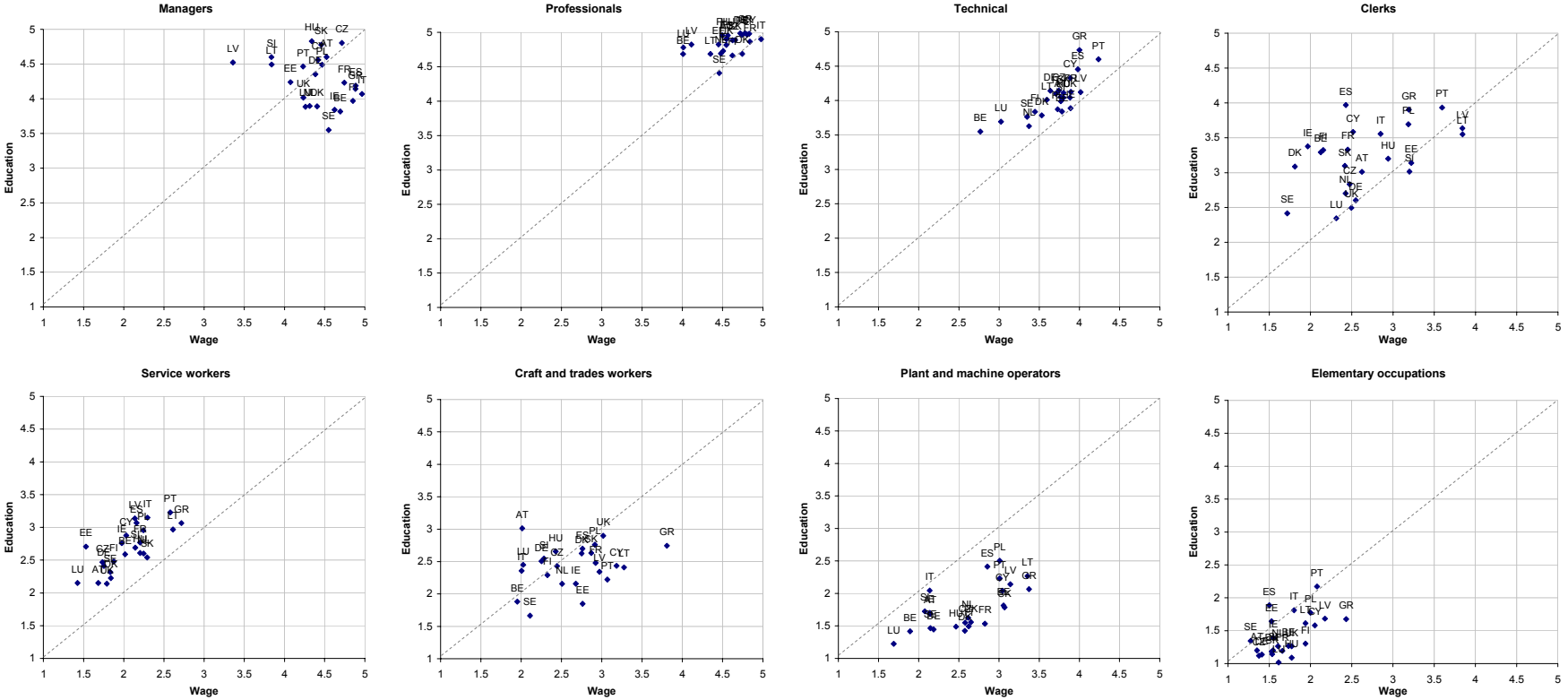


Figure 3.3

Weighted quintile average for occupations, 2005



Professionals tend to be ranked in the highest position in terms of both wages and education with relatively little variation between countries. Managers also tend to be ranked relatively highly, but in some countries, higher in terms of pay than education, in other countries not. In all countries, are technicians are ranked higher in terms of education than in terms of pay, which is understandable given that many of these are younger people in the earlier stages of their careers (classified as associate professionals) who will progress to becoming professionals. Their overall ranking, however, varies considerably between countries, being relatively high in Greece, Portugal and Spain, in particular (which again in some degree may reflect classification differences).

Clerks vary most widely in terms of their ranking between countries. In some countries (such as Sweden, Luxembourg and the UK), clerks are ranked relatively lowly on both indices, in others (Latvia, Lithuania, Portugal and Greece), relatively highly. Whatever their ranking, it tends to be higher in terms of education than in terms of wages.

Service workers, many of whom are employed in retailing and HORECA, are generally ranked around the mid-to-low part of the distribution, with higher education levels than pay. The opposite is the case for craft and, more especially, for plant and machine operators, which are ranked similarly but higher in terms of pay than education, which might reflect the fact that their much of their skill comes from informal learning (learning by doing or by experience), which is not captured by the indicator used here, rather than from formal education. Finally, elementary occupations are ranked at the low end of the scale on both wages and education, with little variation between countries.

3.6 Relationship between wage and education rankings of jobs

The ranking of jobs in terms of relative wage and education levels can be used to throw light on the relationship between the two and, accordingly, on the returns to education. The degree of correlation between the two rankings is, therefore, a measure of the match between education and wages, at least in terms of their relative quintile positions in the two distributions of jobs.

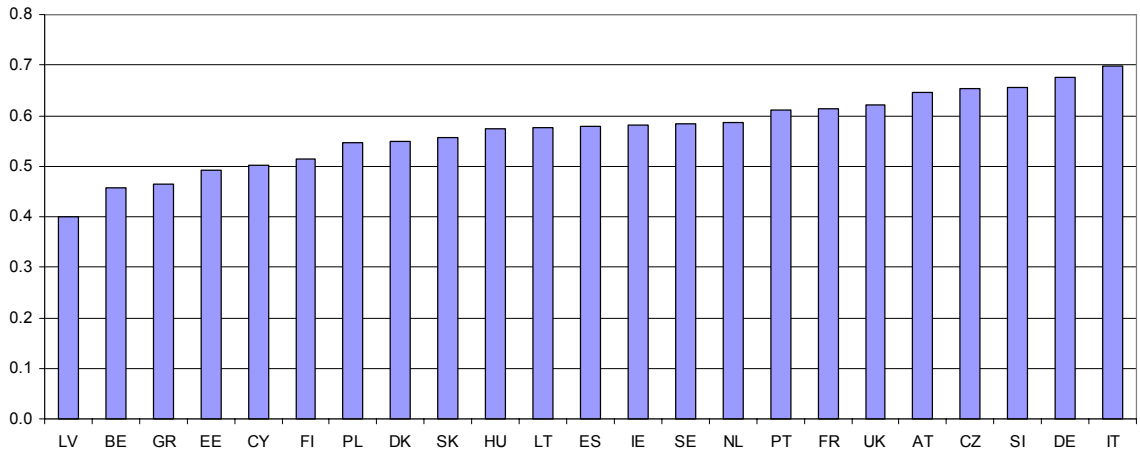
Two points need to be emphasized, however, in relation to this analysis. First, it relates to jobs rather than individuals and, accordingly, takes no account of pay differences between individuals in the same jobs. Secondly, it measures the relative rather than the absolute economic – or financial – return, i.e. the position of a given job with a particular average education level in the relative wage hierarchy.

At the same time, there are advantages of focusing on relative rather than absolute returns insofar as this is intrinsically more comparable across countries than absolute returns,

while the fact that the focus is on jobs rather than individuals is likely to reduce the influence of the specific characteristics of individuals on the results.

Figure 3.4

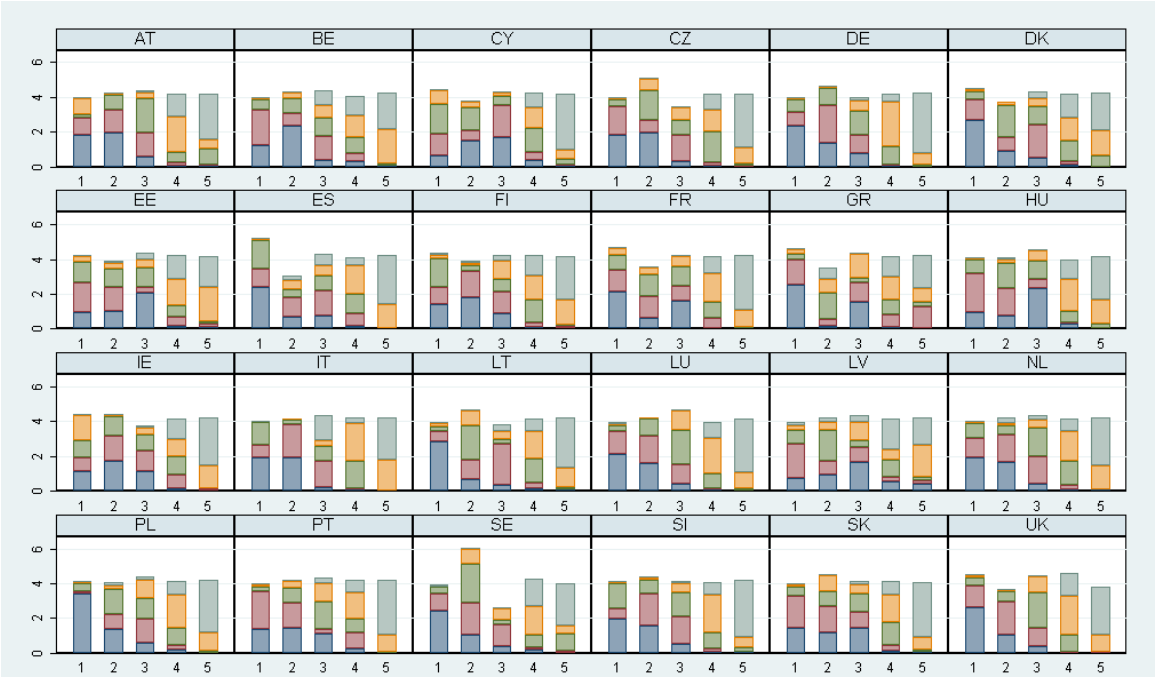
Rank correlation of skills and wages in each country



The correlation between the ranking of jobs by wages and education is relatively close for most countries (the Spearman rank correlation coefficient being over 0.5 in all but 4 countries; see Figure 3.4).

Figure 3.5

Skills quintiles broken down by wage quintiles



Latvia, Belgium, Greece, Estonia, Cyprus, and Finland show relatively low correlations. The closest correlations (with a rank correlation coefficient of over 0.7) are in the Czech Republic, Slovenia, Germany, and Italy.

Another (and more informative) way of considering the correlation between the wage and education ranking of jobs is to examine the division of jobs in each education quintile, as defined above (i.e. the 20% of jobs with the lowest education level, the 20% with the next lowest and so on), between wage quintiles. This is shown in Figure 3.5, where the wage quintiles are colour coded, so that the more the bar for each education quintile consists of a single colour, the closer the correspondence between education levels and wages. A perfect correspondence would mean the bars being a uniform colour for each quintile.

In most countries there is a relatively close match between skill and wage quintiles, because the bars are dominated by a single colour – the one that corresponds to the quintile in question. As the chart indicates, the match between wage and education rankings is closer at the upper end of the ranking than the lower in most countries. The lowest wage quintile is, therefore, not only dominant in the lowest education quintile but also in the second and, in some cases, the third (for instance, in Cyprus, Estonia, France, Latvia and Slovakia). Jobs requiring a high level of education, therefore, typically tend to pay a relatively high wage, or alternatively jobs which pay a high wage demand relatively high education levels. On the other hand, jobs with a relatively low wage are not necessarily performed by those with the lowest education levels. This indicates an asymmetry in the relationship between the ranking of education and wages: a high level of education seems to be a requirement for accessing high paid jobs, but low paid jobs can effectively be performed by anybody irrespective of their level of education. A university degree does not prevent someone from doing a low level job but having only basic schooling does prevent someone from doing a high level job.

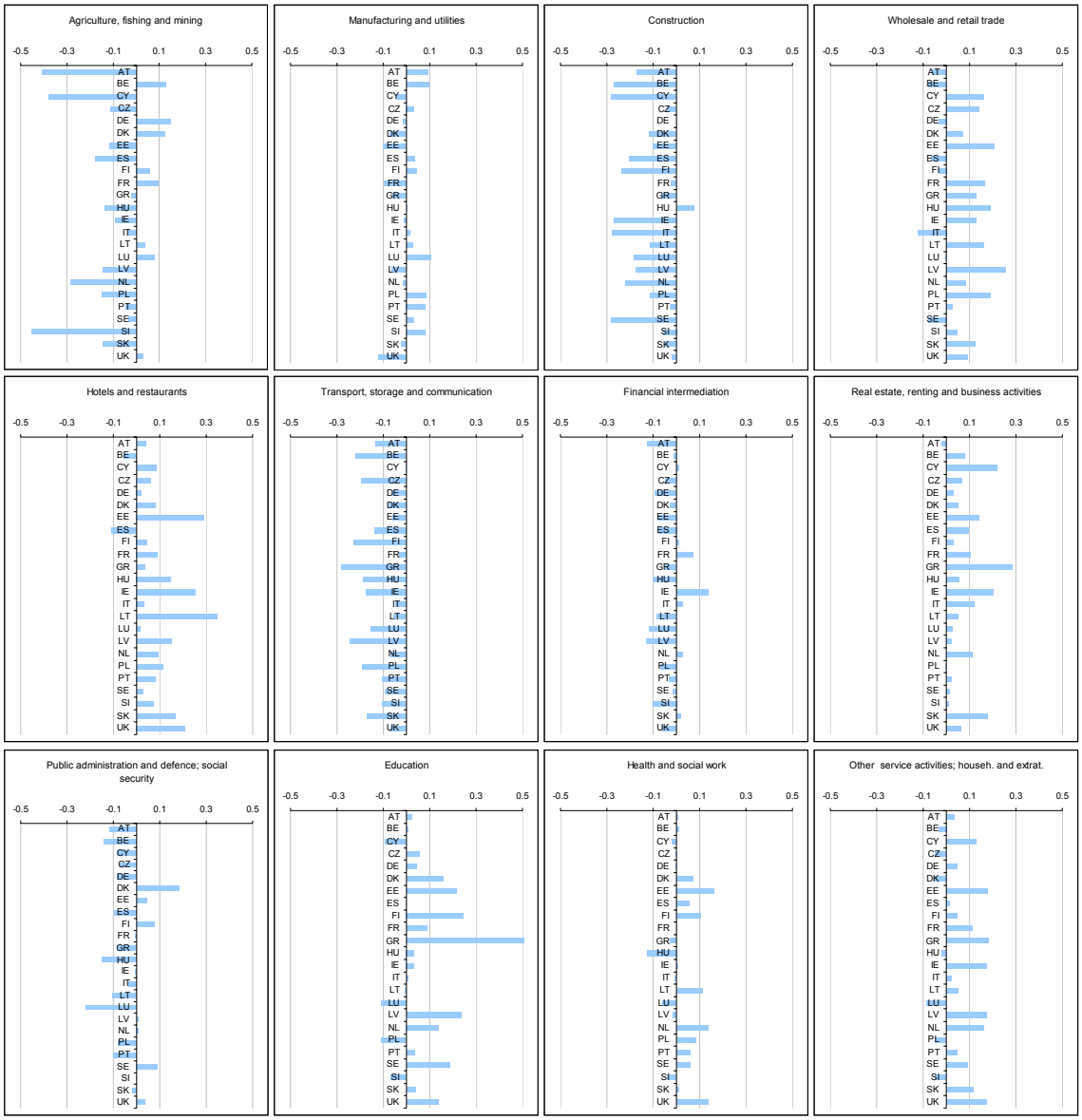
A closer examination of the patterns of mismatch between the wage and education rankings of jobs gives an insight into the underlying factors. For each job, a ‘mismatch distance’ indicator has been created simply by subtracting the ranking of jobs by wages from the ranking of jobs by education, in both cases in terms of quintiles. A perfect match would mean a value of zero, a negative value means that the job is ranked higher in terms of wages than in terms of education, a positive value, the reverse. The result is then divided by the number of jobs in each country to adjust for differences in this.

The results are shown in Figure 3.6 (in which jobs are weighted by the number employed). Most countries show a similar pattern of mismatch by sector. Construction tends to have a higher ranking by wage than education, as do transport and agriculture. On the other hand, retailing, hotels and restaurants, business services, education (very markedly in Greece) and other services have a higher ranking in terms of education than in terms of wages.

Manufacturing and financial services have a very similar ranking in terms of both indicators. Public administration and health have a less uniform pattern across countries (for instance, in Denmark and Finland, public administration is ranked lower in terms of wages than education but nowhere else).

Figure 3.6

The ranking of jobs in terms of education less the ranking in terms of wages, by sector (jobs weighted by employment)

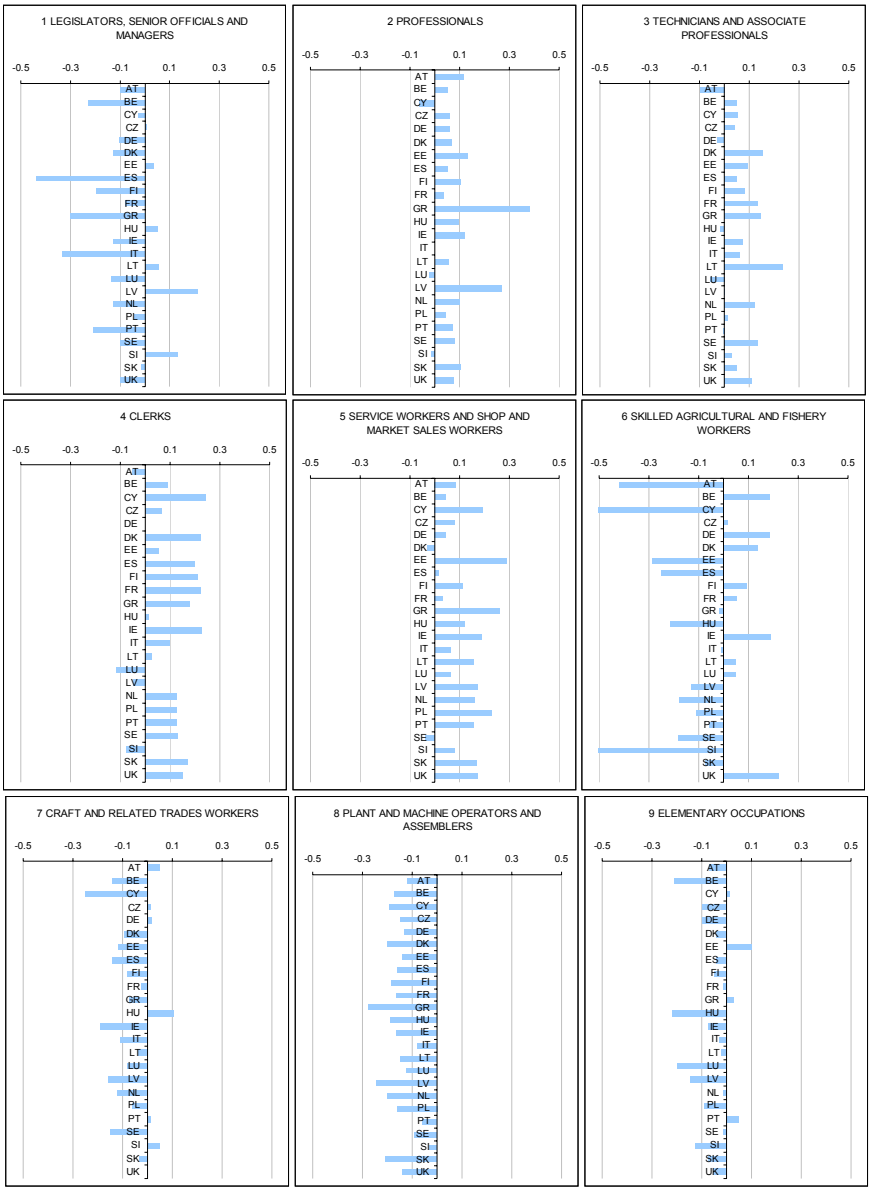


These findings suggest some interesting possible interpretations. They suggest, for example, that there may be some trade-off between wages paid and other characteristics of the job, so that the attractiveness (or quality) of a specific job is not necessarily reflected only by its relative wage. A *job-based variant* of the theory of compensating differentials

may, in other words, explain some of these patterns. Workers in construction and transport might receive a higher compensation than would be expected given their education level because of their more difficult and hazardous working conditions, while the opposite might be the case in education or business services.

Figure 3.7

The ranking of jobs in terms of education less the ranking in terms of wages, by occupation (jobs weighted by employment)



Nevertheless, this theory is less plausible as an explanation of the higher ranking in terms of wages than education of agriculture, nor the lower ranking of retailing, hotels and restaurants and other services. Here there are other factors at work, such as institutional factors (for example, the influence of organized labour clearly tends to be less in personal

services or hotels and restaurants than in other sectors), the prevalence of women in the jobs concerned (see below), the possibility in the case of agriculture, that jobs are not sufficiently disaggregated to pick up differences in the tasks involved, or the fact that education is measured here only in terms of formal qualifications and informal learning is ignored completely (which in some sectors, such as construction, is important).

The results, therefore, give qualified support to human capital theories, but at the same time, they suggest other factors than formal education play a role in the determination of relative wages.

Similar findings result from examining in detail the mismatch between wages and education by occupation. In general, managers tend to be ranked much higher in terms of wages than in terms of education, as might be expected. The new Member States, however, differ in this respect, showing either a similar wage and education ranking (as in Czech Republic, Estonia, Hungary and Lithuania) or a mismatch in the opposite direction (in Latvia and Slovenia). Professionals, technicians, clerks and service workers are in most countries ranked higher in terms of education than in terms of wages; whereas the opposite is the case for skilled and semi-skilled manual workers. Elementary occupations are ranked similarly low in terms of both indicators, while the ranking of agricultural workers varies markedly across countries. Again, the patterns of mismatch seem to point to the importance of institutional factors (skilled and semi-skilled industrial workers may be better organized to secure high wages than their education levels would imply) as well as informal learning (the *skills* of craft workers and operators and assemblers may be acquired to a large extent outside the formal education system).

3.7 Wage and education ranking of 'men's' and 'women's' jobs

The mismatch between the wage and education ranking of jobs seems to be linked to the division of jobs between men and women. In particular, jobs which are predominantly filled by women tend to have a higher ranking in terms of education than in terms of wage, while for those predominantly filled by men, the opposite is the case. To show this, jobs have been divided between 'female-dominated' ones in which women make up over 65% of those employed in them (around 30% of total employment), 'male-dominated' ones where men make up more than 65% (around 40% of total employment) and 'mixed jobs', the rest (around 30% of total employment) (Figure 3.8).

The results are striking. Predominantly female jobs are ranked higher on average in terms of education than in terms of wages in nearly all countries, predominantly male jobs, higher in terms of wages than education. This is the case for all countries except Austria, Germany, Luxembourg and Slovenia, where there is no clear difference between the two types of jobs. For the mixed jobs, there is no clear pattern across countries.

Figure 3.8

Ranking of jobs by education less ranking by relative wages, by predominant gender of jobs (jobs weighted by employment)

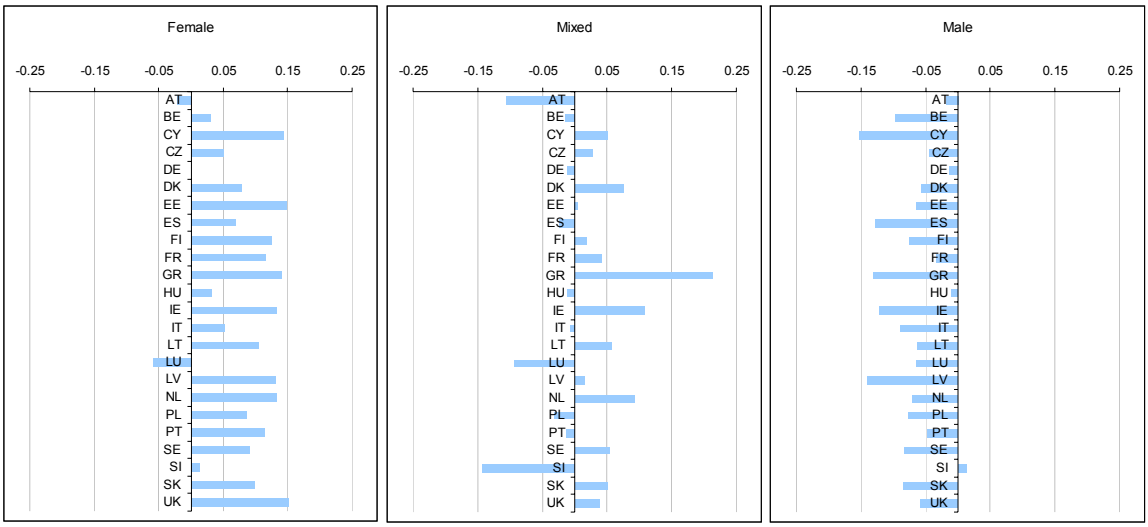
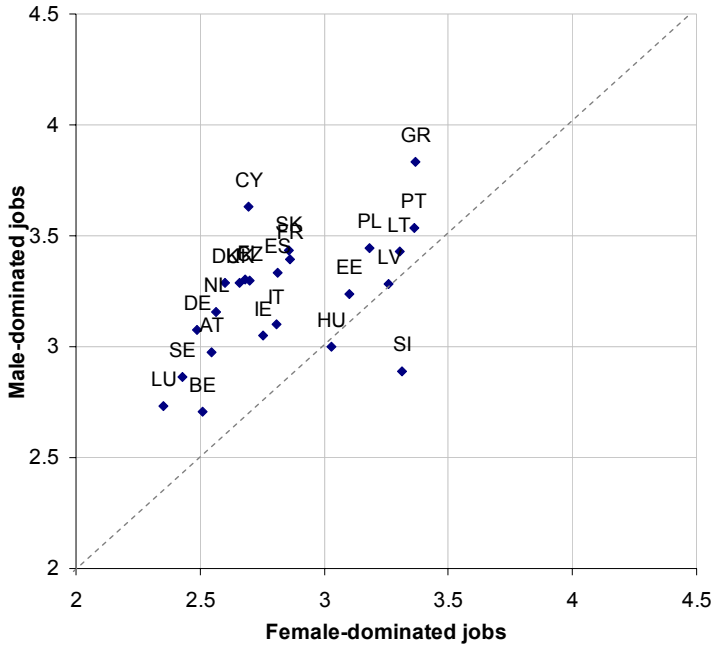


Figure 3.9

Weighted average of wage-based quintiles of male and female jobs



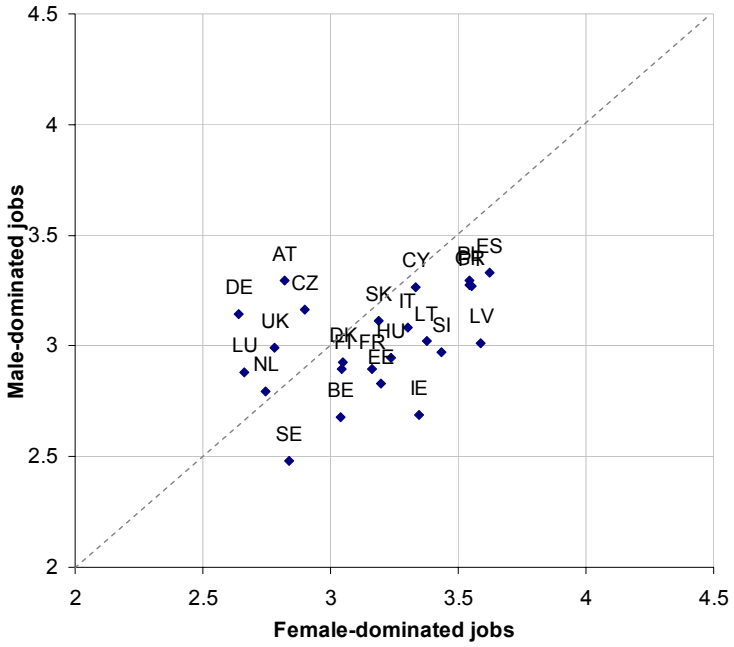
Gender composition of the jobs

A further question arises as to the relative ranking of predominantly men's and predominantly women's jobs in terms of wages and education. This has a bearing, in particular, on the wage gap between men and women, which, as is well known, is significant throughout the EU. The fact that men on average earn more than women does

not in itself imply that women tend to be employed in lower paid, and possibly, lower skilled jobs. Instead, it could be the case that women are paid less than men for doing the same kind of job. Examining the relative ranking of jobs which are predominantly filled by men and of those predominantly filled by women throws some light on the issue.

Figure 3.10

Weighted average of skill-based quintiles of male and female jobs



Figures 3.9 and 3.10 and Table 3.2 show the relationship between the average ranking of male- and female-dominated jobs in terms of wages and education levels in each country, the average ranking being calculated as the weighted average of the proportion of each kind of job in each quintile[15]. They indicate that male-dominated jobs tend to have a higher average ranking in terms of wages than female-dominated ones in all countries apart from Slovenia and Hungary – i.e. all countries are above the 45 degree line, except Slovenia which is below and Hungary which is on the line.

In terms of education, the picture is less clear-cut, though in most countries, female-dominated jobs have a higher average ranking than male-dominated jobs, the only exceptions being Austria, the Czech Republic, Germany and Luxembourg, where the opposite is the case. Jobs in which women make up the major part of the work force tend, therefore, to have lower wages than jobs in which men make up the major part. The differences, however, are relatively small (as indicated in Table 3.2).

[15] The calculation is similar to that described above, with each quintile being assigned a weight according to its number – i.e. the first quintile having a weight of one, the second a weight of two and so on – and the weights being applied to the proportion of employment in male- or female-dominated jobs in each quintile.

Table 3.2

Weighted average quintile ranking of jobs by gender composition

	Wage quintiles			Skill quintiles		
	Female-dominated	Male-dominated	Mixed jobs	Female-dominated	Male-dominated	Mixed jobs
Austria	2.55	2.98	3.09	2.82	3.29	3.29
Belgium	2.51	2.71	2.86	3.04	3.68	3.21
Cyprus	2.69	3.63	3.11	3.33	3.27	3.48
Czech Republic	2.70	3.30	2.94	2.90	3.16	3.00
Denmark	2.60	3.29	2.85	3.05	2.93	2.99
Estonia	3.10	3.24	3.38	3.20	2.83	3.13
Finland	2.68	3.30	3.24	3.04	2.90	3.20
France	2.86	3.39	3.38	3.16	2.90	3.34
Germany	2.49	3.08	2.93	2.64	3.14	3.01
Greece	3.37	3.83	3.58	3.54	3.28	3.79
Hungary	3.03	3.00	3.29	3.24	2.95	3.27
Ireland	2.75	3.05	3.18	3.35	2.69	3.44
Italy	2.81	3.10	3.14	3.30	3.08	3.47
Latvia	3.26	2.28	3.10	3.59	3.01	3.38
Lithuania	3.30	3.43	3.39	3.38	3.02	3.48
Luxembourg	2.35	2.73	2.95	2.66	2.88	3.12
Netherlands	2.56	3.15	3.04	2.74	2.79	3.28
Poland	3.18	3.45	3.29	3.54	3.30	3.58
Portugal	3.36	3.54	3.52	3.55	3.27	3.87
	Wage quintiles			**Skill quintiles**		
	Female-dominated	**Male-dominated**	**Mixed jobs**	**Female-dominated**	**Male-dominated**	**Mixed jobs**
Slovak Republic	2.86	3.43	3.10	3.19	3.11	3.16
Slovenia	3.31	2.89	3.11	3.43	2.97	3.26
Spain	2.81	3.34	3.20	3.62	3.33	3.63
Sweden	2.43	2.87	2.95	2.84	2.48	2.99
United Kingdom	2.66	3.20	3.34	2.78	2.99	3.31

4 Developments in job quality across the EU 1995-2005

The focus here is on assessing changes across the EU in job quality, as reflected in the two indicators developed here, or more accurately, on shifts in employment between jobs of different quality as indicated by their position in the wage and skill hierarchies. A distinction is made throughout between the EU15 countries and the new Member States, partly because of difference in GDP per head, or in levels of prosperity, partly because of the recent transition of most of them – all apart from Cyprus – from centrally planned to market economies. Both of these could affect labour market behaviour.

4.1 Overall employment performance, 1995-2005

Before focusing on the core part of the study and considering developments in job quality as reflected in the two indicators constructed for this purpose, it is useful to examine the changes in employment which occurred over the ten years 1995 to 2005 in the different countries. This is not only to indicate the performance in pursuing the other main strand of the European Employment Strategy, that of creating more jobs, which up to now has been the focal point of policy attention, but it is also to depict the backdrop against which changes in job quality can be assessed.

The concern here, it should be emphasized, is simply to set out the changes in total employment over the period rather than to discuss in detail the various factors underlying differential performance in this respect, such as different rates of productivity growth, differing levels of in international competitiveness or the pursuit of different macroeconomic and labour market policies. These factors, however, need to be taken into account in some degree insofar as they might affect the structure of employment and, therefore, the outcome in terms of job quality. Table 4.1 reports the growth rates of GDP (at constant 1995 prices), employment (calculated from the EU LFS dataset) and the resulting (labour) productivity (i.e. GDP per worker) growth rate.

Over the EU as a whole, employment grew by almost 1% a year on average between 1995 and 2005, though growth was slightly slower in the second half of the period than in the first as a result of the global slowdown in 2001. Nevertheless, the number of persons in work in 2005 was still almost 4% higher than five years earlier, despite a reduction in the rate of increase in GDP, reflecting some decline in the rate of aggregate productivity growth. GDP growth in the EU averaged 2.8% a year in the five years 1995-2000 and 1.7% a year over the five year 2000-2005; employment growth averaged less than 1% a year in the first period, just over 0.7% in the second. GDP per person employed, therefore, rose by 1.9% a year in the first period, 1.0% a year in the second.

Accordingly, employment performance in terms of net job creation between 2000 and 2005 was better, given the rate of GDP growth, than would have been expected on the basis of the apparent underlying trend rate of productivity growth up to then (aggregate productivity growth was similar in the ten years before 1995 as in the five years after). This apparent increase in the employment intensity of growth (the inverse of productivity growth) has sometimes been ascribed by EU policy-makers to the effects – and effectiveness in these terms – of the European Employment Strategy. Irrespective of how far there is a link between the two, it is nevertheless the case that this increase in employment relative to GDP growth might be expected to have consequences for job quality and reinforces the interest in exploring developments in this regard over the period. In other words, the observed increase in employment intensity is consistent with there having been a shift towards less productive jobs, measured in terms of value-added per person employed.

Table 4.1

GDP, employment and productivity growth rates in EU Member countries

	GDP growth rate			Employment growth rate			Productivity growth rate		
	1995-2000	2000-2005	1995-2005	1995-2000	2000-2005	1995-2005	1995-2000	2000-2005	1995-2005
Austria	2.94	1.45	2.19	0.09	0.61	0.35	2.85	0.84	1.84
Belgium	2.70	1.46	2.08	1.64	0.75	1.19	1.07	0.71	0.89
Denmark	2.86	1.34	2.10	0.95	0.29	0.62	1.91	1.05	1.48
Finland	4.77	2.54	3.65	2.45	0.58	1.28	2.32	1.96	2.37
France	2.81	1.63	2.22	1.20	1.01	1.10	1.61	0.62	1.11
Germany	2.01	0.57	1.29	0.39	-0.07	0.16	1.62	0.64	1.13
Greece	3.45	4.40	3.92	1.31	1.26	1.28	2.14	3.14	2.64
Ireland	9.70	5.20	7.43	6.20	2.92	4.55	3.51	2.28	2.88
Italy	1.91	0.69	1.30	1.22	1.14	1.18	0.69	-0.45	0.12
Luxembourg	6.13	3.06	4.58	2.24	1.25	1.74	3.89	1.81	2.84
Netherlands	4.05	1.21	2.62	2.83	0.62	1.59	1.22	0.60	1.03
Portugal	4.09	0.81	2.43	1.73	0.42	1.08	2.35	0.38	1.36
Spain	4.11	3.27	3.68	4.36	4.13	4.24	-0.25	-0.86	-0.56
Sweden	3.23	2.35	2.79	1.98	0.50	1.05	1.25	1.85	1.74
United Kingdom	3.22	2.46	2.84	0.88	0.74	0.81	2.34	1.71	2.03
Cyprus	3.82	3.16	3.49	4.79	3.38	3.62	-0.97	-0.22	-0.13
Czech Republic	1.48	3.79	2.63	-1.55	0.36	-0.19	3.04	3.43	2.82
Estonia	6.13	8.26	7.19	-1.50	1.13	0.13	7.63	7.14	7.06
Hungary	4.02	4.31	4.16	2.09	0.53	1.11	1.93	3.79	3.06
Latvia	5.42	8.19	6.79	-2.30	1.85	0.65	7.71	6.34	6.14
Lithuania	4.68	7.74	6.20	-2.88	0.94	-0.17	7.55	6.80	6.37
Slovak Republic	3.45	4.59	4.02	-2.24	0.94	0.02	5.69	3.64	3.99
Slovenia	4.39	3.44	3.91	0.82	1.02	0.93	3.57	2.42	2.98

Notes: Poland is excluded from the table because it is not included in the subsequent analysis since there are no data for the division between NACE 2-digit sectors before 2004. For Finland, Sweden, Estonia, Hungary and Slovenia employment growth rate is calculated from 1997 on; for Netherlands and Slovenia from 1999 on; for Czech Republic, Latvia, Lithuania and Slovak Republic from 1998 on; and for Cyprus from 1999 on. Growth rates are based on EU LFS data.

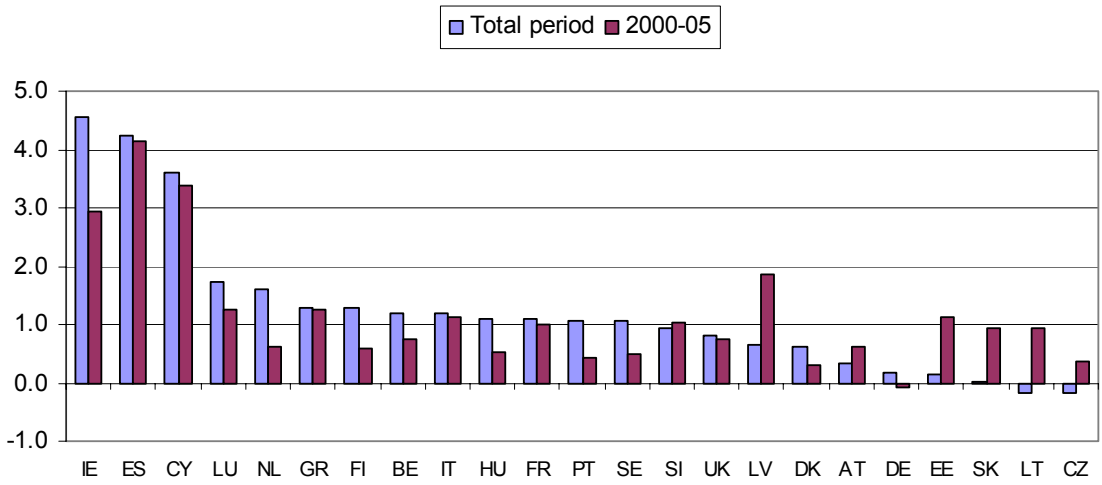
At the same time, performance in these terms has been uneven across the EU. While growth of employment averaged over 4% a year in the ten years 1995-2005 in Spain and Ireland, in Germany, Estonia and Slovakia, there was barely any increase at all and in Lithuania and the Czech Republic, employment declined[16] (Figure 4.1, which shows the growth rates in employment over the ten years 1995-2005 – or over the slightly shorter

[16] It should be noted that these changes are based on the 'consistent' employment series published by Eurostat, which, as noted earlier, is also used to adjust the LFS data on the structure of employment to be more consistent over time. . The changes calculated differ for some countries from those given by the employment series in the National Accounts, even though for the EU as a while the changes are much the same. In particular, in France, the increase shown by the consistent series between 2000 and 2005 (1% a year) is higher than that shown by the National Accounts (0.6%). The same applies to Spain (4.1% and 3.3%), Slovenia (1.0% and 0.4%) and Slovakia (0.9% and 0.6%). On the other hand, the increase in employment shown by the National Accounts is slightly higher than shown by the consistent series in Finland (0.9% a year as against 0.6%), the UK (0.9% as against 0.7%) and most especially in Luxembourg (3.1% as against 1.3%). These differences, however, do not significantly affect the results of the analysis and the general conclusions reached.

period for which data are available in the case of the new Member States – and over the five years 2000-2005; Appendix Table B.1 shows the levels of employment as an index with 2000 = 100 in each of the ten years and, therefore, the starting year for the new Member States).

Figure 4.1

Employment growth rates



Over these ten years, employment in most of the EU-15 countries increased by around 1% a year or more on average. In the new Member States, by contrast, except for Cyprus, Hungary and Slovenia, employment either increased by less than this or declined. In the second half of the period, however, from 2000 to 2005, there was a significant change. With only a few exceptions, the growth in employment in the EU-15 countries was less than over the period as a whole, and by implication even further below the rate of growth in the first half of the period, while in most of the new Member States, employment increased by more.

The difference in performance among the EU-15 countries over the second half of the period especially is of particular interest in the context of the study. The countries which stand out as having a similar rate of employment growth between 2000 and 2005 as over the previous five years are Spain, Greece, Italy, France and Germany, while in Austria, employment increased by more in the later years than in the earlier ones. In both Spain and Greece, GDP growth over the later period was markedly above the EU average (over 3% a year in Spain and over 4% a year in Greece), so providing some explanation of the better than average employment performance. In the other four countries, however, GDP growth was no higher (in the case of France) or lower (in the case of the other three countries) than average and substantially less than in the first half of the period. In Austria, it was only half the rate, in Italy and Germany, around a third. In all of these countries, therefore, aggregate productivity growth was far lower in the years 2000-2005 than it had

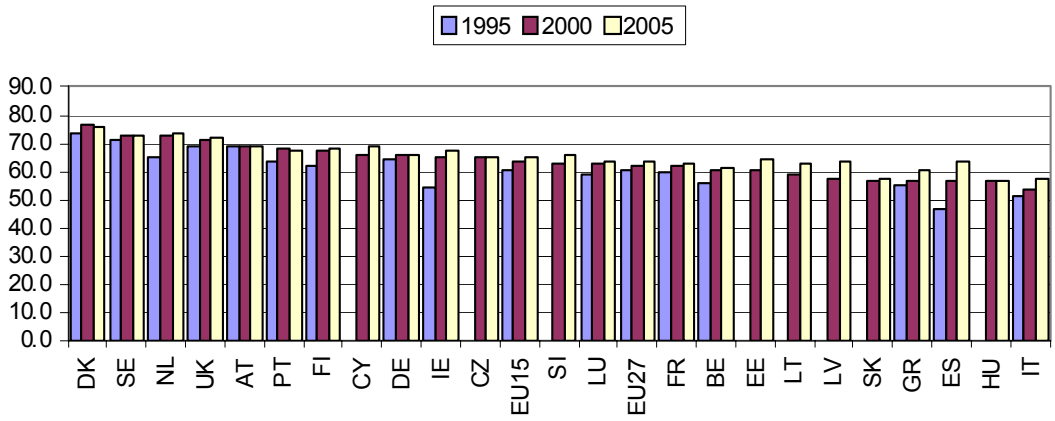
been earlier – less than 1% a year in both Germany and Austria, negative in Italy, where employment rose by around 1.4% a year, GDP by just 0.7%.

A further feature to note for later reference is the performance of Spain, as well as Cyprus, over both the longer and shorter periods. Over both periods, employment in Spain increased by around 4% a year. In both periods, this was slightly more than the rate of GDP growth, implying a continuous fall in aggregate productivity over the ten years, in Cyprus, it was much the same, implying no growth at all in aggregate productivity.

The performance in the new Member States is also worth noting. In all three of the Baltic States (Estonia, Latvia and Lithuania), the much higher rate of employment growth between 2000 and 2005 than in the previous five years was associated with an increase in the rate of GDP to around 8% a year in each case. Despite the rise in employment, therefore, aggregate productivity growth was still very high (close to 7% a year). In Slovakia, where there was also a marked increase in employment growth in 2000-2005, this was matched by a similarly higher rate of GDP growth and, accordingly, much the same rate of productivity growth (around 3.5% a year). The same was the case in the Czech Republic, where productivity growth was similar in the later period. In Slovenia, on the other hand, where there was a slight slowdown in GDP growth in the later period (to around 3.5% a year), this was accompanied by a small increase in employment growth, implying some fall in aggregate productivity. In Hungary, by contrast, GDP growth was much the same in the two periods, but employment growth slowed down significantly, signifying an increased rate of productivity growth.

Figure 4.2

Employment rates



The consequence of this employment growth over the ten years has been an increase in the employment rate – the proportion of those of working-age in employment – which is the main focus of the Employment Strategy which over the EU as a whole went up from 60.1% to 63.4% between 1995 and 2005 (Figure 4.2). As implied by growth performance,

however, the increase was less over the second half of the period than the first, by only 1 percentage point over the five years, which is much less than the rate of required to achieve the target of 70% by 2010 set at the Lisbon Council in 2000[17].

Moreover, although the employment rate rose markedly in some countries over the period 2000-2005, there were no countries in which the rate was below 70% in 2000 where it increased to this level or above in the subsequent five years. Accordingly, it remained the case that there were only four countries – Denmark, Sweden, the Netherlands and the UK – where the rate was above the Lisbon target in 2005. On the other hand, there are several countries in which the rate is only slightly below the target. Moreover, the biggest increases in the rate over the five years were generally in countries in which it was lowest – three Baltic States, Greece, Spain and Italy – indicating some convergence of employment levels over the period[18].

These changes in employment have been accompanied by changes in the sectoral structure of the economy, though not necessarily at the same rate in different countries, in part because of the very different starting positions, in part because of the differing rates of employment growth, as well as significant variations in the growth of productivity which have been pointed to above. They have also been accompanied by shifts in the structure of occupations, or in types of job, within sectors, reflecting the effect of technological advance and changes in the organization of work. The remainder of this section is concerned with the consequences in different countries of both the overall employment performance described above and these underlying structural changes for job quality as reflected in the two indicators defined above.

The aim is, therefore, to see whether and to what extent the changes in question have been accompanied by, on the one hand, an increase in people employed in jobs with relatively high wages or relatively low ones, and, on the other, by an increase in those employed in jobs requiring a relatively high education level or, alternatively, by an increase in employment in jobs which can be done without educational qualifications beyond basic schooling.

4.2 Changes in job quality as reflected in the relative wage indicator

Changes in the number of jobs in the different wage quintiles – whether there is s shift in employment over time to higher or lower wage jobs – can be summarized in an analogous

[17] For the EU15 countries, which formed the EU when the Lisbon employment rate target was set, the performance in these terms has been slightly better, the employment rate rising from 60.1% in 1995 to 65.3% in 2005, though by only by 2 percentage points between 2000 and 2005.

[18] In two of the Member States not included in the analysis, however, Poland and Malta, where the employment rate is lowest of all, at only around 53-54%, there was little or no increase over these five years.

way to the method used above for summarizing the division of jobs between quintiles. This involves calculating an overall indicator which assigns an index value of 5 to jobs which are included in the top quintile of earnings, a weight of 4 to those include in the next one from the top and so on down to a weight of 1 for jobs included in the bottom quintile – i.e. those which are the lowest paid in the economy. In 2000, which has been taken as the base year for the analysis – i.e. the year for which the quintiles are defined – the sum of these weights should equal 3 since in this year, by definition, the number employed should be equally divided between the five quintiles, each containing 20% of the total.

In practice, the sum in some cases is not precisely 3, as explained above, since the quintiles do not contain precisely the same number of jobs because of the 'lumpiness' of the wage distribution and the discrete character of the number of persons in each job. To adjust for this and to simplify interpretation of the results, the index so calculated has been set to 1 in 2000. This, of course, does not change the movement shown by the index, only the absolute level. An increase in the index above 1, therefore, indicates a shift towards jobs with relatively high wages, and a corresponding shift away from those with relatively low ones, and so an increase in the average quality of jobs as defined here, while a reduction indicates the reverse.

It should be noted that because of the nature of the data, which are derived from household surveys of a sample of the population, the division of employment between quintiles is inevitably subject to small fluctuations from year to year which reflect differences in the composition of the sample more than actual changes in the distribution of jobs. The results of the analysis should be interpreted with this in mind, in the sense that not too much weight should be attached to small year-to-year movements but instead the focus should be on apparent trends over the period.

It should also be recognized that like any summary measure, the indicator reveals nothing about the details of any change or the nature of the shift in employment which occurred. An increase in the value of the indicator, therefore, is consistent with a variety of different kinds of change – with, for example, employment shifting from jobs in the middle of the wage ranking to those further up, from those at the bottom of the ranking to those slightly above the bottom or with a shift down the ranking in some parts of the distribution being more than offset by an upwards shift in other parts. Accordingly, an increase in the value of the indicator should not be interpreted as signifying that there was a systematic upward shift in employment to higher paid jobs or a universal improvement in job quality, so measured, only that, on average, there was a shift of this kind. There is a consequent need to consider the details of shifts in employment between quintiles in order to obtain a full picture of developments over the period covered. This is done below after examining changes in the summary indicator.

Table 4.2

Composite index of job quality, 2000=1

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria	0.983	0.982	0.990	0.997	0.996	1.000	1.011	1.012	1.010	1.008	1.000
Belgium	0.996	1.000	0.999	1.008	1.016	1.000	1.012	1.006	1.006	1.021	1.029
Denmark	0.971	0.980	0.974	0.972	0.994	1.000	1.012	1.020	1.024	1.015	1.023
Finland			0.979	0.976	0.996	1.000	1.005	1.012	1.020	1.034	1.034
France	1.000	0.996	0.998	0.999	1.000	1.000	1.004	1.008	1.022	1.022	1.028
Germany	0.991	0.999	1.001	1.002	0.999	1.000	1.003	1.005	1.013	1.017	1.012
Greece	0.974	0.981	0.985	1.000	0.998	1.000	1.005	1.009	1.008	1.009	1.006
Ireland	0.969	0.990	0.990	0.990	0.994	1.000	1.014	1.025	1.034	1.050	1.038
Italy	0.959	0.961	0.970	0.977	0.988	1.000	0.996	1.001	1.002	0.995	0.993
Luxembourg	0.945	0.976	0.980	1.001	1.013	1.000	0.984	1.004	1.013	1.025	1.033
Netherlands		1.002	1.006	1.007	1.011	1.000	1.003	1.009	1.011	1.002	0.996
Portugal	0.999	0.997	0.987	0.983	0.994	1.000	1.003	1.011	1.021	1.037	1.043
Spain	0.984	1.002	1.008	1.005	1.000	1.000	1.007	1.007	1.005	1.011	1.010
Sweden			0.985	0.987	0.998	1.000	1.010	1.018	1.022	1.027	1.038
United Kingdom	0.983	0.987	0.988	0.989	0.997	1.000	1.002	1.005	1.008	1.009	1.015
Cyprus					0.993	1.000	1.002	0.998	1.000	0.993	0.996
Czech Republic				0.989	0.993	1.000	1.008	1.003	1.005	1.018	1.029
Estonia			0.987	0.963	0.973	1.000	0.972	0.972	0.964	0.979	1.000
Hungary			0.995	0.995	0.996	1.000	0.998	0.999	1.012	1.023	1.018
Latvia				0.988	1.000	1.000	0.998	1.020	1.009	1.020	1.031
Lithuania				1.014	1.010	1.000	0.999	0.981	0.979	1.004	1.019
Slovak Rep.				0.990	1.000	1.000	0.996	0.984	0.985	0.987	0.998
Slovenia				0.981	0.997	1.000	1.003	0.998	1.023	1.030	1.029

The summary indices, calculated as described above, show in most countries a shift on average towards jobs at the upper end of the wage distribution, in the sense that the value of the index is higher at the end of the 10-year period than at the beginning (Table 4.2; it should be noted that the data shown in the table have been adjusted for breaks in the series, as summarized in appendix A). It is also the case that, again for most countries, there was an increase both in the first half of the period and in the second.

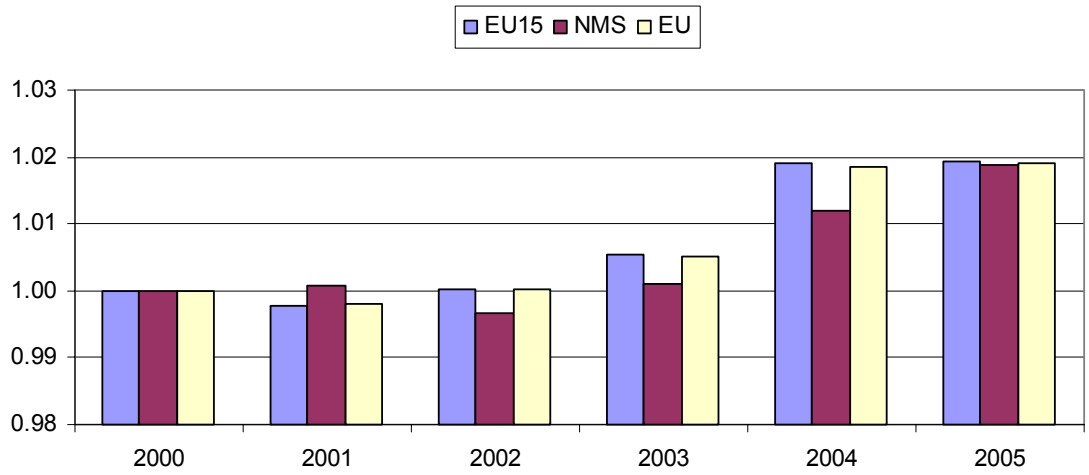
Over much of the EU, therefore, the quality of jobs, as measured by relative wages, improved, on average, over these ten years and fairly systematically over the last five years of the period from 2000-2005 for which data are available for all countries (Figure 4.3 which shows the value of the summary index in each of these five years calculated for tall the countries together as well as for the EU15 countries and the new Member States separately).

In the EU15 Member States considered separately, the index rose in both the first and the second half of the period in all countries except France, Italy and the Netherlands. In

France, the index remained broadly unchanged between 1995 and 2000 and then increased in the subsequent 5 year. In Italy, the index rose significantly between 1995 and 2000 but then declined marginally from 2000 to 2005. In the Netherlands, it declined over the first period and then remained broadly unchanged over the second. In the other countries included in this group, the increase in the index over the ten years as a whole was particularly marked in Luxembourg, Finland and Sweden and over the second half of the period, in Portugal.

Figure 4.3

Composite index for groups of countries, 2000-2005



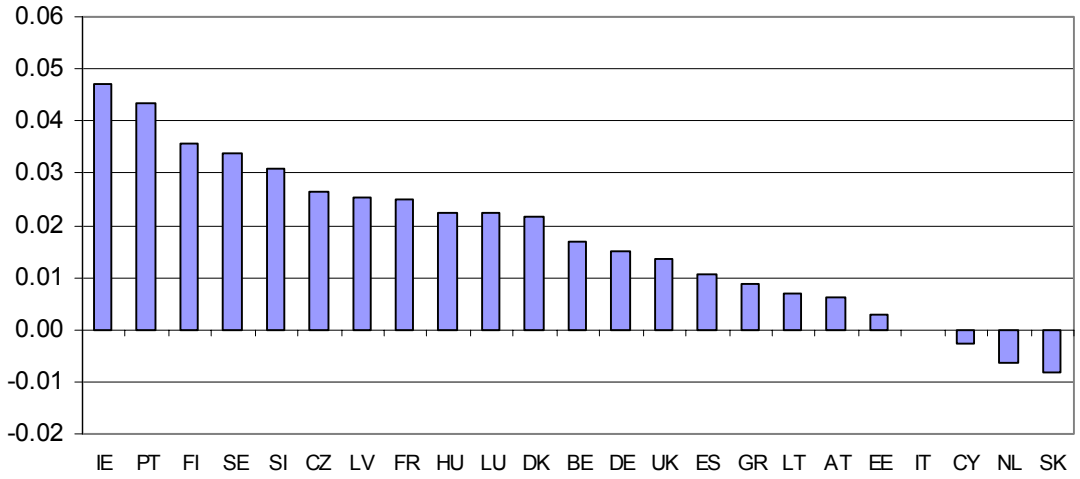
In the new Member States in Central and Eastern Europe, the index generally increased over the years for which there are data, in the sense that the value for the end year was higher than that for the first. Nevertheless, in each of the three Baltic States, the index fluctuated over the period more than elsewhere, largely reflecting the relatively small sample size of the LFS in these countries, making any firm conclusion about trends over the period difficult to draw. In the Czech Republic and Slovenia, the index rose almost continuously over the period, as it did, if to a lesser extent in Hungary. In Slovakia, the index seems to have risen, if only slightly, before 2000 (though there only two years of data available to judge this) but to have fallen marginally over the subsequent five years. In Cyprus, the index remained broadly unchanged over the period, though with a marginal fall after 2000.

It is interesting to focus on the movement in the index over last five years of the period, i.e. from 2000 to 2005, not only because data are available for all the countries covered for this period but also, as indicated above, because it is a period when there was a seeming change in underlying employment behaviour in a number of countries. In order to allow for fluctuations in the index, its value for last three years of the period have been averaged (Figure 4.4, which shows the change in the value of the index shown in Table 4.1 between

1999-2000 and 2004-2005, i.e. between the averages for the two years in each case in order to allow for fluctuations in the data).

Figure 4.4

Percentage point change in composite index of job quality in terms of relative wage quintiles, 1999-2000 to 2004-2005



According to the index, therefore, there was a shift of employment towards lower paid, and accordingly lower quality, jobs in three countries over these five years, in Cyprus, the Netherlands and Slovakia and no change in Italy. In all four of these countries, as indicated above, employment growth was relatively high over this period. In Italy, moreover, as also indicated, this growth was associated with a decline in aggregate productivity, which is consistent with a shift towards less productive jobs, measured in terms of value-added per person employed. Here, therefore, though there was no apparent change in job quality, the evidence suggests that increased net job creation might have been at the expense of a rise in job quality as has occurred in most other countries.

In Cyprus, in a similar way, employment growth occurred over this period without any apparent increase at all in aggregate productivity, which again seems to have been associated with a fall in job quality as measured here, though this fall was very small and certainly within the margins of error of this exercise.

In the Netherlands, employment growth was achieved with only a low rate of growth n GDP and, accordingly, relatively little increase in productivity, so that net job creation over this period may have occurred at the expense of job quality.

In Slovakia, the index of job quality declined in the years immediately after 2000 but then rose in the later years of the period. Any fall in job quality seems, therefore, to be in the process of being reversed.

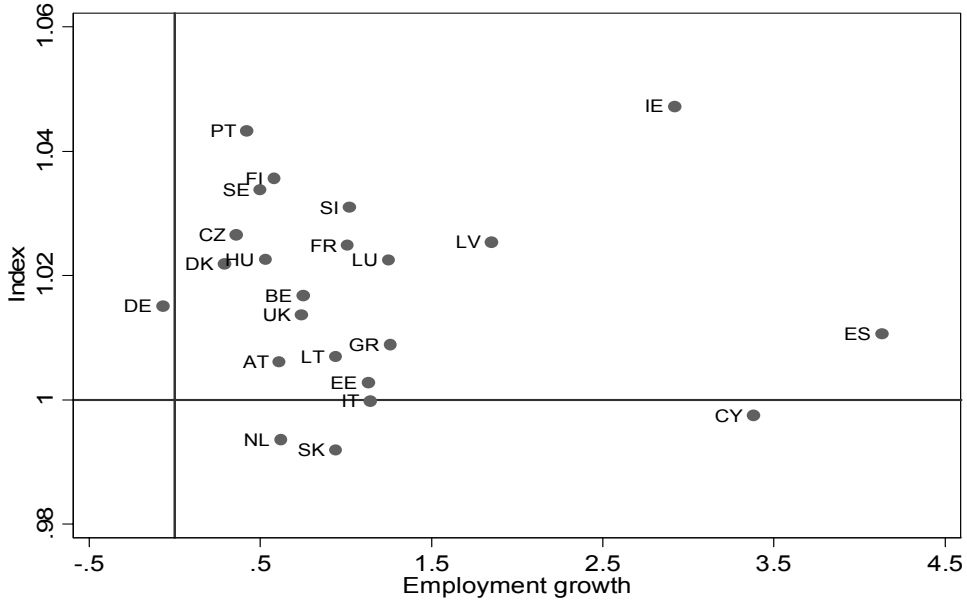
In the remaining 19 countries, overall job quality on this measure increased over the period. In some of these countries, employment rose relatively rapidly at the same time, in others, it rose only a little and there is no clear pattern with respect to the ranking of the countries according to the change in this measure of job quality and the rate of employment growth. This can be seen in Figure 4.5, which shows the relationship between the summary, or composite, index of the change in job quality as measured by relative wages and employment growth over the period 2000-2005.

In all countries, apart from the four in which job quality seems to have declined together with Germany in which employment fell marginally over these five years – i.e. all the countries in the upper right quadrant – the twin objectives of 'more and better jobs' were achieved, though to varying extents. It is evident that Ireland was most successful by some way in attaining more jobs and at the same time jobs of higher quality, while Slovenia, France, Luxembourg and Latvia (though the uncertainty attached to trends in the job quality indicator in the last case need to be kept in mind) achieved an above average increase in employment growth coupled with an above average increase in job quality.

Other countries achieved either a higher than average increase in the number employed – Latvia and Greece – or a higher than average increase in job quality – Portugal, Finland and Sweden – but not both.

Figure 4.5

Change in composite Index of job quality, 1999-2000 to 2004-2005, and employment growth, 2000-2005



It is also evident that there is no clear relationship at all between the rate of employment growth achieved by countries and the change in job quality. (The regression of

employment growth on the summary index of job quality is insignificant, even if Ireland, Cyprus and Spain are excluded.) The rate of employment growth over the 5-year period was, therefore, was much the same in, for example, Luxembourg, Greece and Italy, but rates of improvement in job quality were very different, while job quality improved to a similar extent in Denmark, Belgium and Latvia, but the increase in the number employment differed significantly.

To explore the relationship between employment growth and job quality in more detail, it is instructive to consider the change in aggregate productivity which occurred at the same time. Figure 4.6 shows the relationship between the change in job quality as measured by the summary index and productivity growth, as measured by the change in GDP per person employed.

Whereas at first sight there seems to be no relationship between the two variables, if the transition countries are excluded (i.e. the new Member States less Cyprus) – where productivity growth has been much higher reflecting both restructuring of the economies and catching up with the technology and working methods used in the rest of the EU – a clear positive association between the two emerges. This is particularly the case if Greece, which showed a similar growth of productivity to that in the transition countries over this period for similar reasons, is excluded (see Figure 4.7). Moreover, it is also the case that Slovenia, which experienced a growth in productivity over the period more similar to that in the EU15 countries than in the other new Member States, which has had a smoother transition to a market economy and which has a level of GDP per head above that in Portugal, shows as similar relationship between the two variables as the EU15 countries.

In the EU15 countries, therefore, the shift of employment to higher paid jobs tended to be more marked in those countries where productivity growth was highest. Conversely, low growth in productivity or a decline was associated with little or no shift of employment to higher paid jobs or a shift in the opposite direction.

It is equally instructive to consider the relationship between the change in job quality, as measured by the shift in employment between wage quintiles, and productivity growth, on the one hand, and the link to employment growth, on the other, in individual countries. In Spain, therefore, which experienced a similar rate of employment growth between 2000 and 2005 as Ireland, the apparent rise in job quality – or the shift away from lower paid jobs – was much smaller, in line with the marked difference in productivity growth between the two countries (in Spain, it was negative, in Ireland around 2.5% a year). In Spain relative to Ireland, the data consequently suggest some trade-off of job quality for job growth, while in Ireland, especially as compared with other countries, the twin objectives of the Employment Strategy seem to have been achieved, as noted above.

This apparent link between productivity growth and job quality also seems to hold for the Netherlands and Austria, in both of which employment growth was high over the period and productivity growth low and in both of which job quality seems to have risen only slightly. In Germany and France, however, where the experience was similar in respect of employment and productivity growth, job quality seems to have risen by more and there seems to have been less of trade-off in this regard. At the same time, in France, it is relevant to take account of the reduction in average working time following the introduction of the 35-hour week, which accordingly means that the change in GDP per person employed tends to understate the actual increase in productivity measured in terms of labour input.

Figure 4.6

Change in composite index of job quality, 1999-2000 to 2004-2005, and aggregate productivity growth, 2000-2005

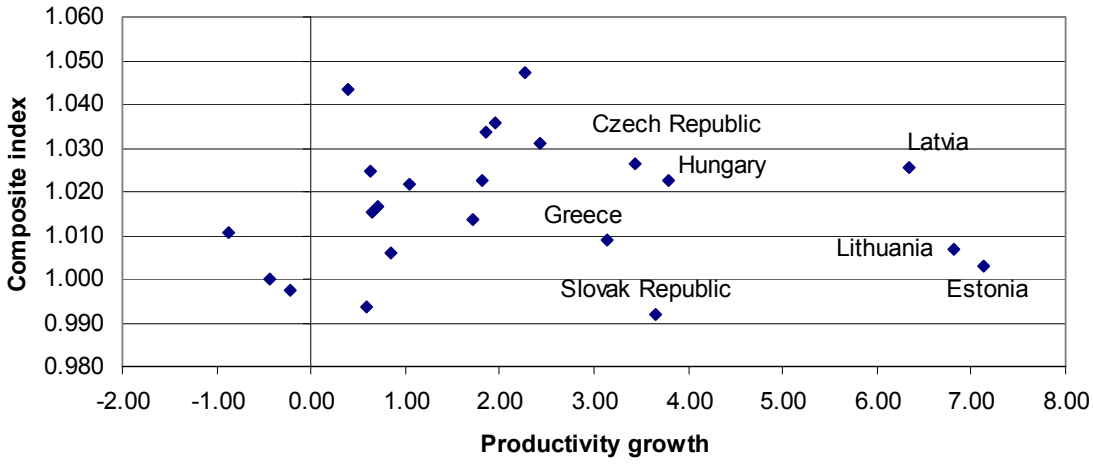
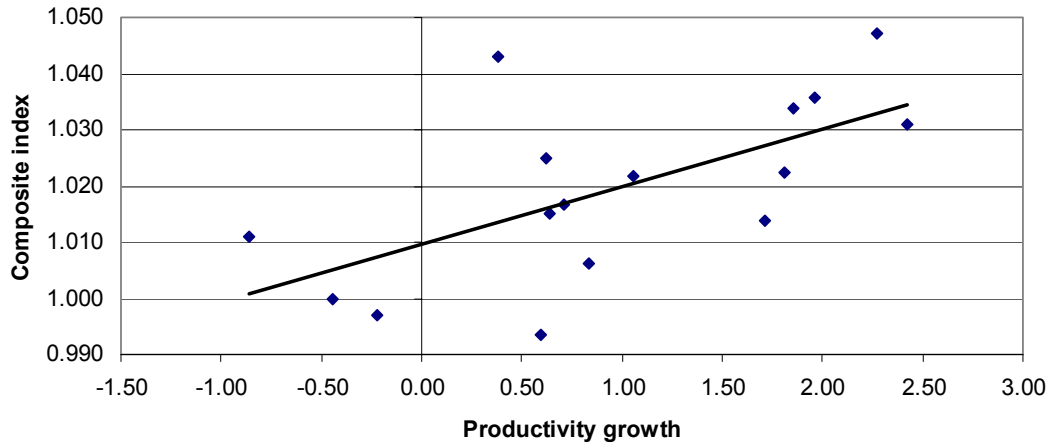


Figure 4.7

Change in composite index of job quality, 1999-2000 to 2004-2005, and productivity growth in the EU15, excluding Greece and including Cyprus and Slovenia, 2000-2005



Elsewhere, the relatively large shift towards higher paid jobs in Portugal over this period is interesting since it coincided with a reduction in employment between 2002 and 2005 when

GDP growth barely increased at all. The jobs that were lost over this period, therefore, seem to have been more the lower paid ones than the higher paid and, accordingly, job quality improved on average, but in this case at the apparent expense of employment.

4.3 Changes in job quality as reflected in the relative skill indicator

The results of applying the second indicator to the change in employment, or number of jobs, over the ten years 1995-2005, can be summarized in the same way as for the relative wage indicator. Like the latter, this shows a shift over the period towards higher quality jobs, as measured by the relative level of educational attainment in nearly all countries (Table 4.3). Indeed, the increase in the summary index of this shift is in most cases larger than the shift towards jobs with higher wages. The focus here is on the period 2000-2005 for which data are available for all countries.

Table 4.3

Composite index of job quality based on skill ranking, 2000=1

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria	0.976	0.986	0.989	1.000	0.994	1.000	1.011	1.011	1.008	1.025	1.019
Belgium	0.981	0.992	0.990	0.999	1.010	1.000	1.011	1.018	1.008	1.014	1.030
Denmark	0.973	0.982	0.975	0.978	1.002	1.000	1.006	1.015	1.027	1.026	1.030
Finland			0.977	0.971	0.997	1.000	1.004	0.999	1.000	1.011	1.010
France	0.996	0.995	0.996	0.996	0.998	1.000	1.004	1.012	1.016	1.014	1.019
Germany	0.988	0.996	1.000	1.002	0.999	1.000	1.003	1.007	1.014	1.017	1.017
Greece	0.958	0.966	0.973	0.994	0.997	1.000	1.009	1.020	1.024	1.031	1.031
Ireland				0.998	0.998	1.000	1.008	1.019	1.025	1.031	1.021
Italy	0.954	0.960	0.969	0.973	0.983	1.000	1.002	1.008	1.006	1.008	1.001
Luxembourg				0.998	1.023	1.000	0.977	0.998	0.986	0.987	1.000
Netherlands		0.983	0.993	0.999	1.006	1.000	1.003	1.008	1.014	1.013	1.010
Portugal	1.019	1.010	0.994	0.982	1.000	1.000	1.001	1.006	1.010	1.028	1.034
Spain	0.961	0.984	0.992	0.993	0.993	1.000	1.007	1.011	1.008	1.016	1.025
Sweden			0.987	0.987	0.992	1.000	1.005	1.012	1.017	1.025	1.027
United Kingdom	0.976	0.982	0.984	0.986	0.995	1.000	1.003	1.008	1.015	1.020	1.026
Cyprus				1.013	0.988	1.000	1.009	1.010	1.015	1.008	1.004
Czech Republic				0.991	0.996	1.000	1.009	1.005	1.013	1.019	1.026
Estonia			1.006	0.996	1.001	1.000	0.985	1.006	1.000	0.994	1.016
Hungary			0.981	0.984	0.994	1.000	0.994	0.994	1.009	1.016	1.023
Latvia				0.957	0.976	1.000	1.005	1.014	0.982	1.011	1.040
Lithuania				1.009	1.001	1.000	1.016	0.993	0.987	1.010	1.039
Slovak Republic				0.976	0.990	1.000	1.003	0.994	1.001	1.008	1.018
Slovenia				0.959	0.994	1.000	1.004	1.014	1.041	1.036	1.050

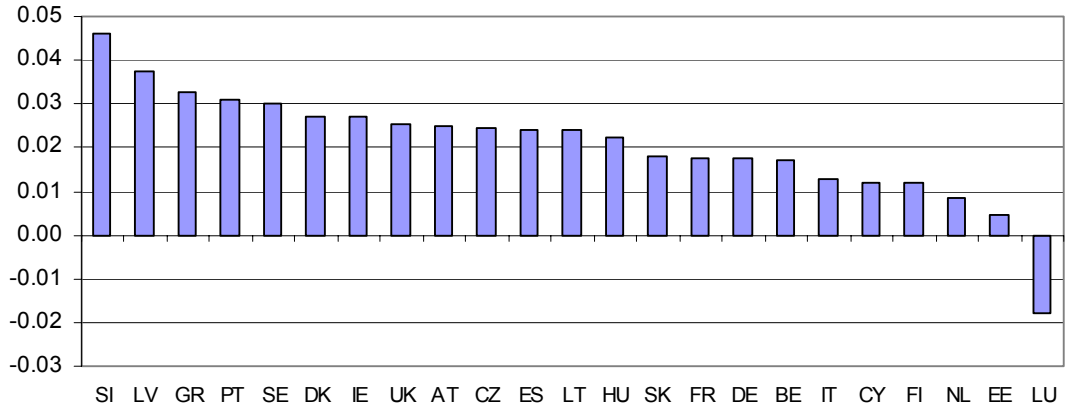
In this case, only Luxembourg shows a decline in the summary index over this period and accordingly a shift away from jobs requiring higher education levels (Figure 4.8, which in

the same way as Figure 4.4 above shows the change in the index between 1999-2000 and 2004-2005).This contrasts with the movement shown in by the index of job quality based on wage quintiles, though in both cases, the index tends to fluctuate from year to year, reflecting in large measure the relative small sample size of the survey. The actual change which occurred is, therefore, uncertain.

In all the other countries, people shifted into more skill-intensive jobs over these five years. This was particularly the case in Slovenia and Latvia, and to a lesser extent in Portugal, Greece and Sweden. In Slovenia, it confirms the improvement in job quality suggested by the relative wage-based index, which as indicated above has also gone with a relatively high growth of employment. In Sweden, it also confirms the improvement based on the relative wage index, though here the growth in employment was less marked – though still positive. In Portugal, it suggests that the contraction of employment in the later years of the period was concentrated not among the low paid but also among the lower skilled. In Latvia, the increase in the wage-based index was equally above average, which leaves only Greece where the rise in skilled based shows a different movement relative to that in other countries than the index based on wages.

Figure 4.8

Percentage point change in job quality index based on skill quintiles, 1999-2000 to 2004-2005



At the bottom end of the scale, the three countries which showed a fall in job quality based on the index calculated in terms of relative wages – Cyprus, the Netherlands and Slovakia – all show a shift towards jobs requiring higher education levels, though relative small in the case of Cyprus and the Netherlands. There was also an upward shift in Italy where there was no change in the wage-based index. Conversely, in Finland, where the wage-based index shows a comparatively large increase, there was only a relatively small upward shift towards higher skill jobs.

Nevertheless, both measures suggest that job quality improved on average over the period examined in the great majority of Member States. This raises the question, however, of

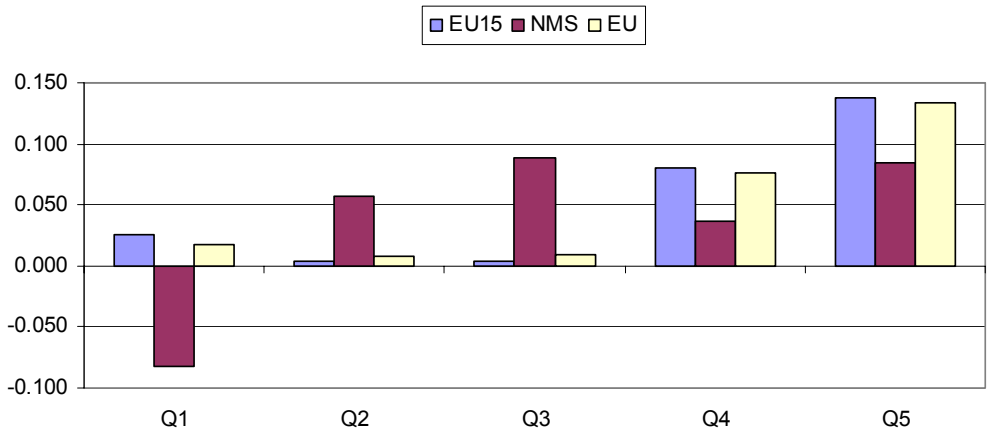
where over the distribution of jobs, ranked in terms of relative wages and skills, the main shifts occurred, which is equally important for an understanding of the pattern of change over this period. This is examined in the next section below.

4.4 The shift in job quality by quintile

The concern here is with the changes in employment which have occurred over the distribution of jobs ranked in terms of relative wages levels in the different quintiles. Since there is a substantial amount of data to present, the focus here is on the change in the relative number of jobs – and the people employed in them – in each of the quintiles from 2000 and to 2005. The more detailed results showing the division of employment between the quintiles in each year from 1995 to 2005 are set out in the appendix (specifically in Appendix Tables B.2 and B.3).

Figure 4.9

Percentage change of employment in groups of countries by wage quintile, 2000-2005



To begin with the overall change in the EU as a whole, the growth in employment which occurred over the five years 2000-2005 was largely concentrated in the top and next to top quintile, defined in terms of relative wages (Figure 4.9). The number employed in the top quintile – i.e. in the highest paid jobs – therefore, increased by around 13% over this period in the EU countries covered and in the next to top quintile by some 8%.

By contrast, there was little growth of employment – only around 1% or so – in jobs in the middle of the wage distribution, in the second and third quintiles. There was slightly more growth – around 2% – in jobs at the bottom quintile of the wage distribution, i.e. in the lowest paid ones, though still much less than in jobs in the upper part of the wage distribution.

The experience of the EU15 countries and the new Member States over this period, however, was markedly different. In the EU15 countries taken together, the pattern of

employment growth was much the same as in the EU as a whole, though even more so, in the sense that growth of employment was slightly higher in the top two quintiles, slightly lower in the second and third quintiles in the middle of the wage distribution and slightly higher in the bottom quintile. This indicates, therefore, some polarization in the growth of jobs at the top and bottom of the wage ranking – in other words, there was not a systematic shift from lower paid to higher paid jobs over the period. The experience is consistent in some degree with the prediction of the skill-biased technological change hypothesis, as indicated in the introduction to the study, that the biggest increase in jobs would tend to be in those at the top of the wage hierarchy and the biggest loss would tend to be in the middle. Nevertheless, although employment increased in jobs at the bottom end of the scale, the rise was only slightly greater than in the middle of the wage distribution and there was a marked shift away from such jobs in relative terms as well as from those in the middle of the distribution.

In the new Member States, on the other hand, in sharp contrast to the experience in the EU15 countries, the biggest growth in jobs was in the middle of the wage distribution rather than at the top. The increase in employment in jobs in the third quintile, therefore, was around 9% between 2000 and 2005 in the new Member States covered here taken together, some 1 percentage point more than the increase in employment in those in the top quintile, while the growth of employment in the second quintile was around 6%, some 2 percentage points more than in the fourth quintile. Moreover, in stark contrast to their growth in the EU15 countries, jobs in the bottom quintile declined in number by 8%.

The nature of the employment growth which occurred in the new Member States over this period was, therefore, very different to that in the EU15 countries. Though there seems to have been an increase in job quality, in the sense that there was a shift towards higher paid jobs, this was by no means systematic across the wage distribution. In particular, unlike in the EU15 countries, the lowest paid jobs declined in number significantly, while job growth was more evenly spread across the wage distribution. The reduction in jobs at the bottom end of the scale is partly attributable to the decline in agriculture, which in most of the countries accounts for much more of total employment than in the EU15.

The shifts in employment between jobs which occurred over this period, however, were by no means common to all the countries included among the EU15 or new Member States. Nevertheless, there are similar features in the experience of many of the countries.

There was an increase in employment in jobs in the top wage quintile in all EU15 countries, (Table 4.4). Moreover, in all apart from Greece and Italy, as well as Spain where the rise was the same, this increase was larger than the overall growth over the period, implying a shift towards such jobs. There was also an increase in employment in jobs in the next to top quintile in nearly all EU15 countries, the only exceptions being Austria and Sweden,

though growth in this quintile was also less than the overall growth in Belgium, Denmark and Italy. In all of these countries, apart from Greece and Italy, however, growth in the top two quintiles taken together was greater than the growth in total employment. In all EU15 countries except Greece and Italy, in most cases markedly so, there was a marked shift of employment in this period towards jobs in the top two quintiles.

In the third quintile, employment either declined or increased by less than the total in most countries. The only exceptions were Greece, Italy, Spain Denmark and Sweden. Employment in the second quintile also declined or rose by less than the total in most countries, the only exceptions being again Greece and Italy, together in this case with Austria and Belgium.

Table 4.4

Change in number employed by quintile (in %), 2000-2005

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	Total
Austria	-0.2	17.6	-7.8	-4.1	10.4	3.1
Belgium	-6.0	4.6	-0.2	2.4	16.0	3.8
Denmark	-0.1	-8.3	3.1	0.2	12.7	1.5
Finland	-3.5	-5.2	1.3	9.4	14.1	2.9
France	6.1	-1.7	-14.6	14.4	18.9	5.2
Germany	-0.6	-2.3	-7.3	1.9	6.3	-0.3
Greece	-6.1	21.1	14.9	8.8	0.3	6.4
Ireland	8.7	4.6	5.2	27.4	30.8	15.5
Italy	3.4	11.0	7.7	4.9	0.6	5.8
Luxembourg	-1.5	-0.4	1.8	18.0	14.9	6.4
Netherlands	8.4	-0.2	-0.1	4.0	3.2	3.1
Portugal	-15.6	1.3	-4.9	14.2	12.4	2.1
Spain	19.5	15.0	26.9	28.5	22.4	22.4
Sweden	-15.4	2.0	22.2	-3.8	16.7	2.5
United Kingdom	2.2	1.0	-3.9	10.0	9.6	3.8
Cyprus	26.7	5.7	23.1	18.8	16.5	18.1
Czech Republic	-20.8	6.0	3.2	10.0	5.1	1.8
Estonia	10.6	-1.9	4.3	15.3	3.1	5.8
Hungary	-10.6	8.0	8.2	-3.7	9.4	2.7
Latvia	-14.8	10.1	22.2	9.4	-1.2	9.6
Lithuania	2.0	-9.4	34.6	9.1	17.6	4.8
Slovak Republic	4.1	9.6	7.3	-4.7	9.3	4.8
Slovenia	1.3	4.2	-4.7	-2.7	27.1	5.2

In the bottom quintile, there was a more general decline in employment and the only countries in which it expanded by more than the total were France and the Netherlands. Except in these two countries, therefore, the experience over this 5-year period does not seem to have been wholly consistent with the prediction of the skill-biased technological

change hypothesis that there would trend to be a polarization of jobs towards the bottom and top of the wage hierarchy. At the same time, however, there was a pronounced shift in most countries towards higher paid jobs.

In the new Member States, employment increased in the top quintile in all the countries apart from Latvia, though the increase was also less than the overall growth in employment in Cyprus and Estonia, while employment in the next to top quintile declined in Hungary, Slovenia and Slovakia and was also less than the overall growth in Latvia. Only in the Czech Republic, Slovakia and Lithuania was the expansion of employment in jobs in the top two quintiles greater than the overall growth and, correspondingly, was there a shift towards higher paid jobs.

Table 4.5

Percentage change of employment by quintile relative to total employment change, 2000-2005

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Austria	-3.3	14.5	-10.9	-7.2	7.3
Belgium	-9.8	0.8	-4.0	-1.4	12.2
Denmark	-1.6	-9.8	1.6	-1.3	11.2
Finland	-6.4	-8.1	-1.6	6.5	11.2
France	0.9	-6.9	-19.8	9.2	13.7
Germany	-0.3	-2.0	-7.0	2.2	6.6
Greece	-12.5	14.7	8.5	2.4	-6.1
Ireland	-6.8	-10.9	-10.3	11.9	15.3
Italy	-2.4	5.2	1.9	-0.9	-5.2
Luxembourg	-7.9	-6.8	-4.6	11.6	8.5
Netherlands	5.3	-3.3	-3.2	0.9	0.1
Portugal	-17.7	-0.8	-7.0	12.1	10.3
Spain	-2.9	-7.4	4.5	6.1	0.0
	Quintile 1	**Quintile 2**	**Quintile 3**	**Quintile 4**	**Quintile 5**
Sweden	-17.9	-0.5	19.7	-6.3	14.2
United Kingdom	-1.6	-2.8	-7.7	6.2	5.8
Cyprus	8.6	-12.4	5.0	0.7	-1.6
Czech Republic	-22.5	4.2	1.4	8.2	3.4
Estonia	4.8	-7.7	-1.5	9.5	-2.7
Hungary	-13.3	5.3	5.5	-6.4	6.7
Latvia	-24.4	0.5	12.6	-0.2	-10.8
Lithuania	-2.8	-14.2	29.8	4.3	12.8
Slovak Republic	-0.7	4.8	2.5	-9.5	4.5
Slovenia	-3.9	-1.0	-9.9	-7.9	21.9

In the third quintile, on the other hand, employment declined only in Slovenia and the increase was larger than the overall growth in all the other countries apart from Estonia. Employment also increased by more than average in the second quintile in half the

countries. In the bottom quintile, however, it declined substantially in the Czech Republic, Hungary and Lithuania and rose by more than the overall growth only in Cyprus and Estonia. These were the only two countries in which there was not a shift of employment away from the lowest paid jobs.

Accordingly, the experience in most EU15 countries over the five years 2000-2005 was for employment to shift from jobs in the lower part and middle part of the wage distribution to those in the upper part of the wage distribution, especially those in the top quintile (Table 4.5, which shows the change in employment in each quintile relative to the overall growth in employment). The main exceptions were Greece and Italy, though there was also a relative expansion of jobs in the lower part of the distribution in Austria and the Netherlands.

In the new Member States, the shift in employment to jobs in the upper part of the wage distribution was less clear-cut, apart from in the Czech Republic, Lithuania and Slovenia, and there was more of a shift towards jobs in the middle of the distribution away from those lower down.

These results, it should be noted, are similar for the ten years 1995-2005 as a whole for those countries for which data are available (see Appendix Table B.3).

4.5 Changes in employment by skill quintile

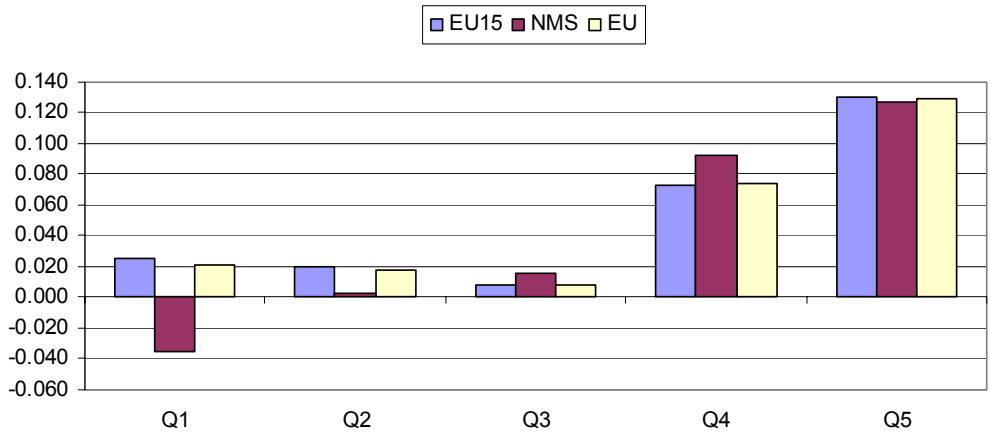
The shift in employment between jobs of different quality can also be examined in terms of the second indicator developed here, namely the relatively skill, or education, level required by jobs. As noted above, there seems to be wide consensus among economists that the technological advance which has occurred over recent decades has been skill-biased, in the sense that the jobs created have disproportionately been for highly educated workers as a consequence of shift towards skill- and knowledge-intensive activities. The nature of the shift in jobs with different educational requirements is of interest from this perspective as well as in terms of its implications for job quality and the extent to which it confirms, or contradicts, the conclusions drawn from the wage-based analysis described above.

As indicated earlier, the composite index of relative education levels showed a similar change over the period 2000-2005 as the index of relative wages (as well as over the preceding five years). The shift in employment between the various quintiles defined in terms of education is also similar, in the sense that in the EU as a whole the increase in employment over this period occurred predominantly in the top and next to top quintiles, i.e. in jobs with the highest education requirements, particularly in the top quintile, where the number employed expanded by around 13%, the same as for the top quintile defined in terms of wages. Although there was also some increase in employment in jobs in the lower

three quintiles, this was relatively small in each case, especially in the third quintile (Figure 4.10).

Figure 4.10

Percentage change of employment in country groups by skill quintile, 2000-2005



For the EU15 countries, the relative shifts in employment between the education quintiles are remarkably similar to shifts between wage quintiles, examined above. For the new Member States, however, the picture is somewhat different. Whereas the shift in employment in terms of relative wages occurred in the middle of the distribution as well as the top, this is not the case in respect of the shift in terms of education levels. In this case, the increase in employment which occurred over the period is very much concentrated in the top two quintiles, where it was much the same as for the EU15 countries, and even higher in the next to top quintile. There was only a small increase in jobs In the middle of the distribution defined in terms of skills (less than 2% in the third quintile as against a rise of around 9% in respect of wages), and while there was sill a reduction in employment in jobs in the bottom quintile – i.e. in the lowest skill ones – this was also less than for the reduction in jobs in the lowest wage quintile.

The shift in employment between the different skill quintiles in individual countries within the EU15 and new Member States is again similar to the aggregate shift for these groupings in most cases though not all. Moreover, there are some differences as compared with the shift in jobs between wage quintiles examined above (Table 4.6 as compared with Table 4.5 above). In particular, there was a more general tendency for employment to shift towards jobs in the two top quintiles than in the case of the shift in terms of relative wages. In this case, only in Italy and Estonia was there not a relative shift towards jobs in the top quintile – i.e. those requiring the highest level of education. In several EU15 countries (Luxembourg, Finland and the Netherlands, especially), this was associated with a decline in employment in the next to top quintile.

Among the new Member States, there was a shift away from jobs in the next to top skill quintile only in Slovakia, and then very small. By contrast, there was a universal shift in employment in these countries away from jobs in the bottom quintile – i.e. those with the lowest educational requirements. There was also a widespread shift away from these jobs in the EU15 countries, the only exceptions being Finland and Luxembourg. This was accompanied by a shift in most countries in the EU15 away from jobs in both the next to bottom quintile and the middle quintile, whereas in the new Member States, there was a relative increase in employment in the next to bottom quintile in 5 of the 8 countries.

Table 4.6

Deviations of index in 2005 from overall mean based on skill-intensity ranking

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5
Austria	-9.9	7.9	-11.0	9.8	4.3
Belgium	-6.9	-6.1	-4.1	7.0	9.8
Denmark	-3.6	-5.8	-7.0	0.0	16.2
Finland	1.0	-3.3	-1.1	-7.0	10.0
France	-2.9	-1.9	-8.8	3.5	9.3
Germany	-1.4	-1.8	-7.1	1.0	9.9
Greece	-13.9	0.2	1.7	4.3	8.8
Ireland	-6.5	1.1	-10.4	3.4	12.9
Italy	-3.5	0.8	5.9	-1.3	-1.5
Luxembourg	4.2	-5.9	7.0	-11.4	6.6
Netherlands	-2.6	2.5	-3.7	-3.9	8.2
Portugal	-6.6	-12.0	7.6	7.3	8.0
Spain	-6.0	-5.4	-4.7	4.3	12.4
Sweden	-3.9	-6.0	-3.2	-1.2	14.8
United Kingdom	-11.3	0.2	-5.7	5.5	8.5
Cyprus	-13.8	16.9	-10.2	1.5	1.1
Czech Republic	-4.6	-7.7	-3.7	10.8	6.0
Estonia	-4.5	-8.6	5.2	7.9	-0.2
Hungary	-2.3	-10.3	-0.1	1.3	10.7
Latvia	-21.1	1.4	-4.4	0.4	5.4
Lithuania	-14.8	5.1	15.8	10.2	12.2
Slovak Republic	-6.6	4.6	-7.3	-0.6	10.2
Slovenia	-15.4	1.9	-11.6	8.9	19.4

Interestingly, in both France and the Netherlands, where there was a relative expansion of the lowest paid jobs – those in the bottom quintile – this was not the case in terms of skills, implying that the jobs which expanded were low paid but not the lowest skilled (which, from the analysis in the previous section, might suggest that they were jobs performed disproportionately by women). The reverse was the case in Finland and Luxembourg, where there was an increase in employment in the lowest skilled jobs but not the lowest paid ones.

Nevertheless, in comparison with the changes shown in respect of jobs ranked by relative wages, there is evidence of a more continuous upskilling of jobs in the new Member States and less of a difference from developments in these terms in the EU15 countries.

4.6 Changes in employment in terms of hours worked

The above analysis is based on measuring jobs simply in terms of numbers without taking account of whether they are full-time or part-time jobs or whether they provide work for one day a week or 5 days a week. The same analysis can be carried out allowing explicitly for such differences between jobs, to count jobs in terms of the average hours of work they provide instead of how many people they employ. This it is possible to do since the dataset which has been compiled for the study includes details of the average hours usually worked by those employed in the jobs identified[19]. The main limitation is that the data relate to weekly hours rather than annual hours so that it does not take account of variations in holidays or days off for other reasons. These, however, are likely to have a relatively minor effect on the results, particularly within countries, except possibly in respect of seasonal jobs, which vary in importance between countries.

The approach adopted is to estimate the total hours worked in each of the different jobs which have been distinguished (i.e. ISCO 2-digit occupations in NACE 2-digit sectors) and then to calculate the quintiles on this basis, in other words, in terms of total hours rather than the total number of people working in the jobs. (The same median hourly wages and average education levels are assigned to jobs as described above.)

Table 4.7 presents the results of calculating the composite index of job quality in terms of relative wages for hours worked rather than the number of jobs. This is directly comparable to Table 4.2 above. It also tells the same story. The movement in the composite index defined in terms of hours worked is very similar to that shown by the index based on the number of jobs in nearly all countries and the same conclusion can be drawn – namely that there has been a shift in employment towards higher paid jobs almost throughout the EU. The composite index for the countries covered taken together, moreover, shows much the same pattern of change between 2000 and 2005 as the jobs-based index (Figure 4.11 which should be compared with Figure 4.3 above).

The countries where there has not been a shift towards higher paid jobs are the same as indicated above – Italy, the Netherlands, Cyprus and Slovakia. Indeed, in the last

[19] The data include details of usual hours worked per week, divided into groups of hours – specifically, <20 hours, 20-34 hours, 35-38 hours, 39-41 hours, 42-47 hours, 48 hours and over. In each case, it is assumed for estimation purposes that the hours worked correspond to the upper limit of the category. Experiments with other assumptions indicate that the precise assumption used has a minor effect on the results. For some respondents, hours vary too much from week to week to allow them to give an answer on how many hours they usually work. For these and for those for whom the data are missing, it is assumed that they work 40 hours a week.

three, the apparent shift in employment towards lower paid jobs is slightly larger when measured in terms of hours worked, which suggests that the lower paid jobs on average have longer working hours than others (though in Slovakia, the change in the last two years of the period was upward). In Italy, however, the calculation based on hours worked reduces the scale of the shift towards lower paid jobs, which suggests that the jobs in question have shorter working hours. A similar tendency is evident in Austria, where the hours-based index shows a small rise between 2000 instead of no change, suggesting a move towards higher paid jobs with longer hours.

Table 4.7

Composite index of job quality based on wage ranking and hours worked, 2000=1

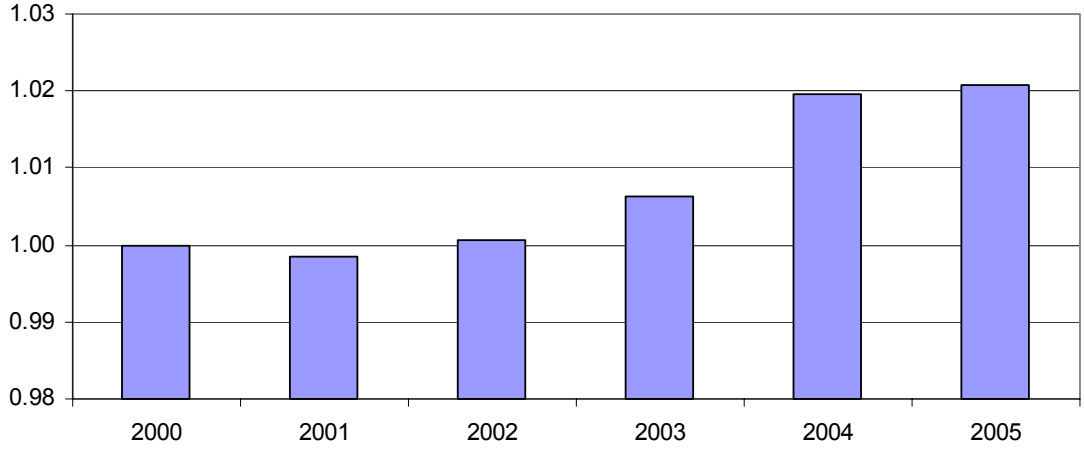
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria	0.978	0.994	0.998	1.003	0.999	1.000	1.010	1.010	1.003	1.006	1.007
Belgium	0.997	0.999	0.998	1.009	1.016	1.000	1.014	1.004	1.008	1.026	1.031
Denmark	0.968	0.980	0.973	0.972	0.991	1.000	1.007	1.018	1.022	1.019	1.025
Finland			0.978	0.976	0.997	1.000	1.004	1.012	1.018	1.034	1.035
France	0.998	0.994	0.996	0.998	0.999	1.000	1.004	1.009	1.027	1.028	1.034
Germany	0.981	0.993	0.998	1.000	0.998	1.000	1.005	1.008	1.017	1.022	1.022
Greece	0.979	0.988	0.990	1.002	0.998	1.000	1.004	1.004	1.001	1.001	0.995
Ireland	0.960	0.981	0.982	0.989	0.994	1.000	1.011	1.022	1.031	1.047	1.034
Italy	0.959	0.963	0.971	0.978	0.988	1.000	0.997	1.002	1.002	1.002	0.999
Luxembourg	0.945	0.975	0.979	0.997	1.012	1.000	0.985	1.006	1.009	1.022	1.030
Netherlands		0.994	0.999	1.002	1.005	1.000	1.003	1.008	1.011	1.000	0.994
Portugal	0.999	0.995	0.988	0.983	0.994	1.000	1.003	1.011	1.022	1.036	1.041
Spain	0.989	1.008	1.013	1.008	1.002	1.000	1.006	1.005	1.004	1.011	1.007
Sweden			0.982	0.984	0.998	1.000	1.008	1.014	1.025	1.031	1.038
United Kingdom	0.982	0.987	0.988	0.989	0.997	1.000	1.003	1.006	1.009	1.009	1.015
Cyprus					0.991	1.000	1.002	0.999	0.999	0.991	0.994
Czech Republic				0.988	0.992	1.000	1.006	1.000	1.003	1.016	1.027
Estonia			0.984	0.962	0.971	1.000	0.972	0.969	0.960	0.979	0.999
Hungary			0.996	0.996	0.997	1.000	0.999	1.000	1.013	1.024	1.019
Lithuania				1.008	1.008	1.000	1.004	0.985	0.980	1.006	1.019
Latvia				0.988	1.006	1.000	1.003	1.025	1.016	1.025	1.037
Slovenia				0.978	0.996	1.000	1.001	0.997	1.020	1.027	1.029
Slovak Republic				0.991	0.997	1.000	0.996	0.979	0.978	0.981	0.991

The main difference between the changes shown by the two indices is for Greece, where instead of a small shift towards higher paid jobs, the index based on hours worked shows a shift in the opposite direction, which suggests that the higher paid jobs in question have shorter working hours than lower paid ones. To the extent that movement is away from jobs in agriculture with long working hours, this might well be the case. It raises a question, however, about the interpretation of the hours worked data, since if the lower paid jobs tend to have long hours of work, which itself might be considered as signifying their low quality, to effectively give them a larger weight when estimating changes in job quality is likely to give

misleading results (see the next section for an analysis of changes in jobs involving long working hours). Moreover, the estimation of hours worked in agriculture is itself more problematic than for other jobs since there are often no set hours of work as such.

Figure 4.11

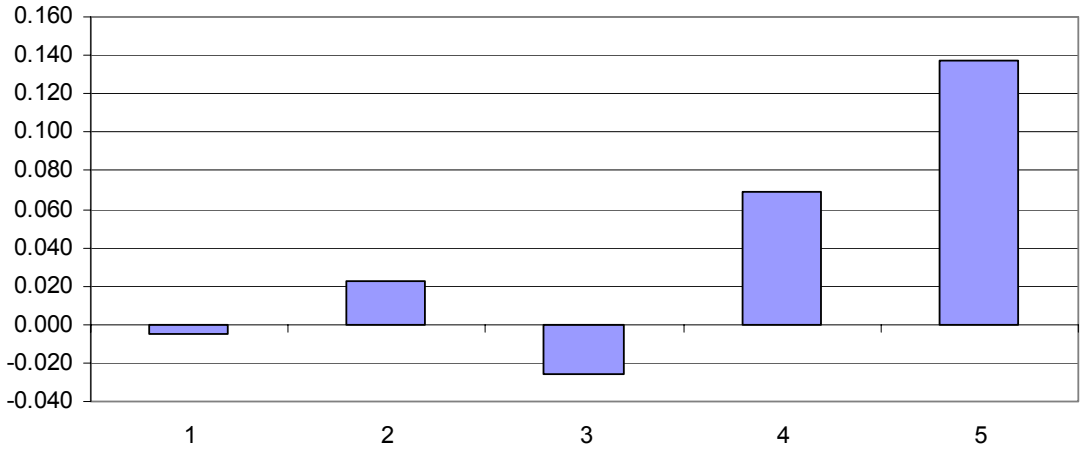
Composite measure biased on hours worked including all countries (2000=1), 2000-2005



The shifts between quintiles in employment measured by hours worked also show a similar pattern of change as that based on job numbers. Taking all the countries covered together, therefore, the increase in employment – or in total working hours – over the period 2000-2005 was very much concentrated in jobs in the upper part of the wage distribution, especially in the top quintile, just as in the case of the number of jobs (Figure 4.12). Hours worked in the latter, therefore, rose by 14%, slightly more than the rise in the number of jobs, while in the next to top quintile, they increased by around 7%, slightly less than the increase in job numbers. In the lower three quintiles, hours worked either rose slightly or declined.

Figure 4.12

Percentage change in employment based on hours worked in all the countries covered, 2000-2005



The results are very similar to those described above if the analysis is conducted in terms of jobs ranked by skill, or education, levels rather than relative wages.

Although there are arguments in favour of using hours worked instead of simply numbers when assessing changes in employment, in this context, it is problematic, for the reasons indicated above in respect of Greece. Although there is case for not treating a job which involves only short working hours in the same way as one which is full-time, it is not clear if hours worked themselves are not used as the unit of measure where the dividing line, or lines, should be drawn between jobs with differing hours of work – whether, for example, full-time jobs should be defined as those of 35 hours a week or more, or 30 hours a week or more, and whether a job with working time of 25 hours a week should be assigned a larger weight than one of 20 hours.

The analysis here has avoided these kinds of issue by taking total hours of work as such rather than attempting to assign weights to jobs with differing working hours. The results suggest that in nearly all countries it makes relatively little difference whether numbers of jobs are counted or the numbers of hours worked in them. Accordingly, given the issues raised by including hours of work in the system of measurement itself, the results also provide support for the simple approach of not taking hours of work into account when measuring changes. Hours of work can in any case be analysed separately, to help interpret the shifts in employment which are observed. This is done in the next section, which also considers other features of these shifts.

5 The composition of jobs of different quality

The concern here is to examine the composition of the wage and skill quintiles in terms of the characteristics of those employed in the jobs included in them – i.e. at the different points of the wage and skill distribution – and how this has changed over the period covered. Like the preceding analysis of changes in job quality, this too is based on detailed data extracted from the EU Labour Force Survey.

The focus is, first, on the occupations and sectors which make up the top and bottom of the wage and skill distribution, or, in other words, on the types of job which are the highest and lowest paid and which have the highest and lowest needs in terms of the education levels of the people performing them. This extends the analysis in Section 3 above by examining the changes in the jobs concerned which occurred over the ten years 1995-2005.

Secondly, the focus is on other features of the jobs with the highest and lowest wages and educational requirements, though also of those included across the distribution in these terms. These features include the division of jobs between men and women – again extending the analysis in Section 3 above – between older workers and others, between

part-time and full-time, between those with fixed–term contracts of employment and those with standard ones and between those performed by people with non-EU nationality and those performed by EU nationals.

In addition, there is also an analysis of the shifts in employment in terms of hours worked rather than the number of people, which essentially adjusts the number of jobs by the hours of work they provide, which comes to similar conclusions as regards the nature of the changes which occurred over the period covered. Moreover, the relative importance of jobs involving long hours of work – 48 hours a week or more – in the different quintiles and the way that this changed over the period is examined as well.

5.1 The sectoral composition of jobs in the top and bottom quintiles

Wage-based quintiles

EU15 – 2005

Two broad sectors dominate in terms of the jobs which are included in the bottom quintile of the wage distribution – i.e. the lowest paid 20% of jobs – across the EU15 as a whole (Figure 5.1). These are basic services, which cover the distributive trades, hotels and restaurants and transport – predominantly the first two sectors in this case – and manufacturing which between them accounted for over 60% of employment in the lowest paid jobs (34% and 27%, respectively) in 2005, markedly more than their share of employment as a whole (43%). Public administration, education, health care and other personal and communal services accounted for 20% though this is only two-thirds of their share of total employment, while agriculture made up 10% – more than half its share of total employment – and business and financial services accounted for around 9%, again around two-thirds of their share of the total in work.

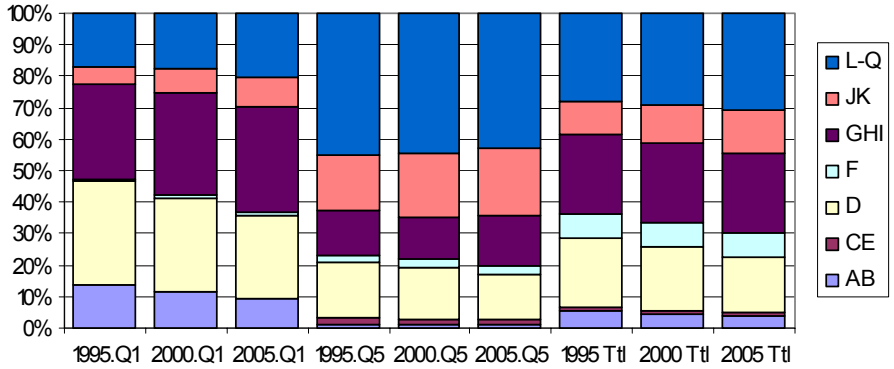
The breakdown of the bottom quintile by sector of activity, moreover, varies significantly across countries, in part reflecting differences in the overall structure of economic activity. In Portugal, for example, manufacturing accounted for almost 70% of jobs in the bottom quintile in 2005, reflecting the weight of traditional industries, especially textiles and clothing in which wages are low. Similarly, in the Netherlands and the UK, basic services, especially distribution and to a lesser extent hotels and restaurants, made up over 60% of jobs in the bottom quintile and in Ireland, for just under 60%.

In the top quintile – i.e. that containing the most highly paid jobs – public administration, education, health care and other services accounted for around 43% of jobs across the EU15 in 2005 while business and financial services accounted for another 22%. Basic services and manufacturing accounted for a further 30% between them, with slightly more

in the former than the latter. Other sectors accounted for very few jobs at the top end of the scale.

Figure 5.1

Breakdown of jobs in the bottom and top wage-based quintiles by sector in EU15, 1995, 2000 and 2005



Key: AB = agriculture; CE = mining+public utilities; D = manufacturing, F = construction; GHI = distribution, hotels+ restaurants, transport; JK = financial+business services; L-Q = public administration, education, health, other services.

In general, there is less of a difference across countries in the composition of jobs in the top quintile of the wage distribution than in the bottom quintile. In all countries, public administration, education, health and other services accounted for half or more of jobs and in most over 60%.

EU15 – 1995-2005

Over the ten years 1995-2005, there was a significant reduction in the share of low wage jobs in the bottom quintile accounted for by agriculture and manufacturing in the EU15 – by over 10 percentage points in the two sectors taken together (by 4 percentage points in agriculture and by 6 percentage points in manufacturing). In both cases, however, this was less than the decline in their combined share of total employment (under 6 percentage points), indicating that the reduction of jobs in these sectors was concentrated among the lowest paid. The counterpart of this was an increase in the proportion of jobs in all three broad service sectors and by similar amounts in each case.

The share of business and financial services of the highest paid job – i.e. those in the top quintile – also increased and by much the same amount (by just under 4 percentage points). The share of employment in the top wage quintile accounted for by basic services also increased, but by less than half as much. On the other hand, the share of public administration, education and so on declined (by 2 percentage points), indicating that the job growth in this broad sector which occurred over the period was concentrated in the middle and at the bottom end of the wage hierarchy. The share of manufacturing in the top

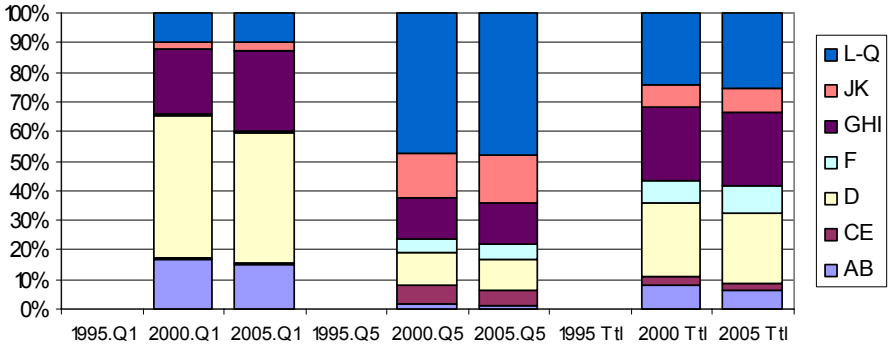
quintile also declined, though by slightly less than the reduction in its share of total employment, confirming the relative concentration of job losses among the lower paid.

New Member States – 2005

The composition of jobs in the bottom quintile of the wage hierarchy in the new Member States is markedly different than in the EU15. Manufacturing accounted for almost 45% of jobs at the bottom end of the scale in 2005, partly reflecting its greater weight in total employment (24%), while basic services accounted for 27%, less than in the EU15 even though its share of total employment was very similar (Figure 5.2). Agriculture made up 15%, again over twice its share of the total employed, while public administration and other services made up 10% much less than the figure in the EU15 and well under half their share of total employment (26%). Business and financial services accounted for only just over 3% of employment in this quintile, only slightly more than a third of their share in total employment.

Figure 5.2

Breakdown of jobs in the bottom and top wage-based quintiles by sector in the new Member States, 2000 and 2005



Key: See Figure 5.1.

There is less of a difference between the new Member States and the EU15 countries in the composition of the top wage quintile, though there were slightly more jobs in public administration and other services in the former and less in business and financial services, reflecting the small weight of the latter in overall employment. In addition, perhaps surprisingly, the share of manufacturing was smaller than in the EU15 (only 11% as compared with 15%), despite its larger share of total employment, while mining and public utilities accounted for a larger share (5% – twice their share of total employment).

New Member States, 200-2005

The main change in the composition of jobs in the bottom wage quintile in the new Member States in the five years 2000-2005 was a decline in the share of manufacturing and a counterpart increase in the share of basic services (by around 4 percentage points in both

cases). The share of agriculture also declined (by just under 2 percentage points), while there was a small rise in the share of business and financial services and no change in the share of public administration, education and so on.

In the top quintile, the main change in composition was a reduction in the share of mining and public utilities (down by 2 percentage points), compensated by an increase in the share of business and financial services and a smaller rise in the share of public administration and so on.

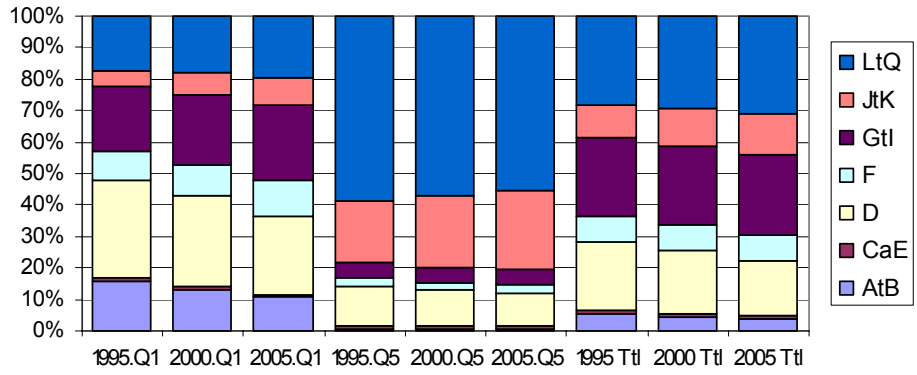
Skill-based quintiles

EU15 – 2005

The composition of jobs in both the bottom and top quintiles defined in terms of the education levels required differs from that of jobs in the wage-based quintiles. In the EU15, manufacturing made up a slightly smaller share of jobs in the bottom quintile than in he case of the bottom wage-based quintile while, most strikingly, basic services made up a considerably smaller share – indeed, slightly smaller than their share of total employment (24% as against 25% – Figure 5.3). This is line with the findings above which indicated that education levels in basic services were significantly higher than would be expected given relative wage levels.

Figure 5.3

Breakdown of jobs in the bottom and top skill-based quintiles by sector in the EU15, 1995, 2000 and 2005



Key: See Figure 5.1 above.

The smaller share of basic service jobs in the bottom skill-based quintile is mirrored by a much larger share of jobs in construction, which made up a negligible share of the wage-based bottom quintile but which accounted for 11% of the bottom quintile of jobs ranked by education levels in 2005. In addition, agriculture also accounted for a slightly larger share of low-skilled jobs than low-wage jobs – also 11%, three times its share of total employment.

The top quintile of jobs in terms of education levels is made up even more by public administration, education, health and other services than in the case of the top wage-based quintile, these accounting for some 56% of jobs, while business and financial services accounted for another 25%, leaving relatively little for other sectors. Manufacturing made up over half of the remaining jobs (11% in total) and basic services, just 5%.

EU15 – 1995-2005

Over the ten years 1995-2005, there was a slightly bigger decline of agriculture and manufacturing in the share of jobs in the bottom skill-based quintile than in the wage-based one (by almost 11 percentage points) and equally a slightly smaller increase in the share of business and financial services.

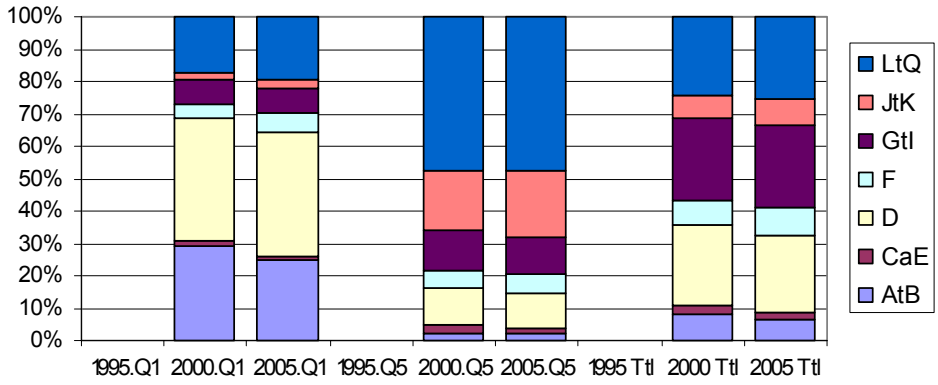
By contrast, the share of business and financial jobs in the top skill-based quintile in the EU15 increased markedly (by almost 5 percentage points) – by more than in respect of their share of the top wage quintile, while the share of jobs in public administration, education, and so on, declined (by around 3 percentage points – slightly more than in the case of their share of the top wage quintile). The share of manufacturing also declined but in this case less than in respect of its share of the top wage quintile.

New Member States – 2005

In the new Member States, the difference in the composition of jobs between the skill-based and wage based bottom quintiles is even more striking. Basic services account for only 7% of low-skill jobs – or more accurately of those performed by workers with low education levels – as compared with 27% of jobs in the bottom wage-based quintile (Figure 5.4). Agriculture, on the other hand, accounts for 25% while construction accounts for 6%, much more than in the case of low-paid jobs but still less than in the EU15.

Figure 5.4

Breakdown of jobs in the bottom and top skill-based quintiles by sector in the new Member States, 2000 and 2005



Key: See Figure 5.1 above.

The division of jobs between sectors in the top skill-based quintile is more similar to that in the EU15, though with a smaller share in public administration, education and so on as well as in business and financial services (68% in total – 12 percentage points less than in the EU15), but a slightly larger share in construction (6%) and a much larger share in basic services (12%). Accordingly, the education attainment level of the work force in both of these sectors, especially the latter, is significantly higher in the new Member States than in the rest of the EU and much more similar to their share of the top wage-based quintile.

New Member States – 2000-2005

The main change in the composition of jobs in the bottom skill-based quintile in the new Member States over the five years 2000-2005 was a sharp reduction in the share of agriculture (by over 4 percentage points) coupled with an increase in the share of all other sectors except mining and public utilities, most especially in public administration, education and so on (by almost 2 percentage points).

In the top skill-based quintile, the share of jobs in business and financial services increased (by around 2 percentage points) as did the share of jobs in construction, though only slightly, while the share of jobs in other sectors either remained much the same or declined (most especially in mining and public utilities).

5.2 The occupational division of jobs in the top and bottom quintiles

EU15

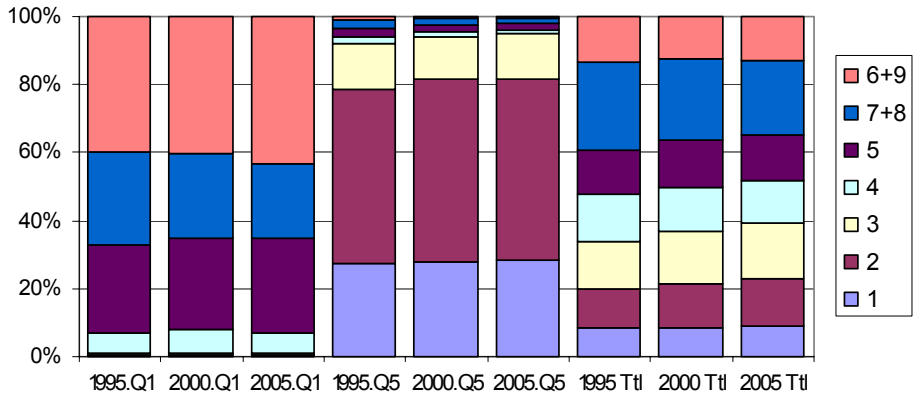
Elementary jobs together with agricultural jobs account for a substantial share of jobs in the bottom quintile, defined in terms of relative wages. In 2005, these two occupational groups made up some 44% of all the jobs in the quintile across the EU (Figure 5.5). Sales and service jobs made up a further 28%, while skilled and semi-skilled manual jobs accounted for another 22%.

While these three categories of job account for almost all of the jobs at the bottom end of the scale in terms of relative wage levels in all countries, there are, nevertheless, marked variations between them, largely reflecting the overall composition of jobs and, in particular, the relative importance of sales and services jobs relative to manual jobs, especially in manufacturing and agriculture. In a number of countries, therefore, sales and service jobs made up over 40% of the total in the bottom quintile.

Three categories of occupation make up almost all the top wage-based quintile of jobs. Professionals accounted for some 53% of all the jobs in this quintile in the EU15 in 2005, managers for 28% and technicians (and associate professionals) for 13%. The other broad categories made up just 5% between them.

Figure 5.5

Division of jobs in the bottom and top wage-based quintiles by occupation in the EU15, 1995, 2000 and 2005



Key: 1 = managers; 2 = professionals; 3 = technicians; 4 = clerks; 5 = sales+service; 6+9 = elementary+agriculture; 7+8 = skilled+semi-skilled manual.

While the division of jobs in the quintile was similar in most individual countries in 2005 to the aggregate division, with close to half or more of them being jobs for professionals, there are exceptions. In Austria, in particular, technicians made up more than half the jobs in the quintile, reflecting the relatively large number of such jobs in the economy as a whole (suggesting that many of the jobs classified for professionals in other countries are classified for technicians here), while in Portugal, the share of managerial jobs was much the same as for technicians. Most notably perhaps, in Greece, jobs for technicians made up under 30% of the total in the quintile, while elementary and agricultural jobs – especially the latter – accounted for some 20% and 15% of the total, respectively, far more than in any other country.

EU15 – 1995-2005

Over the period 1995-2005, the main change in the composition of jobs in the bottom wage-based quintile in the EU15 was a decline in skilled and semi-skilled manual jobs (by over 5 percentage points) and an increase in both elementary jobs (by 3 percentage points) and sales and service jobs (by 2 percentage points), reflecting the change in the occupational structure of overall employment.

In the top wage-based quintile, the share of both managers and professionals increased between 1995 and 2005 (by 3 percentage points if taken together), while the share of jobs other than for managers, professionals and technicians declined.

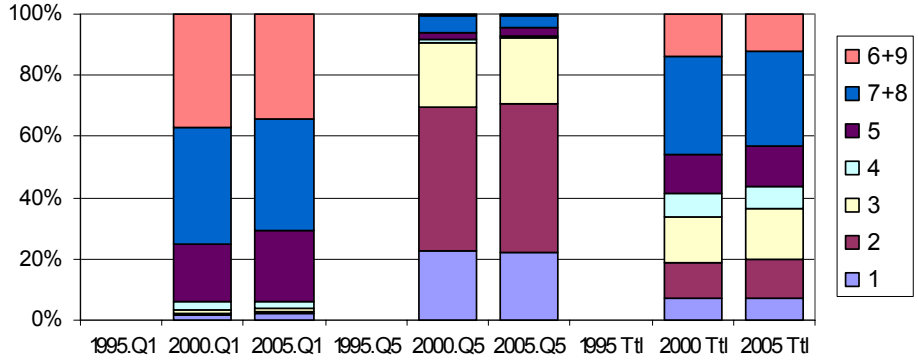
New Member States – 2005

In the new Member States taken together, the composition of the bottom wage-based quintile is similar to that in the EU15, in that most of the jobs are manual ones. Skilled and

semi-skilled manual jobs, however, accounted for a significantly larger share of the total (36%) in 2005 than in the EU15, while elementary and agricultural jobs and sales and services jobs, especially the former accounted for a smaller share (23% and 34%, respectively) (Fig. 5.6).

Figure 5.6

Division of jobs in the bottom and top wage-based quintiles by occupation in the new Member States, 2000 and 2005



Key: See Figure 5.5.

In the top quintile, the composition of jobs in the new Member States was also similar to that in the EU15 except that technicians accounted for a larger share (21%) and managers and professionals each for a slightly smaller share (22% and 48%, respectively). Other occupational groups also made up a slightly larger share of the quintile (8%), especially skilled and semi-skilled manual workers (just over 4% as against under 2% in the EU15).

New Member States – 2000-2005

As in the EU15, there has also been a decline in the share of skilled and semi-skilled manual jobs in the new Member States in recent years – by almost 2 percentage points between 2000 and 2005, but there has also been an even larger reduction in elementary and agricultural jobs (by almost 3 percentage points) – predominantly the latter. The only increase has been in sales and service jobs, which expanded markedly over the five years (by over 4 percentage points).

In the top quintile, jobs for professionals and technicians both increased, while those for managers remained unchanged and jobs for skilled and semi-skilled workers declined, reflecting the contraction of the mining industry.

Occupational groups in the top and bottom skilled-based quintiles

The composition of jobs in the top and bottom quintiles defined in terms of education levels instead of wages is similar to that described above, except that jobs for technicians account for a significantly larger share of those in the top quintile and jobs for sales and

service workers, a much smaller share of those in the bottom quintile. Again this is in line with the above findings that both technicians and sales and service workers tend to have a higher level of education than would be expected given their relative wages. As indicated there, this can be attributed, in the case of technicians, at least in part to the fact that many of them will become professionals as they progress in their careers and, in the case of sales and service workers, to the fact that a large proportion of them are women.

5.3 Changes in job quality by gender

The division of jobs between men and women was examined in Section 3 above, where it was observed that in most countries women tend to be disproportionately in lower paid jobs. The main concern here is with changes in the quality of jobs occupied by men and those occupied by women over the period 1995-2005 and with the division of employment of men and women in jobs at various points over the wage distribution.

Changes in the employment of men and women in the different quintiles can be summarized by using the same composite measure as in Section 4 above. In this case, however, because the distribution of men and women between the relative wage quintiles identified is not even in the base year (2000) – or at least is not necessarily even – the index calculated by weighting the proportion of men or women in each quintile by the quintile number deviates from 3 in this year. Indeed, the extent to which it is over or under 3 indicates the relative concentration of men or women in higher or lower paid jobs.

In practice, in the large majority of Member States, the proportion of women in lower paid jobs is greater than that of men in 2000 (i.e. the index calculated for women is below 3 and conversely for men above 3) (Table 5.1). The only exceptions are Belgium, Italy, Hungary and Slovenia. For most countries, the index for both and women tends to increase over the ten-year period, implying a shift for both towards higher paid jobs. There are, however, exceptions. In particular, in Italy and the Netherlands, the index for men, as for men and women taken together, shows a slight decline over the second half of the period, from 2000 to 2005, as it does in Slovakia. Moreover, unlike for the total employed, this is also the case for the UK.

The change in the index for women, however, is somewhat different. In all four of the countries in which the index fell in the case of men between 2000 and 2005, it rose in the case of women, suggesting a shift towards jobs with higher wages and quality. On the other hand, unlike for men, the employment of women seems to have shifted towards lower paid jobs over the period in Austria, while in Cyprus, the shift towards lower paid jobs evident for all those in employment appears to have been concentrated among women. These are the only two countries in the EU in which there is evidence of a decline in job quality for women.

Table 5.1

Composite measure of job quality by gender

	Men										
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Austria	1.040	1.043	1.048	1.052	1.056	1.053	1.059	1.065	1.070	1.070	1.058
Belgium	0.995	1.001	0.997	1.005	1.020	0.994	1.014	1.002	1.005	1.022	1.032
Denmark	1.009	1.011	0.988	0.993	1.026	1.029	1.037	1.042	1.039	1.032	1.041
Finland			0.986	0.994	1.014	1.012	1.011	1.023	1.030	1.040	1.034
France	1.055	1.053	1.054	1.052	1.055	1.052	1.057	1.058	1.072	1.068	1.071
Germany	1.041	1.053	1.056	1.057	1.054	1.055	1.059	1.062	1.068	1.072	1.068
Greece	1.015	1.024	1.030	1.036	1.033	1.032	1.037	1.040	1.042	1.044	1.040
Ireland	1.012	1.031	1.038	1.035	1.038	1.046	1.058	1.065	1.078	1.091	1.079
Italy	0.945	0.946	0.954	0.960	0.969	0.985	0.976	0.980	0.978	0.970	0.969
Luxembourg	0.959	0.978	0.982	1.003	1.017	1.003	0.991	1.017	1.024	1.040	1.044
Netherlands			1.068	1.067	1.065	1.061	1.063	1.067	1.066	1.051	1.042
Portugal	1.071	1.066	1.048	1.040	1.052	1.063	1.060	1.067	1.081	1.090	1.101
Spain	1.043	1.059	1.066	1.062	1.060	1.061	1.066	1.068	1.069	1.075	1.073
Sweden			0.982	0.984	0.989	0.996	1.005	1.009	1.012	1.017	1.029
United Kingdom	1.054	1.057	1.055	1.056	1.066	1.066	1.064	1.064	1.065	1.060	1.061
Cyprus					1.115	1.116	1.122	1.120	1.133	1.135	1.138
Czech Republic				1.075	1.074	1.077	1.082	1.084	1.080	1.093	1.097
Estonia			1.022	0.999	1.019	1.033	1.005	0.991	0.991	1.013	1.016
Hungary			0.989	0.991	0.991	0.990	0.990	0.994	1.005	1.010	1.004
Lithuania				1.009	1.009	0.982	0.968	0.961	0.974	0.986	1.007
Latvia				1.007	1.015	1.016	1.015	1.037	1.012	1.038	1.053
Slovenia				0.981	0.995	0.996	0.998	0.986	0.996	1.003	1.000
Slovak Republic				1.075	1.079	1.080	1.070	1.054	1.055	1.051	1.068

	Women										
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Austria	0.921	0.916	0.928	0.940	0.932	0.946	0.963	0.961	0.949	0.943	0.943
Belgium	1.030	1.031	1.034	1.042	1.042	1.038	1.040	1.042	1.037	1.050	1.055
Denmark	0.913	0.931	0.946	0.936	0.945	0.956	0.973	0.983	0.994	0.984	0.989
Finland			0.912	0.899	0.918	0.927	0.938	0.939	0.947	0.963	0.974
France	0.963	0.957	0.961	0.965	0.964	0.968	0.972	0.979	0.994	0.999	1.008
Germany	0.966	0.970	0.973	0.972	0.971	0.972	0.973	0.977	0.987	0.993	0.986
Greece	0.847	0.852	0.857	0.884	0.886	0.894	0.898	0.903	0.902	0.902	0.902
Ireland	0.924	0.947	0.932	0.939	0.945	0.950	0.966	0.986	0.990	1.010	0.999
Italy	0.963	0.969	0.979	0.987	1.002	1.006	1.009	1.017	1.019	1.016	1.011
Luxembourg	0.910	0.964	0.966	0.987	0.997	0.985	0.964	0.975	0.987	0.993	1.006
Netherlands			0.931	0.937	0.950	0.931	0.937	0.945	0.953	0.952	0.950
Portugal	0.960	0.960	0.960	0.959	0.970	0.971	0.980	0.991	0.997	1.022	1.023
Spain	0.977	1.003	1.008	1.005	0.994	0.997	1.007	1.005	0.999	1.007	1.008
Sweden			0.996	0.998	1.016	1.013	1.026	1.037	1.043	1.047	1.058
United Kingdom	0.901	0.907	0.910	0.910	0.921	0.926	0.936	0.944	0.948	0.960	0.971
Cyprus					0.873	0.895	0.899	0.897	0.889	0.864	0.864
Czech Republic				0.954	0.965	0.977	0.990	0.975	0.984	0.997	1.018
Estonia			0.952	0.926	0.927	0.966	0.937	0.951	0.937	0.946	0.984
Hungary			1.026	1.023	1.025	1.035	1.030	1.027	1.042	1.062	1.058
Lithuania				0.985	0.977	0.985	0.996	0.969	0.951	0.990	0.998
Latvia				0.945	0.961	0.960	0.959	0.980	0.984	0.976	0.984
Slovenia				1.002	1.021	1.026	1.030	1.033	1.078	1.083	1.085
Slovak Republic				0.926	0.947	0.946	0.950	0.940	0.941	0.948	0.951

Changes in the distribution of men and women between jobs of different quality

A related question of interest which these results give rise to is the extent to which women – or men – are concentrated in the lower or upper part of the distribution of jobs, ranked by relative wages in the different countries, and how far this changed over the period.

As indicated above, in most countries, as might be expected, women tend to be employed more than men in relatively low paid jobs (i.e. those in the lower quintiles of the distribution) than in the higher paid ones. Although this is implicit in Table 5.1 above, in order to show this more clearly and, equally importantly, to trace the movement over time, a summary index has been calculated which combines the shares of women in each quintile. This is similar to the summary index calculated above to measure changes in job quality over time, in that it weights the share of women in each quintile by the number of the quintile (i.e. so that a lower value is attached to shares in the lower quintiles) and divides the resulting weighted average by the average share of women in total employment (see Box 5.1).

Box 5.1

More formally, first, the share of women in each quintile is calculated, i.e. $s_{f,i} = {e_{f,i}}/{e_f}$, where $e_{f,i}$ denotes the number of women in quintile i , i = 1,…5, and e_f denotes the overall number of women employed. These shares are then weighted by the number of the respective quintile and summed up over quintiles, thus $\frac{1}{15}\sum_{i=1,\ldots,5} i\, s_{f,i}$ where the shares are weighted to sum up to one. In a final step, the ratio with respect to the share of women in total employment is calculated, i.e.

$$\frac{\frac{1}{15}\sum_{i=1,\ldots,5} i\, s_{f,i}}{e_f / e}.$$

If the index so calculated is less than one it implies that women are disproportionately in lower paid jobs and the reverse if the index is more than one.

As implied by Table 5.2 and noted above, the summary index for women calculated in this way is less than 1 in 2000, the base year, in most Member States, the only exceptions in this case being Belgium, Italy, Sweden (where it is equal to one), Hungary, Lithuania and Slovenia (for more details, of the distribution of women across quintiles, see Appendix Table C.1).

In most countries too, however, the index increased over the period, implying that the proportion of women employed in higher paid jobs increased over the period. The only exceptions over the years for which data are available are Belgium, Germany and Cyprus, where the index fell and Austria, where it remained much the same. At the same time, in Germany, the fall came to an end around 2002 and since then, the index has risen. On the other hand, in Luxembourg and Greece, the index declined over the latter part of the period

from 2000 to 2005. In general, therefore, there was more of a movement among women than among men towards higher paid, higher quality jobs, on this measure, over the period.

Table 5.2

Composite relative measure of job quality for women, 1995-2005

	Women										
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Austria	0.922	0.913	0.918	0.926	0.919	0.926	0.932	0.931	0.923	0.921	0.923
Belgium	1.010	1.006	1.011	1.013	0.998	1.014	1.001	1.008	1.009	1.000	0.995
Denmark	0.926	0.944	0.964	0.952	0.952	0.955	0.960	0.959	0.970	0.979	0.975
Finland			0.955	0.939	0.942	0.949	0.956	0.949	0.950	0.957	0.965
France	0.954	0.952	0.954	0.956	0.954	0.958	0.958	0.961	0.959	0.958	0.959
Germany	0.969	0.967	0.966	0.965	0.964	0.961	0.960	0.959	0.962	0.965	0.962
Greece	0.894	0.895	0.896	0.916	0.916	0.926	0.925	0.927	0.926	0.920	0.921
Ireland	0.936	0.943	0.931	0.942	0.947	0.949	0.956	0.960	0.959	0.961	0.965
Italy	1.033	1.036	1.035	1.033	1.037	1.022	1.033	1.035	1.039	1.041	1.040
Luxembourg	0.972	1.001	0.998	1.000	0.995	0.999	0.995	0.985	0.985	0.979	0.985
Netherlands		0.927	0.928	0.930	0.942	0.927	0.933	0.937	0.938	0.943	0.947
Portugal	0.919	0.924	0.935	0.926	0.931	0.930	0.931	0.938	0.930	0.940	0.937
Spain	0.940	0.945	0.946	0.945	0.943	0.948	0.954	0.953	0.951	0.953	0.955
Sweden			0.996	0.993	1.000	1.000	1.005	1.009	1.018	1.018	1.016
United Kingdom	0.913	0.916	0.918	0.917	0.921	0.925	0.932	0.938	0.939	0.948	0.953
Cyprus					0.862	0.870	0.870	0.870	0.860	0.845	0.846
Czech Republic				0.935	0.939	0.943	0.948	0.939	0.943	0.948	0.956
Estonia			0.969	0.958	0.949	0.966	0.968	0.983	0.980	0.965	0.978
Hungary			1.017	1.014	1.017	1.023	1.023	1.018	1.020	1.023	1.026
Lithuania				0.988	0.986	1.002	1.014	1.010	0.991	1.010	1.005
Latvia				0.954	0.962	0.964	0.967	0.966	0.990	0.973	0.972
Slovenia		1.017	1.019	1.019	1.016	1.017	1.016	1.026	1.037	1.035	1.024
Slovak Republic				0.941	0.947	0.942	0.950	0.952	0.949	0.956	0.949

This can be seen more clearly in Figure 5.7 which shows the index relative to 1 (i.e. the difference of the index from 1 in Table 5.2)) for the EU15, the New Member States and the EU countries covered as a whole over the ten years 1995-2005. It is evident in both the EU15 countries taken together and the new Member States that the gap between men and women in their distribution across quintiles narrowed over period 2000-2005 having remained much the same in the former over the preceding five years.

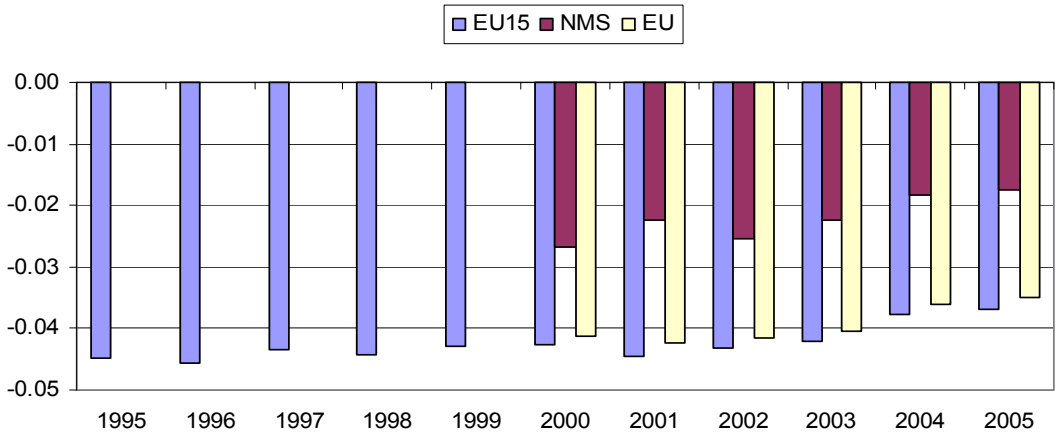
It remains to examine where over the wage distribution, i.e. in the lower or upper quintiles, the employment of women increased over this period. It is evident that women tend to be disproportionately employed in the bottom quintile of jobs in terms of their relative wages in most countries in the EU, the only exceptions being are Belgium, Sweden and Slovenia, though in Italy and Lithuania, their share is much the same as their overall share in employment. The extent of overrepresentation is particularly large in Cyprus and Estonia (close to 20 percentage points higher than their overall share), though also in France, Ireland, Spain and the UK (close to 15 percentage points or higher) (see Appendix Table

C1). It is also evident that there was some tendency for their overrepresentation to decline between 1995 and 2005.

Figure 5.7

Composite relative measure of job quality for women by groups of countries, 1995, 2000 and 2005

Index relative to 1 (1=women evenly distribution across wage quintiles)



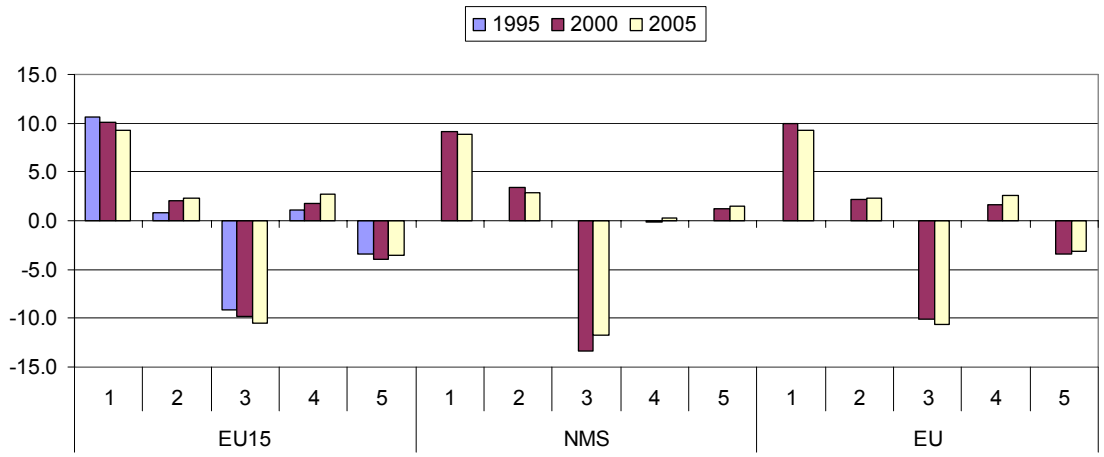
At the same time, women in most countries are underrepresented in the top quintile and here there is less evidence that their share increased over this period. This is indicated by grouping the EU15 countries and the new Member States together (Figure 5.8, which also includes all the EU countries taken together). In general, over the period 1995-2005, therefore, the overrepresentation of women in the bottom quintile diminished over the period. However, there appears to have been little change in their under-representation in the top quintile.

In both the EU15 and the New Member States, therefore, women remain overrepresented in the bottom quintile by just under 10 percentage points. While this diminished slightly in the former between 1995 and 2005 (as well as over the two sub-periods), it declined only marginally in the new Member States taken together. However, in the EU15, this was accompanied by an increase in the overrepresentation of women in the next to bottom quintile – i.e. there seems to have a shift of women from the bottom quintile to the next one up – while in the new Member States, there was also a decline in this quintile.

At the same time, there was also an increase in the share of women in the next to top quintile in the EU15 and a decline in their under-representation in the top quintile, at least over the period 2000-2005, though this only compensated for an increase in their under-representation in the preceding five years. In the new Member States, there was only an increase in the share of women in the two top quintiles over the later period, but extremely small in both cases.

Figure 5.8

Over/under-representation of women by quintile for country groups



5.4 Job quality and age

In general, earnings tend to increase with age, reflecting not only experience and, therefore, higher productivity but also wage setting arrangements in many countries, where age and length of time in the jobs are important determinants of pay scales. This relationship, however, as wage surveys – such as the Structure of Earnings Survey used here to determine the allocation of jobs between relative wage quintiles – demonstrate is not a continuous one and goes into reverse in many countries at a particular age as other characteristics become more important (such as a difficulty to keep up with new technology or to learn new ways of doing things more generally). The age at which this happens and the extent of the decline in earnings after the critical point is reached, however, varies between countries.

At the same time, any tendency for wages to decline after a particular age is reached tends to be offset to some extent by the fact that those in lower skilled, and lower paid jobs, tend to withdraw from the work force earlier than those in higher paid ones. On the other hand, in some countries, where the economy has been restructuring relatively rapidly, it is the older workers who tend to be in the declining, and lower skill activities.

The variation in the influence of these different factors is reflected in marked differences in the value of the summary index of the distribution of older people – here taken as those of 55 and older – across the wage-based ranking of jobs. In most Member States, those over 55 and older are disproportionately employed in the upper quintile of jobs, ranked by relative wages, but in 8 countries – Austria (marginally), Sweden, the UK, Greece, Portugal and the three Baltic States – they are employed more in the lower quintiles (see Table 5.3 and Figure 5.9). This is particularly the case in Greece and Portugal, where the large proportion in this age group employed in jobs in the bottom quintiles reflects the equally large number of those concerned employed in agriculture.

Table 5.3

Composite relative measure of workers aged 55 and over

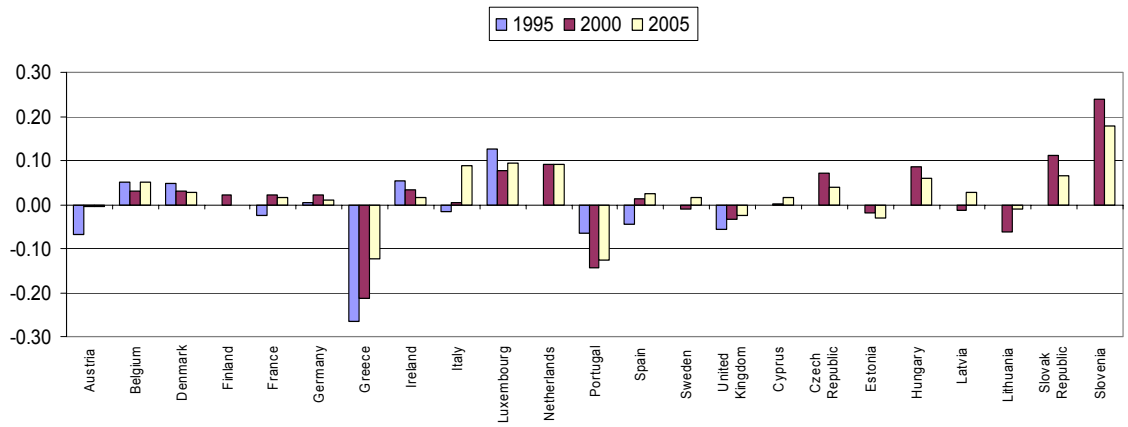
	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria	0.930	0.950	0.955	0.981	0.992	0.997	0.985	0.999	0.981	0.980	0.994
Belgium	1.051	1.045	1.060	1.046	1.035	1.030	1.044	1.053	1.036	1.024	1.052
Denmark	1.048	1.003	1.025	1.043	1.021	1.031	1.020	1.016	1.017	1.036	1.028
Finland			0.991	1.023	1.022	1.023	1.015	1.001	1.014	1.013	1.000
France	0.976	0.992	0.997	1.015	1.015	1.022	1.017	1.024	1.009	1.023	1.016
Germany	1.005	1.007	1.008	1.013	1.020	1.022	1.026	1.020	1.023	1.025	1.009
Greece	0.735	0.748	0.755	0.765	0.781	0.786	0.806	0.840	0.850	0.858	0.878
Ireland	1.052	1.045	1.044	1.041	1.042	1.034	1.031	1.018	1.022	1.019	1.017
Italy	0.985	0.996	0.994	1.006	1.018	1.004	1.019	1.040	1.042	1.062	1.087
Luxembourg	1.125	1.088	1.078	1.128	1.092	1.077	1.199	1.150	1.099	1.088	1.095
Netherlands		1.095	1.111	1.102	1.105	1.091	1.087	1.085	1.075	1.082	1.091
Portugal	0.934	0.912	0.892	0.847	0.868	0.858	0.848	0.857	0.853	0.872	0.874
Spain	0.955	0.959	0.971	0.979	0.991	1.013	1.016	1.013	1.023	1.025	1.024
Sweden			0.971	0.983	0.988	0.991	1.001	1.000	1.006	1.007	1.017
United Kingdom	0.944	0.954	0.956	0.949	0.965	0.966	0.956	0.953	0.963	0.966	0.975
Cyprus					1.009	1.001	1.003	0.991	0.992	0.987	1.015
Czech Republic				1.033	1.046	1.072	1.059	1.059	1.055	1.035	1.039
Estonia			1.023	0.981	0.990	0.980	0.972	0.980	0.958	1.020	0.970
Hungary			1.069	1.099	1.093	1.085	1.058	1.092	1.073	1.049	1.058
Lithuania				0.995	1.017	0.937	0.964	0.975	0.977	0.983	0.990
Latvia				0.959	0.961	0.987	0.990	0.999	1.010	1.023	1.027
Slovenia		1.240	1.187	1.211	1.217	1.238	1.247	1.211	1.197	1.170	1.177
Slovak Republic				1.099	1.086	1.113	1.133	1.118	1.097	1.101	1.065

Between 1995 and 2005, there was either little change or an increase in the index in most EU15 Member States, signifying a relative shift of older workers into higher paid jobs over the period. This is illustrated in Figure 5.10, which shows the change in the composite index for the EU15 countries taken together, for the new Member States and for the EU as a whole (or at least all the countries covered).

Figure 5.9

Composite relative measure of job quality for older workers

Index relative to 1 (1=older workers evenly divided between wage quintiles)

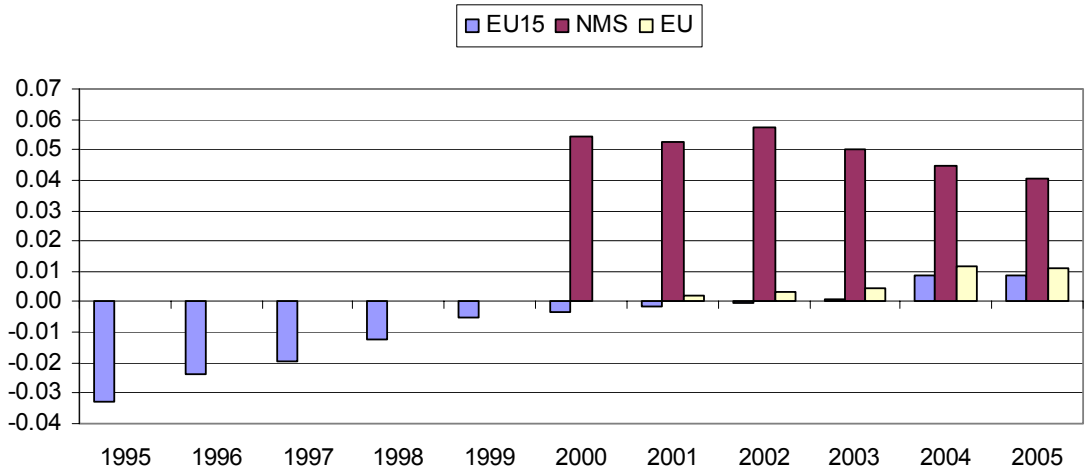


In the EU15 countries, therefore, there was an almost continuous upward shift in older workers aged 55 and over towards jobs with higher wages, so that by 2004, and even more by 2005, such workers were overrepresented in jobs in the upper part of the wage distribution, having been under-represented in the years before 2003 and, particularly before 1999. This upward shift in the employment of older workers, however, was not common to all Member States. In particular, in Germany, France and Finland, this was an opposite shift towards lower paid jobs over the period 2000-2005.

Figure 5.10

Composite relative measure of job quality for older workers by groups of countries, 1995-2005

Index relative to 1 (1=older workers evenly distributed across wage quintiles)



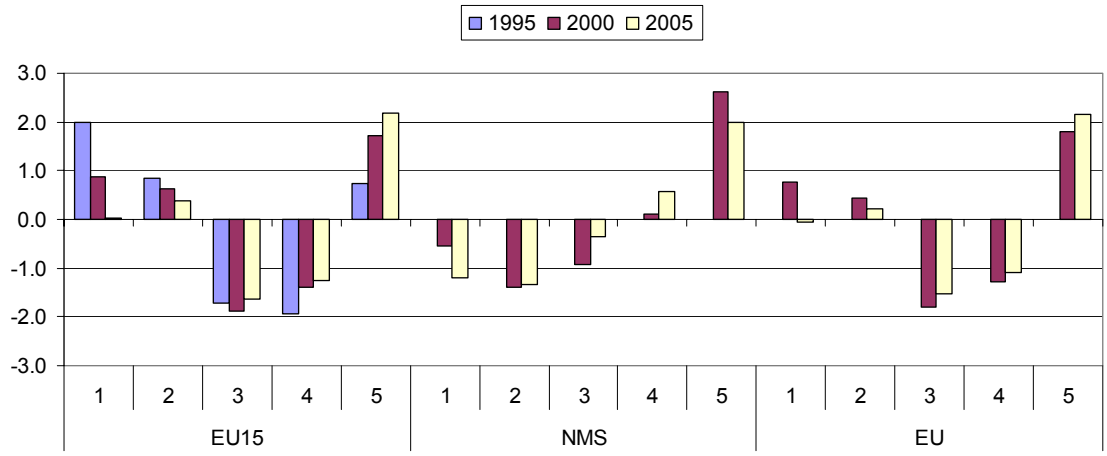
In the new Member States, however, the shift has also been in the opposite direction, particularly after 2002. There was, therefore, a reduction in the last three years of the period in the extent of overrepresentation of older workers in higher paid jobs, which had been significant, and some convergence towards the position in the EU15.

Among the new Member States, the only exceptions to this shift of older workers to lower paid jobs are Cyprus, Latvia and Lithuania. In the other countries, the downward shift might reflect the effects of restructuring and the increased premium on the employment of younger workers who are better able to adapt to the new conditions. (It should be noted that the Structure of Earnings Survey indicates that average wages of employees in most of the new Member States tend to decline with age after people enter their 40s.)

Examining the shift in employment of older workers in the EU15 and the new Member States more closely reveals that in the former, their overrepresentation in the bottom two quintiles diminished continuously over the ten years 1995 to 2005, while their under-representation in the next to top quintile also diminished and their overrepresentation in the top quintile increased (Figure 5.11).

Figure 5.11

Over/under-representation of old age workers by quintile by groups of country, 1995, 2000 and 2005



The pattern of change has been markedly different in the new Member States, where older workers are under-represented in the lower quintiles – i.e. in the lower paid jobs – and overrepresented in the higher paid ones. Here the downward shift in their employment has mainly been a consequence of a reduction in their degree of overrepresentation in the highest paid jobs in the top quintile of the wage distribution.

5.5 Job quality and part-time working

The same kind of exercise can be undertaken for the division of jobs between part-time and full-time ones. It would be expected that part-time jobs would tend to be concentrated in those ranked in the lower quintiles in terms of wages, and job quality, though it remains to examine the extent to which this is the case as well as to see how far this changed between 1995 and 2005.

The relative number of part-time jobs, here defined in terms of self-assessment (though similar results emerge if the analysis is conducted in terms of those working less than full-time hours as well – see below), ranges from around 45% of the total in the Netherlands and 25% in the UK to under 10% in all four southern countries and in all the new Member States, Indeed, it amounts to only around 5% or less in Greece, the Czech Republic, Hungary and Slovakia. At the same time, the change in the overall proportion of part-time jobs from 2000 to 2005 varied from an increase of 5-6 percentage points in the Netherlands and Luxembourg to a reduction in Portugal, the Czech Republic and Lithuania.

The summary index shows marked differences between countries in the distribution of part-time workers between quintiles. In particular, whereas in all countries, with the exception of Slovenia, the index was less than one in 2000, signifying a relative

concentration of part-time jobs among those in the lower quintiles in terms of relative wages, it was only slightly below in Belgium, Luxembourg and Sweden but considerably below in Ireland, the UK, Finland, Greece and Portugal as well as Slovakia (Table 5.4). In all of the last three countries, the number employed part-time is relatively small and most of the jobs concerned are in the lower quintiles, suggesting they are of relatively poor quality. In Ireland and the UK, however, part-time employment is relatively high, especially in the latter, but it is still the case that the jobs are concentrated at the lower end of the scale, in contrast to Belgium or Sweden, where the proportion of part-time jobs is similarly high.

Table 5.4

Composite relative measure of job quality by part-time

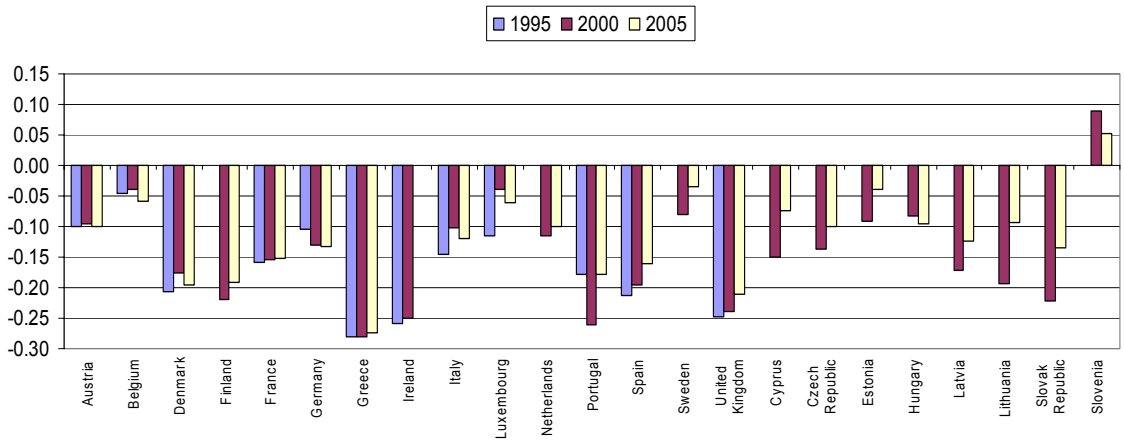
	Part-time workers										
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Austria	0.900	0.881	0.895	0.904	0.900	0.905	0.897	0.910	0.912	0.887	0.900
Belgium	0.955	0.955	0.951	0.952	0.955	0.960	0.931	0.936	0.939	0.920	0.941
Denmark	0.793	0.783	0.816	0.803	0.828	0.825	0.841	0.804	0.808	0.805	0.804
Finland			0.799	0.746	0.780	0.780	0.788	0.805	0.826	0.825	0.809
France	0.841	0.844	0.844	0.841	0.843	0.846	0.854	0.855	0.857	0.842	0.847
Germany	0.896	0.882	0.880	0.875	0.869	0.870	0.871	0.865	0.871	0.874	0.867
Greece	0.719	0.689	0.680	0.715	0.749	0.721	0.720	0.717	0.737	0.737	0.727
Ireland	0.741	0.753	0.729	0.753	0.745	0.751	0.770	0.783	0.785	0.800	
Italy	0.853	0.861	0.879	0.864	0.885	0.897	0.899	0.892	0.904	0.892	0.881
Luxembourg	0.884	0.883	0.943	0.964	0.937	0.961	0.923	0.885	0.919	0.916	0.938
Netherlands		0.890	0.882	0.883	0.897	0.884	0.886	0.896	0.893	0.901	0.901
Portugal	0.822	0.825	0.805	0.743	0.749	0.740	0.775	0.802	0.793	0.823	0.821
Spain	0.788	0.805	0.807	0.809	0.793	0.804	0.814	0.811	0.797	0.801	0.838
Sweden			0.923	0.929	0.920	0.920	0.928	0.942	0.942	0.938	0.964
United Kingdom	0.753	0.746	0.754	0.756	0.761	0.760	0.761	0.757	0.773	0.785	0.790
Cyprus					0.832	0.850	0.860	0.779	0.859	0.848	0.927
Czech Republic				0.829	0.865	0.864	0.852	0.871	0.865	0.896	0.901
Estonia			0.958	0.860	0.924	0.910	0.848	0.879	0.938	0.861	0.961
Hungary			0.946	0.974	0.940	0.917	0.925	0.913	0.929	0.931	0.903
Lithuania				0.809	0.807	0.806	0.932	0.899	0.846	0.861	0.906
Latvia				0.801	0.784	0.829	0.817	0.836	0.867	0.887	0.877
Slovenia		1.123	1.099	1.072	1.133	1.089	1.076	1.062	1.086	1.080	1.052
Slovak Republic				0.762	0.757	0.778	0.829	0.773	0.761	0.830	0.865

There has been a general tendency for the relative proportion of part-time jobs to shift away from the lower wage quintiles since 1995, including in the countries where they are concentrated in these quintiles. In only two EU15 countries, Belgium and Germany was there a shift of part-time jobs towards lower paid, lower quality ones, though in Austria and Portugal, there was little change in their distribution between quintiles. In addition, there was also a shift towards lower paid jobs in two of the new Member States, Hungary and Slovenia (see Figure 5.12).

Figure 5.12

Composite relative measure for part-time workers

Index relative to 1 (1=part-time workers evenly distributed across wage quintiles)

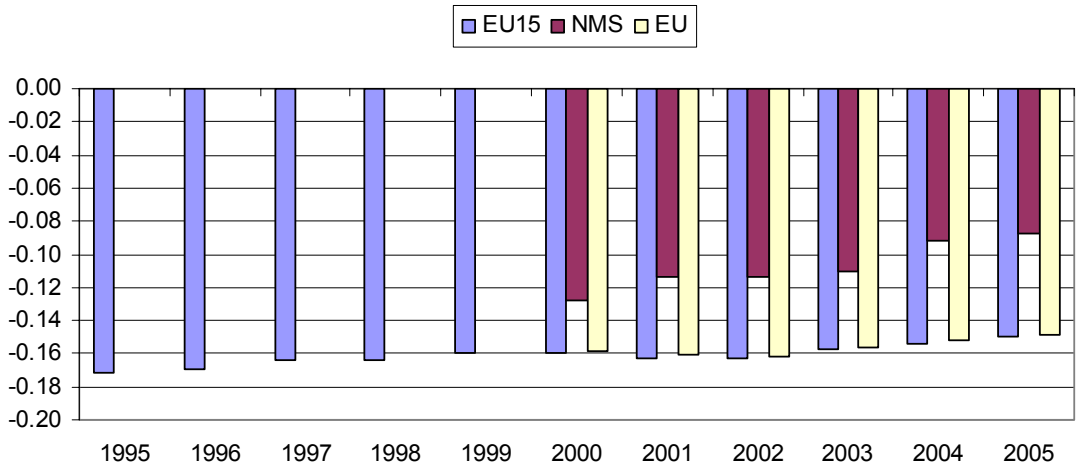


Over the more recent period from 2000 to 2005, however, there was a more widespread shift of part-time employment towards lower quality of jobs as defined here. As well as in the four countries where this shift occurred over the period as a whole, it also occurred in Austria, Denmark, Italy and Luxembourg (though in the last the index fluctuated from year to year, reflecting the small sample size). It is perhaps significant that, with the exception of Denmark, in all of the EU15 countries in which there was a shift of part-time jobs towards the lower paid ones in this period, the relative number of part-time jobs overall increased significantly (by 4 percentage points or more).

Figure 5.13

Composite relative measure of job quality for part-time workers in groups of countries, 1995, 2000 and 2005

Index relative to 1 (1=part-time workers evenly distributed across wage quintiles)



These divergent shifts in part-time jobs between quintiles have resulted in a relatively small overall shift in the EU15 countries taken together towards higher paid jobs wages – or

more accurately away from lower paid ones (Figure 5.13). The scale of the change, however, was relatively small over the period. In the Member States (taken together), on the other hand, there was a more marked shift away from lower paid jobs over the five years 2000-2005.

Figure 5.14

Over/under-representation of part-time workers by quintile for groups of countries, 1995, 2000 and 2005

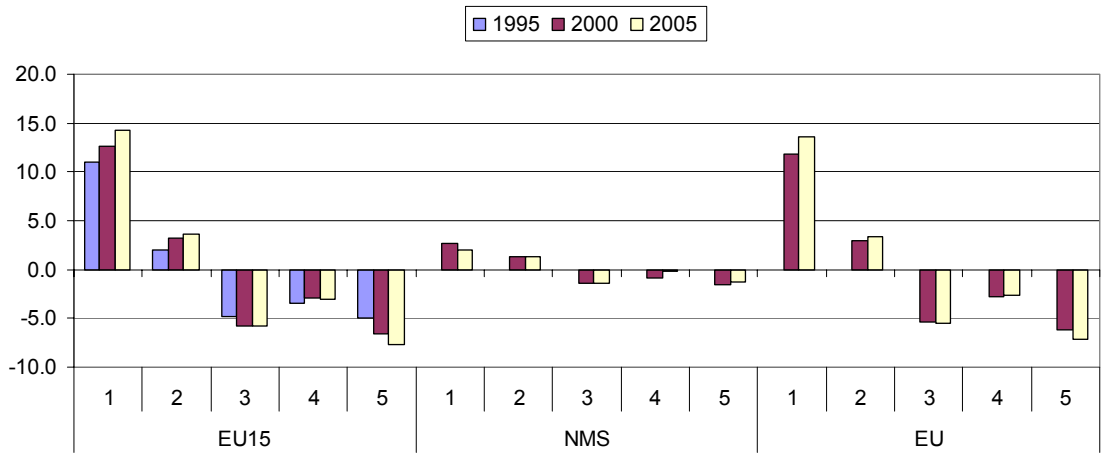
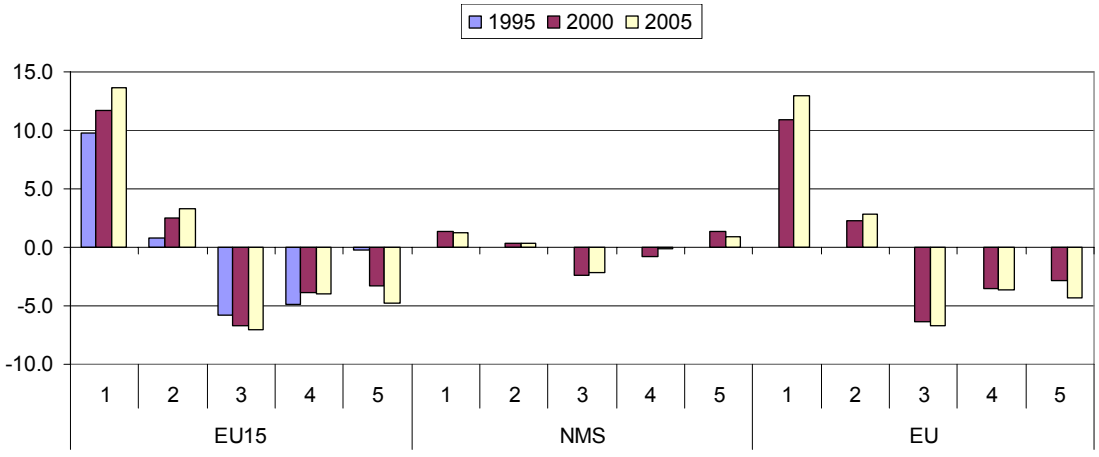


Figure 5.15

Over/under-representation of those working less than 35 hours per week by quintile for groups of countries, 1995, 2000 and 2005



A more detailed examination of the shifts in part-time jobs between wage quintiles reveals, however, little sign of any marked improvement of job quality for part-time workers in the EU15 countries over this period. While their overrepresentation in the bottom quintile increased between 1995 and 2005, their under-representation in the top quintile also increased, so any slight improvement in job quality for part-time workers in overall terms

came from shift in the middle quintiles (Figure 5.14). By contrast, the reverse occurred in the new Member States over the years 2000-2005.

These results are confirmed if part-time working is measured in terms of working less than full-time hours – i.e. less than 35 hours a week – instead of in terms of self-assessment. The shifts in the workers concerned between wage quintiles over the period 1995-2005 were virtually the same as described above (Figure 5.15).

5.6 Jobs involving long working hours

Just as part-time jobs might be regarded as inferior to full-time ones – though not necessarily by the people who are employed in them or by the employers who need them in order to organize their operations efficiently or in line with consumer demands – long hours of work might also be regarded as a factor which reduces job quality. The EU Working Time Directive was, therefore, conceived as a means of increasing social welfare and preventing people from being obliged to work long hours.

Jobs with long hours of work – in particular, those with usual hours of work of 48 or more a week – like part-time working, vary across the EU, their share of total jobs ranging from around 35% in Greece, much more than anywhere else in the Union, and 21-22% in the UK and Latvia to just 6% in the Netherlands and Sweden (see Appendix Table C.6).

In practice, long hours of work in most EU Member States are more common towards the upper end of the wage distribution than at the lower end (it should be recalled that wages here are measured in terms of the hourly median so should be unaffected by the hours worked as such). In 11 of the EU15 countries, therefore, the composite relative measure of jobs involving 48 hours a week or more is greater than one in 2000, indicating that such jobs were concentrated more in the upper parts of the wage distribution than in the lower parts. This is especially so in Belgium, Finland and Luxembourg (Table 5.5). The exceptions are Austria, Ireland, Sweden and the UK, where long working hours is more a feature of lower paid jobs.

In the new Member States, the situation is somewhat different. In 5 of the 8 countries covered, jobs with long hours are concentrated more in the lower part of the wage distribution. The three exceptions are the Czech Republic, Slovenia and Slovakia, which are arguably the three most industrialized economies.

In general, there seems to have been relatively little change in the value of the composite index between 1995 and 2005 in most EU15 countries at least, especially in the second part of the period. In the three countries in the EU15 which the composite index was highest in 2000 – Belgium, Finland and Luxembourg – it declined over the second part of

the period, suggesting a shift away from higher paid jobs, while in three of the four countries in which it was below one, it increased, It also increased in Italy, where the index was close to one in 2000 and by much more than elsewhere (raising a question-mark over the comparability of the data with earlier years). In general, therefore, in the EU15, there was some convergence in jobs with long hours towards the upper end of the wage distribution.

Table 5.5

Composite relative measure of job quality: jobs with long working hours

	Jobs of 48 hours or more										
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Austria	0.943	0.905	0.926	0.938	0.952	0.954	0.960	0.958	0.956	0.987	0.998
Belgium	1.136	1.125	1.126	1.121	1.139	1.185	1.200	1.150	1.184	1.127	1.114
Denmark	1.108	1.115	1.103	1.102	1.107	1.102	1.109	1.115	1.103	1.086	1.104
Finland	1.164	1.175	1.192	1.176	1.206	1.172	1.187	1.169	1.107	1.155	1.146
France			1.069	1.155	1.069	1.074	1.061	1.055	1.045	1.083	1.073
Germany	1.092	1.097	1.097	1.091	1.103	1.104	1.094	1.111	1.094	1.101	1.097
Greece	1.052	1.049	1.071	1.094	1.093	1.100	1.105	1.107	1.095	1.104	1.093
Ireland	0.859	0.865	0.878	0.882	0.895	0.898	0.903	0.907	0.897	0.926	0.939
Italy	1.018	1.037	0.975	0.937	1.024	1.010	1.052	1.052	0.961	1.047	1.178
Luxembourg		1.218	1.198	1.201	1.190	1.235	1.226	1.201	1.211	1.209	1.195
Netherlands			0.995	1.041	1.052	1.038	0.993	0.971	0.990	1.010	1.008
Portugal	1.127	1.137	1.133	1.133	1.142	1.141	1.133	1.128	1.126	1.126	1.124
Spain	0.983	0.989	1.008	1.014	1.026	1.029	1.027	1.029	1.044	1.045	1.020
Sweden	0.906	0.917	0.933	0.931	0.928	0.936	0.944	0.948	0.936	0.932	0.936
United Kingdom	0.952	0.940	0.954	0.974	0.950	0.946	0.945	0.953	0.961	0.947	0.961
Cyprus					0.907	0.928	0.894	0.959	0.935	0.940	0.975
Czech Republic				1.105	1.104	1.083	1.095	1.105	1.099	1.092	1.085
Estonia			0.943	0.975	0.930	0.985	0.966	0.934	0.945	1.001	0.921
Hungary			0.942	0.962	0.953	0.955	0.943	0.973	0.960	0.956	0.948
Lithuania				0.715	0.745	0.709	0.838	0.819	0.898	0.833	0.882
Latvia				0.806	0.851	0.821	0.827	0.908	0.907	0.895	0.933
Slovenia		1.134	1.097	1.066	1.116	1.102	1.093	1.108	1.098	1.097	1.100
Slovak Republic				1.062	1.050	1.067	1.028	0.974	1.033	1.023	1.019

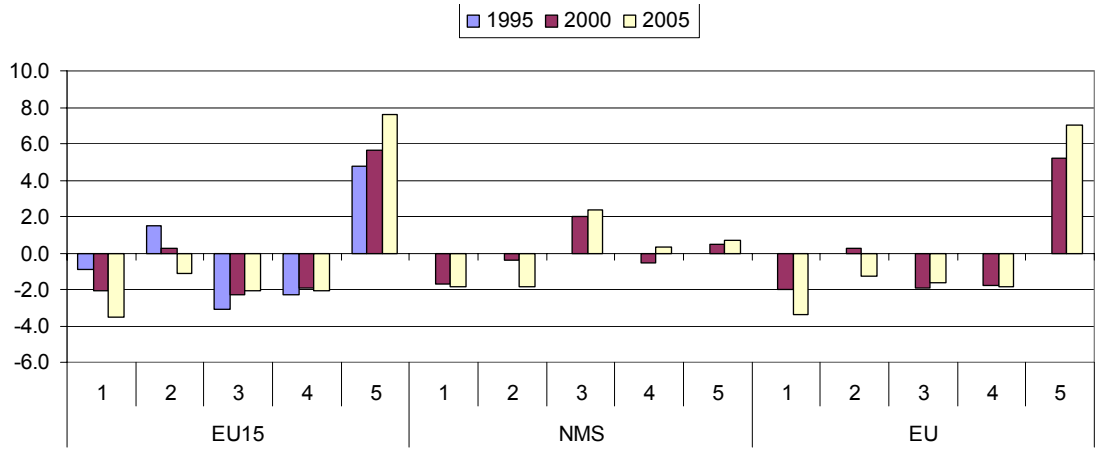
In the new Member States, the index also increased in the countries in which it was most below one in 2000 – Cyprus, Lithuania and Latvia – signifying a shift in those working long hours away from low paid jobs, while it declined in Slovakia, where it was above one, as well as in Estonia (though in the latter, the index tended to fluctuate significantly from year to year, suggesting possible problems with the data). There was, therefore, also some convergence in these countries, with only the Czech Republic and Slovenia having a relative concentration of jobs with long hours in the upper part of the wage distribution.

The composite index in this case, however, conceals some polarization of jobs with long hours of work, with in a number of countries these accounting for a relatively large share of employment in jobs at both the top of the wage distribution and in those at the bottom but

relatively small shares in those in the middle. This is the case in Austria, Germany, Finland, Italy and Portugal – in the last, jobs of 48 hours a week or more accounting for an average of some 26% of all jobs in the next to bottom quintile and for 18% in the top quintile for under 10% in the next to top quintile (Appendix Table C.6).

Figure 5.16

Over/under-representation of workers >48 by quintile and country groups



Any increase in jobs with long working hours over the period 1995-2005 seems to have been predominantly in the upper part of the wage distribution in the EU15, with, on average, jobs with long hours in the lower part of the distribution tending to decline in relative terms (Figure 5.16).

5.7 Job quality and fixed-term jobs

Like part-time working and jobs with long working hours, jobs with fixed-term contracts of employment also vary across the EU, from almost a third of the total in Spain, just under 20% in Portugal and around 16% in Sweden and Slovenia to only around 5% or less in Luxembourg, the UK and Ireland as well as Estonia and Slovakia. Moreover, the change in the relative number of such jobs varied equally markedly between countries between 2000 and 2005 from an increase of 3 percentage points or more in Cyprus, Lithuania and Slovenia to a reduction on a similar scale in Ireland and France.

The summary index of the distribution of fixed-term jobs between the wage quintiles shows a similarly mixed picture, though with no systematic relationship between the value of the index and the relative importance of jobs with this type of contract of employment in the economy.

The value of the index, calculated in the same way as above, is below one in all Member States without exception, indicating a relative concentration of fixed-term jobs towards the

lower end of the wage distribution (Table 5.6 and Figure 5.17). It is particularly low in Ireland, Estonia and Slovakia, where employment in jobs of this kind is also relatively low, suggesting that the relatively few jobs which have these non-standard contracts of employment tend predominantly to be low paid, low quality ones. The value of the index, however, is similarly low in the Netherlands and Greece, where the relative number of fixed-terms jobs is above average (12-13% of total employment) and where accordingly significantly more people work in jobs which are not only low paid but also temporary.

At the same time, the index is only slightly below one in Luxembourg and the UK, where the proportion of fixed-terms jobs is relatively small as well as Germany, where it is also below average, suggesting that in these countries, the fixed-term jobs are of a similar quality as those with standard contracts of employment. It is also only slightly below one in Sweden, Portugal and Slovenia, where the proportion employed in such jobs is relatively large.

Table 5.6

Composite relative measure of job quality by permanency of jobs

	Jobs with fixed-term contracts										
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Austria	0.918	0.920	0.862	0.891	0.902	0.885	0.898	0.869	0.912	0.955	0.909
Belgium	1.005	0.992	1.000	0.993	0.951	0.917	0.948	0.955	0.939	0.932	0.880
Denmark	0.908	0.950	0.888	0.886	0.889	0.899	0.943	0.924	0.893	0.921	0.943
Finland			0.968	0.924	0.910	0.887	0.919	0.925	0.929	0.913	0.922
France	0.906	0.911	0.905	0.906	0.911	0.909	0.915	0.915	0.904	0.914	0.897
Germany	0.979	0.984	0.977	0.965	0.965	0.965	0.964	0.966	0.968	0.971	0.966
Greece	0.786	0.777	0.782	0.795	0.826	0.835	0.831	0.838	0.814	0.829	0.829
Ireland	0.854	0.857	0.852	0.878	0.829	0.815	0.807	0.831	0.803	0.788	0.795
Italy	0.842	0.859	0.882	0.872	0.900	0.924	0.920	0.918	0.951	0.921	0.921
Luxembourg		0.998	1.049	0.974	0.960	0.930	0.985	0.925	1.074	1.053	1.015
Netherlands		0.848	0.826	0.822	0.804	0.836	0.832	0.838	0.838	0.834	0.827
Portugal	0.895	0.903	0.929	0.964	0.960	0.955	0.966	0.982	0.970	0.981	0.992
Spain	0.864	0.884	0.887	0.891	0.890	0.888	0.890	0.892	0.895	0.896	0.904
Sweden			0.940	0.944	0.936	0.940	0.949	0.935	0.928	0.919	0.931
United Kingdom	0.991	0.997	0.980	0.991	1.001	0.978	0.975	0.983	0.985	0.964	0.983
Cyprus					0.837	0.773	0.743	0.702	0.746	0.715	0.745
Czech Republic				0.897	0.883	0.894	0.884	0.910	0.884	0.877	0.880
Estonia			0.704	0.738	0.645	0.651	0.557	0.672	0.753	0.781	0.839
Hungary			0.901	0.900	0.873	0.877	0.871	0.880	0.876	0.872	0.892
Lithuania				0.680	0.653	0.753	0.721	0.618	0.626	0.638	0.574
Latvia				0.813	0.824	0.784	0.823	0.889	0.818	0.818	0.833
Slovenia		0.966	0.965	0.896	0.893	0.955	0.943	0.955	0.978	0.973	0.957
Slovak Republic				0.810	0.858	0.821	0.768	0.757	0.762	0.798	0.804

There was a slight tendency for the composite index to rise in EU15 countries over the period 1995-2005, though in most countries, it remained much the same. It increased, therefore, in Denmark, Greece, Portugal and Italy, though in the last the rise was

concentrated in the first half of the period. In Austria, Germany, Finland and the UK, on the other hand, the index rose in the second half of the period, compensating for a fall in the first half. Overall, therefore, there was some shift of fixed-term contracts towards higher paid jobs – or at least away from lower paid ones.

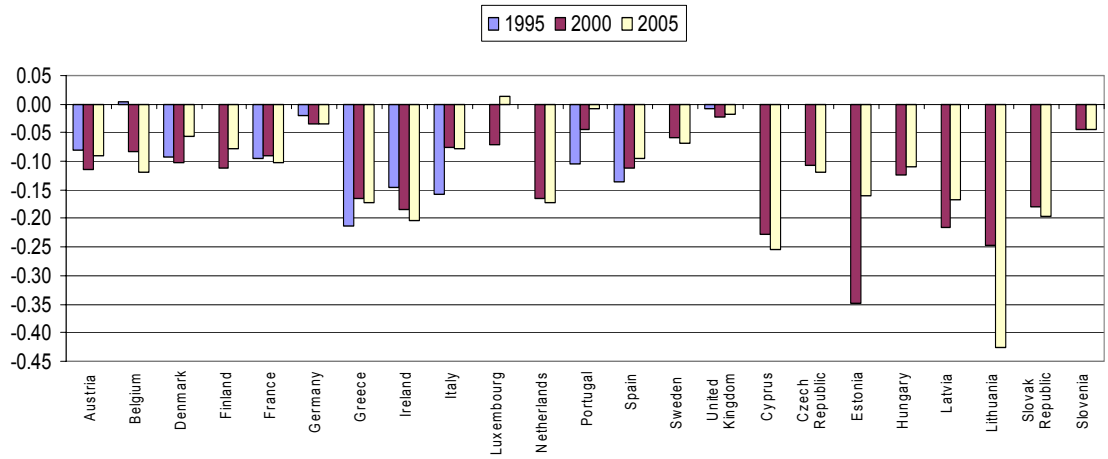
In Italy, the decline in the index after 2000 coincided with a growth in fixed-term employment, suggesting that the net additional fixed-term jobs that were created over this period tended to be low quality. In the UK and Portugal, the increase in the index coincided with a decline in employment in fixed-terms jobs, implying that the reduction in such jobs was relatively concentrated among the lower paid ones.

In 4 of the 8 new Member States covered, the summary index fell between 2000 and 2005, while in Slovenia it remained much the same. The increase in the index was confined, therefore, to three countries, Estonia, Latvia and Hungary. In the first two of these, the proportion employed in fixed-term jobs increased over the period and in Hungary it remained the same. In the four countries in which the index declined, the proportion employed in such jobs also increased, in Cyprus and Lithuania, substantially so, implying that the additional jobs tended to be relatively low paid, low quality ones, especially as the index was already among the lowest in the Union.

Figure 5.17

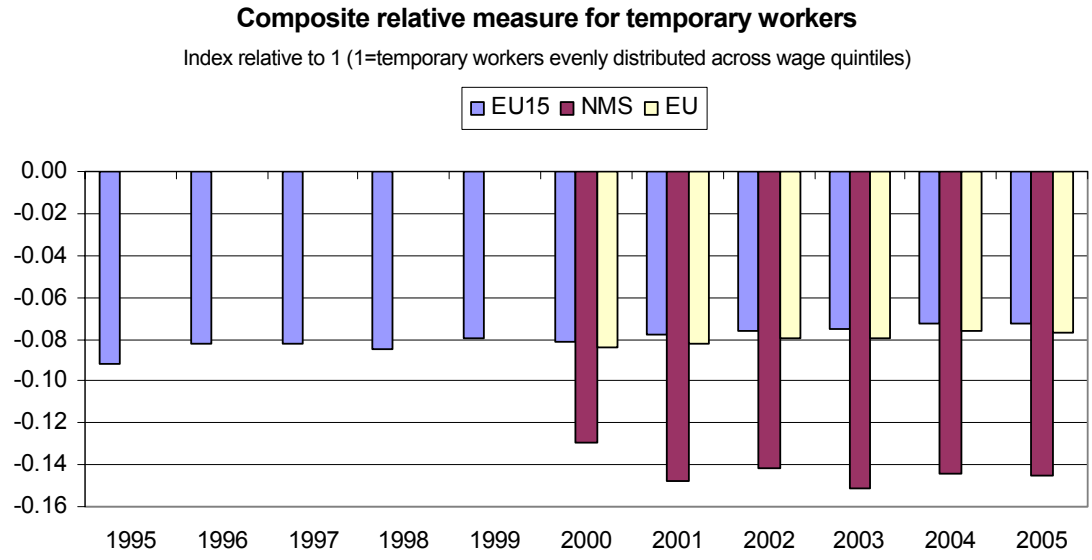
Composite relative measure for temporary workers

Index relative to 1 (1=temporary workers evenly distributed across wage quintiles)



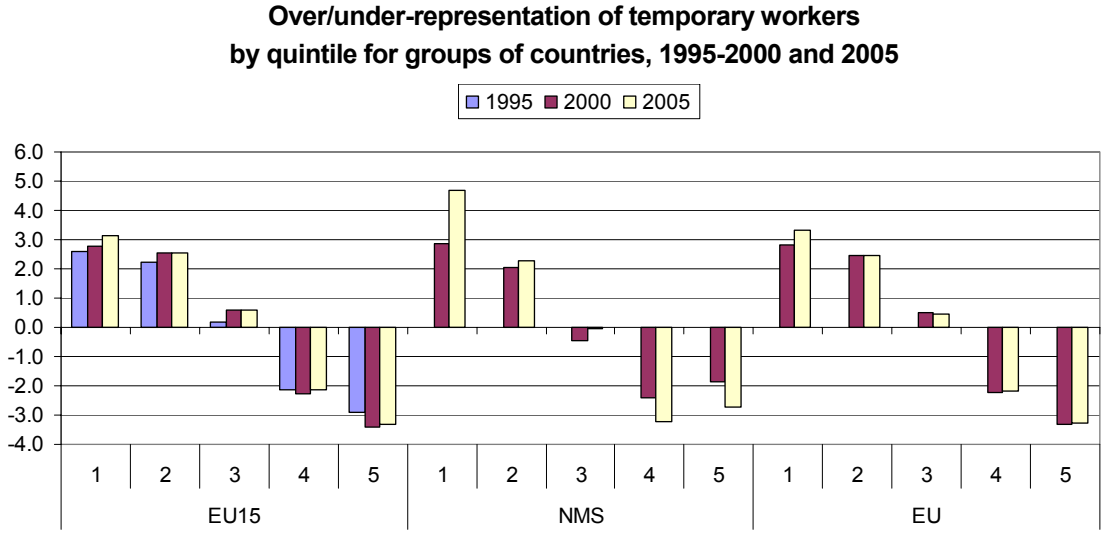
The shifts described above are summarized in Figure 5.18 for the EU15 and new Member States as well as for the EU as a whole, For the EU15, this shows a slight reduction between 1995 and 2005 in the extent to which the composite index falls below one – i.e. signifying some shift, if small, away from lower paid jobs. In the new Member States, there is no clear tendency for fixed-term jobs to move either up or down the wage distribution over the years 2001-2005 at least.

Figure 5.18



Despite the change shown by the composite index, fixed-term jobs remain highly concentrated in the EU15 and even more in the new Member States in the bottom two quintiles of the wage distribution (Figure 5.19). Moreover, there was a rise in the relative number of fixed-term jobs in the bottom quintile between 2000 and 2005 in both the EU15 and the new Member States, especially in the latter.

Figure 5.19



5.8 People with non-EU citizenship and job quality

People from outside the EU who do not have EU nationality, who in many cases tend to be migrants who have arrived within the past few years (since in most EU countries, but not all, it is possible for residents to acquire citizenship within a few years) tend to work in

much lower paid jobs than those who are nationals either of the country in question or of other EU Member States.

The summary index of the distribution of non-EU nationals between jobs in the different wage quintiles shows that in nearly all EU15 countries – it is not possible to calculate the index for the new Member States because the number of observation is too small, reflecting the very small number of migrants from outside the EU in these countries – the relatively high concentration in lower paid jobs is pronounced (Table 5.7). The relative concentration of non-EU nationals in lower level jobs is particularly marked in Austria, France, Luxembourg, Portugal, the Netherlands, Spain and the UK (see also Figure 5.20).

Over the period examined, moreover, there was a shift of the employment non-EU nationals towards lower level jobs in most countries. Between 2000 and 2005, the only Member States in which this did not occur were Belgium, where there was little change, Germany, the Netherlands, Sweden and Spain, where the shift was in the opposite direction, only marginally in Spain but on a significant scale in the Netherlands and even more so in Sweden. In both of the latter two countries, there was little change in the relative number of non-EU nationals in total employment, implying that those who were there moved on average to higher level jobs.

Table 5.7

Composite relative measure of job quality by citizenship

	Non-EU workers										
	1995	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
Austria	0.764	0.733	0.739	0.745	0.716	0.735	0.787	0.778	0.785	0.783	0.714
Belgium	0.832	0.864	0.826	0.852	0.847	0.827	0.861	0.827	0.809	0.859	0.826
Denmark	1.032	0.805	0.851	0.919	0.835	0.829	0.815	0.858	0.814	0.890	0.820
Finland			0.948	0.891	0.886	0.926	0.943	0.951	0.880	0.804	0.863
France	0.806	0.819	0.820	0.820	0.808	0.802	0.803	0.819	0.797	0.781	0.773
Germany	0.787	0.778	0.783	0.793	0.794	0.793	0.792	0.787	0.797	0.798	0.812
Greece					0.967	0.979	0.979	0.923	0.893	0.907	0.877
Ireland				1.103	1.093	1.082	0.903	0.860	0.853		
Italy	0.808	0.813	0.753	0.793	0.795	0.777	0.787	0.736	0.870	0.845	0.763
Luxembourg					0.794	0.727	0.740	0.781	0.776	0.721	0.775
Netherlands			0.845	0.840	0.799	0.748	0.835	0.904	0.885	0.870	0.850
Portugal					0.743	0.728	0.691	0.641	0.637	0.632	0.645
Spain	0.856	0.846	0.816	0.763	0.782	0.803	0.797	0.765	0.746	0.778	0.754
Sweden	0.994	1.026	0.979	0.973	0.987	0.985	1.020	0.990	0.998	0.980	0.982
United Kingdom	0.808	0.768	0.771	0.797	0.742	0.740	0.757	0.752	0.727	0.745	0.759
Cyprus				0.933	0.896	0.970	0.947	0.947	0.946	0.945	0.956

Note: Central and Eastern European countries are not included as observations are too few.

The shift towards lower paid, lower quality jobs was particularly large in Greece and Portugal, in both of which there was a significant increase in the relative number of non-EU nationals in employment over these five years (in Portugal from under 2% to over 3%, in

Greece, from around 3.5% to around 6.5%) suggesting that those taking up employment moved disproportionately into jobs of this kind.

The changes in the index which have occurred across the EU over the ten years 1995-2005 are summarized in Figure 5.21, which shows a marked shift of non-EU nationals towards lower paid jobs between 2001 and 2003 but relatively little change in the subsequent two years.

Figure 5.20

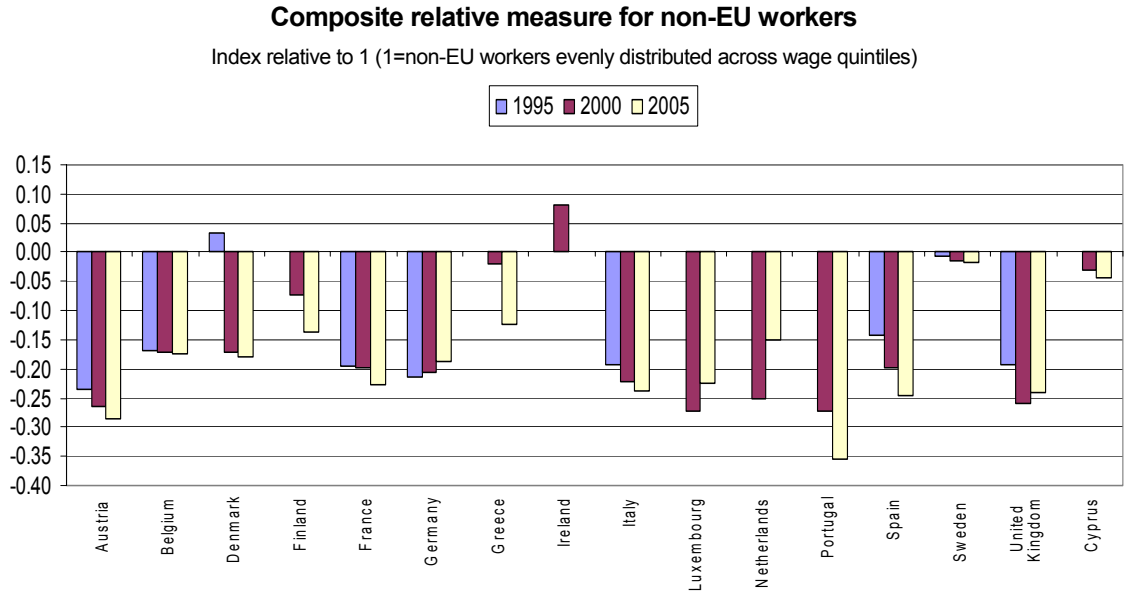
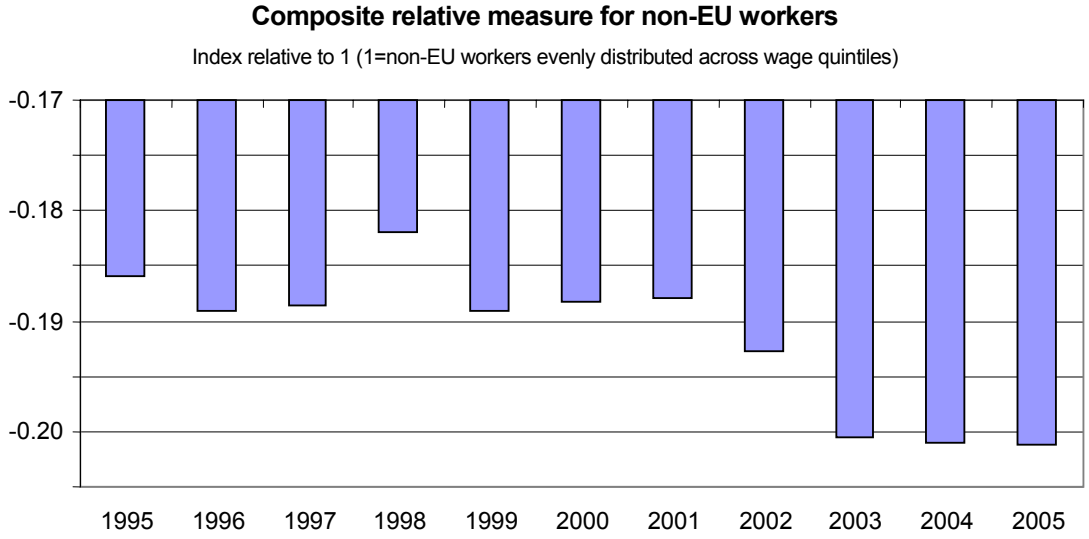


Figure 5.21

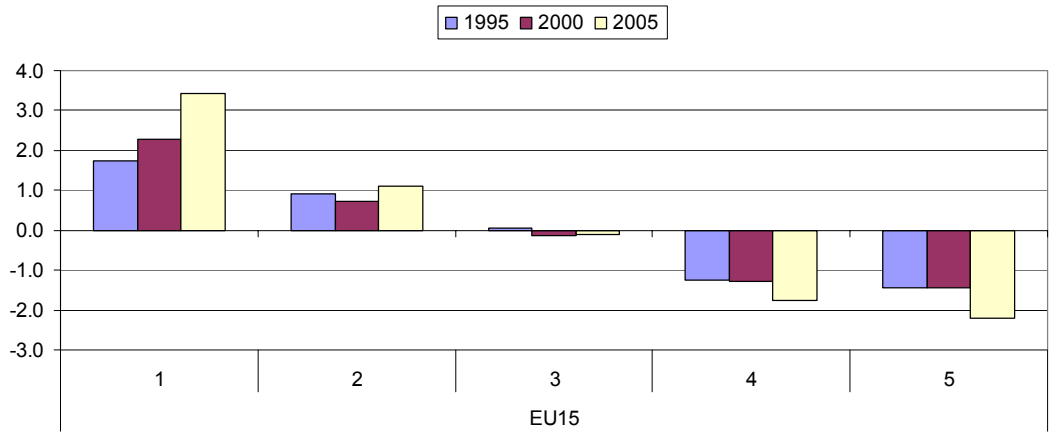


These shifts have occurred predominantly in the bottom quintile of jobs, where the over-representation of non-EU nationals has increased, and in the top two quintiles, where their under-representation has also increased (Figure 5.22).

Accordingly, non-EU nationals have become even more concentrated in low-paid jobs. In 2005, therefore, around 38-39% of non-EU nationals in work in France, Spain and the Netherlands were employed in the 20% of jobs with the lowest wages, 43-44% in Belgium and Luxembourg and 45% in Denmark. At the same time, only 10% of non-EU nationals in employment in Germany worked in the top 20% of jobs in terms of wages, 9% in Belgium, 8% in Denmark and just 6% in Austria. In Greece and Spain, however, the figure was even smaller at just 5%.

Figure 5.22

Over/under-representation of non-EU citizens by quintile in all EU countries taken together, 1995, 2000 and 2005



The findings are similar if country of birth is used to denote migrant workers instead of citizenship. The people born outside the EU tend to be larger in number than non-nationals since they also include those who have subsequently obtained EU citizenship. In consequence, they include people who might have arrived in the EU many years before, and more recently than many non-EU nationals, who accordingly tend to be more settled, with a better understanding of the language and so on. It is, therefore, perhaps to be expected that, on average, they would be employed in higher paid, better quality jobs.

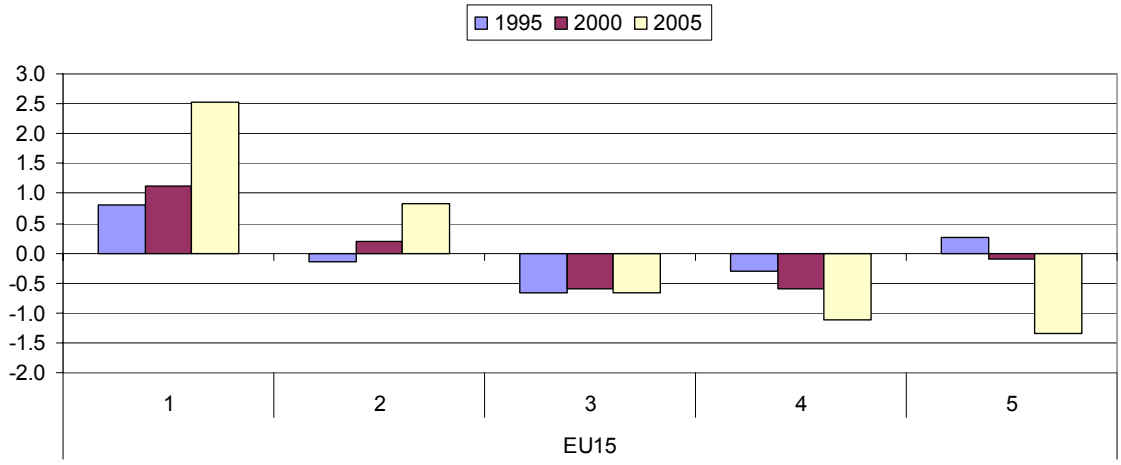
This is, indeed, the case. In all countries, those who were born outside the EU are less concentrated in the jobs in the lower part of the wage distribution. Nevertheless, they are still disproportionately employed in such jobs as compared with those born inside the EU in all countries apart from the UK and Portugal, where they are relatively evenly distributed across wage quintiles.

In the EU countries covered as a whole, therefore (there is in this case no data for Denmark or Italy), those born outside the EU are overrepresented in the bottom quintile and next to bottom quintile and under-represented everywhere else (Figure 5.23). Moreover, as in the case of non-EU nationals, there was a significant shift of these towards

lower paid jobs over the period 1995-2005 and especially in the second half of it. The extent of overrepresentation in the bottom and next to bottom quintiles, therefore, increased, while the under-representation in the top quintiles also increased.

Figure 5.23

Over/under-representation of those born outside the EU by quintile in all EU countries taken together, 1995, 2000 and 2005



Closer examination of the data shows that similar shifts occurred in nearly all countries, with only Sweden showing a shift in the opposite direction, especially over the second half of the period.

6 Concluding remarks

The above analysis demonstrates the viability of the general approach adopted in the study and illustrates the insights that can be derived from it. Although it is in no way suggested that the relative wages paid by different jobs or the education levels attained by those employed in them are the sole indicators of job quality, both are, nevertheless, major dimensions of this. They are also, as argued at the outset, likely to be correlated with other aspects of job quality, such as job satisfaction, which are more difficult to measure. The use of two indicators in parallel increases the likelihood of such a correlation, as well as providing additional insights into features of the labour market in different countries and of the way this is developing, as illustrated in the analysis.

Accordingly, they provide a means of overcoming, in part at least, the problems which have beset many attempts in the past to assess developments in job quality which are to do both with the intangible nature of many of the aspects which are relevant in principle and with a lack of suitable data relating to the more tangible ones. The approach adopted also largely avoids the tricky problem of how to interpret changes in the different aspects of job quality which go in opposite directions.

Even leaving aside the issue of how far they can be regarded as satisfactory indicators of job quality, both of the indicators are important for assessing changes in the structure of employment in their own right. Shifts between jobs with different relative wages, therefore, give an indication of the changes in the distribution of earnings associated with employment developments over a given period, as well as of likely changes in labour productivity, given the link between this and what employers ought to be prepared to pay for people doing a particular job. Equally shifts between jobs with different requirements in terms of education levels give an indication of the changing demand in broad terms on education and training systems.

At the same time, both are of major relevance for monitoring progress towards the Lisbon objectives – or at least the employment counterpart of these – the pursuit of which is a central element guiding EU policy in different areas. The shift between jobs with different relative wages is, therefore, a guide to how far economic activity is shifting towards – or away from – more productive areas and how far labour productivity is likely to increase, or decline, as a result. Similarly, the shift in employment towards jobs with higher education, and skill, requirements is an indicator of the development of the knowledge-based – or knowledge-intensive – economy and of the extent to which EU economies are exploiting their comparative advantage of a highly educated work force in global competition.

The results of the analysis show, in general, that there has been a movement of employment in almost all Member States across the European Union over the past ten years towards higher paid jobs which seem to require higher levels of education – in so far as this can be deduced from the levels attained by the workers employed in them. This has occurred at the same time as the number of persons in work has risen, though to differing extents in different countries, suggesting that, in broad terms at least, the European Employment Strategy objective of more and better jobs has been achieved.

Nevertheless, this dual objective has been achieved to a greater extent in some countries than others – in Ireland and Slovenia more than in the Netherlands, Spain or Italy, where growth in the number of jobs seems to have been accompanied by little if any improvement in job quality, as measured by the indicators used here, or than in Portugal, where improvements in jobs quality have been associated with little or no growth in employment.

At the same time, it should be emphasized, as pointed out at the outset, that the measure of changes in job quality which is the focus of the study is only a partial indicator of the actual changes in quality which might have occurred, even assuming that relative wages and education levels adequately reflect this aspect. The measure, therefore, is concerned to capture improvements in quality which occur as a result of shifts in employment between jobs, of more people working in jobs further up the wage or skill hierarchy than before. It

does not capture, nor does it pretend to, improvements in the quality of given jobs, which is also an important part of the European Employment Strategy. Accordingly, it might be the case that even in the countries in which there was little or no shift in employment towards higher paid or higher skilled jobs over the period examined, or, indeed, a shift in the opposite direction, job quality might still have improved on average because of individual jobs becoming better in various ways.

The approach adopted here can say nothing about possible improvements of this kind. To investigate whether they have occurred or not, there is no substitute for the type of periodic survey into working conditions conducted by the European Foundation[20]. The approach set out in this study complements such surveys, which attempt to examine various aspects of job quality directly, precisely by focusing on changes in job structure and their implications, which surveys of working conditions, unless they were many times larger in scale (i.e. in terms of the number of people covered), cannot pick up.

The study also demonstrates that, while the focus might be on relative wages or education levels as indicators of job quality, this does not prevent other aspects which bear on this from being considered as well. A number of such aspects have been analysed above within the general framework developed, such as fixed-term contracts of employment, part-time working or jobs involving long working hours. The approach adopted, therefore, as illustrated in the study, enables these aspects to be taken into account alongside shifts in employment between jobs with different wage or skill levels.

Indeed, while the analysis in this regard suggests that there has been little change in the prevalence of fixed-term contracts of employment over recent years and little change in their incidence across the wage distribution – in the sense that they remain relatively concentrated in the lower paid jobs across the EU as a whole – it also suggests that there has been an increase in the proportion of jobs with long hours of work towards the top of the wage distribution.

Equally, as the study has also illustrated, dividing jobs in the way which has been done here opens up the possibility of examining the characteristics of the people employed at different wage levels and with different levels of education. This, accordingly, as indicated in the analysis, throws light on a number of policy issues, such as how far women as compared with men work in low wage or high wage jobs, how far these jobs are compatible with their levels of education, how far migrant workers tend to be concentrated in low paid, low quality jobs and so on. Just as importantly, the data compiled enable these features of labour market behaviour to be examined over time and raise the possibility of

[20] For the results of the latest survey for 2005, see European Foundation for the Improvement of Living and Working Conditions (2007), *Fourth European Working Conditions Survey*, Office for Official Publications of the European Communities, Luxembourg.

monitoring developments in the future to see whether and to what extent policy aims, in terms, for example, of achieving a better balance between men and women in employment or of improving the access of migrant workers to better jobs, are being achieved.

In practice, the results of the analysis indicate that there has been some improvement in the position of women in employment, in the sense that there has been a relative shift of women towards higher paid jobs in the EU as a whole – or, more accurately, a shift away from lower paid jobs since, while the overrepresentation of women at the bottom of the wage distribution has diminished, their under-representation at the top of the distribution has remained unchanged. The position of migrant workers, as distinguished by nationality and country of birth, has, however, not improved. Indeed, the relative concentration of migrant workers in lower paid jobs has increased over the past ten years in the EU.

While the study has touched on a number of important issues and examined some of the main characteristics of jobs and the people employed in them, there are a number of other aspects which can be explored on the basis of EU Labour Force Survey data which it has not been possible to do in this initial study. These include, for example, the relative number of people working in fixed-term jobs involuntarily, in the sense that they could not find a permanent one, the access to continuing training of those employed in jobs with differing relative wage and education levels and the proportion of jobs with differing relative wage levels in small as opposed to larger enterprises (or, more accurately, small as against larger local units).

As noted above, aspects such as these can potentially be monitored over time on the basis of LFS data, so long as they are sufficiently disaggregated to enable them to be linked to different jobs as distinguished here. Moreover, since the data concerned become available for all EU countries with only a relatively short time delay – of about a year or so – they allow developments across the Union to be tracked and assessed on a timely basis, in addition, of course, to the main focal point which is how employment is tending to shift between jobs with differing relative wage and education levels.

Accordingly, the database assembled for purposes of the present study and the framework of analysis developed provide the potential means of monitoring the performance of Member States in pursuing the dual European Employment Strategy objectives and, more generally, of distinguishing the main features of employment developments across the EU and their wider social as well as economic implications.

Appendix A: Correlations between wage hierarchies in different countries

Austria

The wage hierarchy is most closely related to that in Germany and there is equally a close relationship with that in other neighbouring countries – Italy, Slovenia, Hungary and the Czech Republic. At the same time, relative wages are also closely related to those in Spain, Poland and Finland.

Belgium

The structure of relative wages is closely related to that in the neighbouring countries of Luxembourg and Germany though also to that in Finland, Sweden and the Czech Republic.

Cyprus

The relative wage structure is most closely related to that in the Czech Republic but it is comparatively weakly correlated with that in other countries.

Czech Republic

The wage hierarchy is closely related to that in Slovakia, Germany, Austria and Poland, though also to that in Italy, Spain and Finland.

Germany

Relative wages are closely related to those in Austria, Belgium, Poland, Italy, Slovakia and Finland.

Denmark

The wage hierarchy is most closely related to that in the UK (a country with which it shares some characteristics in terms of labour market mobility) but there is also a close relationship to that in France.

Estonia

The relative wage structure is relatively most closely related to that in France and the UK but is comparatively weakly related to that in other Member States.

Spain

Relative wages are closely related to those in Germany, Italy and Austria though also with those in Czech Republic, Slovakia and Finland.

Finland

The structure of relative wages is most closely related to that in Sweden, though also to that in Germany, Austria and the Czech Republic.

France

The wage hierarchy is most closely related to that in the UK and there is also a relatively close relationship to that in Spain, Italy and Ireland.

Greece

Relative wages are most closely related to those in Spain, though the relationship with relative wages in most other countries is weaker than elsewhere.

Hungary

The structure of relative wages is most closely related to that in Italy and there is also a comparatively close relationship to that in Germany, Austria and Slovenia.

Ireland

The wage hierarchy is closely related to that in the UK though even more closely to that in Germany and Italy.

Italy

Relative wages are most closely related to those in Spain (a country which also has a relatively large proportion of small firms) as well as to those in Austria, Germany, Hungary and the Czech Republic, though also to those in Ireland.

Lithuania

The wage hierarchy is most closely related to that in Latvia but is relatively weakly related to that in other countries.

Luxembourg

The relative wage structure is most closely related to that in Belgium and there is also a comparatively close relationship with that in Germany and Austria.

Latvia

The wage hierarchy is most closely related to that in Lithuania but is relatively weakly related to that in other countries.

Netherlands

The relative wage structure is most closely related to that in the UK and is only slightly less closely related to that in Germany.

Poland

The wage hierarchy is most closely related to that in the Czech Republic and the relationship is also comparatively close with that in Germany and Austria, though equally with that in Slovenia, Spain and Portugal.

Portugal

Relative wages are closely related to those in Spain, Germany, Italy and Austria though the relationship is closest with those in Poland.

Sweden

The relative wage structure is most closely related to that in Finland as well as to that in Germany but also to that in Spain.

Slovakia

The wage hierarchy is most closely related that in the Czech Republic though it is also comparatively closely related to that in Spain and Finland.

Slovenia

The structure of relative wages is most closely related to that in neighbouring Austria and is also comparatively close to that in Hungary and Poland.

UK

The wage hierarchy is most closely related to that in France and also relatively close to that in Ireland.

Table A.1

Correlation coefficients for wage ranking between pairs of countries

	AT	BE	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IT	LT	LU	LV	NL	PL	PT	SE	SI	SK	UK
AT	1.00																							
BE	0.76	1.00																						
CY	0.64	0.70	1.00																					
CZ	0.77	0.80	0.75	1.00																				
DE	0.79	0.79	0.71	0.80	1.00																			
DK	0.62	0.67	0.71	0.71	0.73	1.00																		
EE	0.54	0.51	0.54	0.66	0.62	0.57	1.00																	
ES	0.81	0.77	0.72	0.81	0.76	0.67	0.53	1.00																
FI	0.72	0.74	0.54	0.73	0.71	0.61	0.48	0.82	1.00															
FR	0.64	0.64	0.63	0.69	0.74	0.74	0.60	0.68	0.67	1.00														
GR	0.63	0.60	0.58	0.69	0.57	0.55	0.53	0.72	0.57	0.56	1.00													
HU	0.70	0.70	0.68	0.78	0.78	0.74	0.64	0.71	0.59	0.72	0.59	1.00												
IE	0.66	0.68	0.67	0.72	0.70	0.59	0.52	0.63	0.63	0.70	0.55	0.62	1.00											
IT	0.77	0.72	0.63	0.78	0.79	0.67	0.54	0.79	0.76	0.78	0.67	0.72	0.74	1.00										
LT	0.59	0.63	0.67	0.67	0.65	0.63	0.68	0.66	0.51	0.59	0.48	0.76	0.55	0.54	1.00									
LU	0.66	0.78	0.70	0.76	0.74	0.63	0.45	0.64	0.62	0.53	0.61	0.63	0.60	0.68	0.57	1.00								
LV	0.52	0.52	0.47	0.60	0.55	0.48	0.70	0.49	0.42	0.41	0.49	0.67	0.49	0.40	0.79	0.47	1.00							
NL	0.70	0.69	0.67	0.71	0.72	0.69	0.55	0.71	0.66	0.71	0.50	0.71	0.63	0.71	0.63	0.60	0.47	1.00						
PL	0.80	0.85	0.71	0.85	0.79	0.65	0.61	0.82	0.73	0.67	0.65	0.74	0.70	0.71	0.74	0.78	0.60	0.69	1.00					
PT	0.77	0.67	0.72	0.72	0.78	0.72	0.55	0.72	0.63	0.77	0.59	0.80	0.64	0.69	0.65	0.63	0.59	0.69	0.70	1.00				
SE	0.52	0.52	0.55	0.56	0.61	0.46	0.55	0.61	0.56	0.52	0.44	0.54	0.44	0.53	0.50	0.40	0.32	0.55	0.60	0.51	1.00			
SI	0.74	0.68	0.65	0.77	0.74	0.59	0.58	0.69	0.61	0.61	0.53	0.73	0.64	0.73	0.64	0.67	0.52	0.66	0.82	0.65	0.57	1.00		
SK	0.72	0.80	0.74	0.85	0.75	0.65	0.60	0.74	0.68	0.63	0.60	0.68	0.72	0.68	0.69	0.73	0.60	0.66	0.83	0.69	0.57	0.69	1.00	
UK	0.66	0.61	0.64	0.69	0.78	0.74	0.69	0.66	0.60	0.82	0.55	0.80	0.66	0.72	0.66	0.51	0.60	0.71	0.63	0.78	0.52	0.60	0.61	1.00

Table A.2

Spearman's rank correlation coefficients for wage ranking between pairs of countries

	AT	BE	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IT	LT	LU	LV	NL	PL	PT	SE	SI	SK	UK
AT	1.00																							
BE	0.82	1.00																						
CY	0.67	0.67	1.00																					
CZ	0.83	0.83	0.77	1.00																				
DE	0.88	0.84	0.72	0.83	1.00																			
DK	0.67	0.66	0.72	0.74	0.74	1.00																		
EE	0.65	0.53	0.65	0.65	0.64	0.66	1.00																	
ES	0.87	0.85	0.74	0.88	0.87	0.73	0.61	1.00																
FI	0.83	0.81	0.66	0.84	0.84	0.69	0.56	0.86	1.00															
FR	0.74	0.65	0.68	0.79	0.79	0.75	0.79	0.80	0.75	1.00														
GR	0.67	0.66	0.70	0.70	0.68	0.62	0.55	0.79	0.66	0.67	1.00													
HU	0.82	0.78	0.69	0.82	0.83	0.72	0.68	0.84	0.74	0.73	0.67	1.00												
IE	0.79	0.73	0.68	0.78	0.82	0.73	0.64	0.81	0.76	0.82	0.72	0.77	1.00											
IT	0.86	0.80	0.65	0.83	0.87	0.70	0.62	0.89	0.81	0.82	0.70	0.85	0.84	1.00										
LT	0.63	0.63	0.62	0.63	0.68	0.61	0.72	0.65	0.57	0.63	0.56	0.73	0.63	0.61	1.00									
LU	0.82	0.82	0.66	0.79	0.83	0.62	0.54	0.81	0.77	0.62	0.64	0.78	0.71	0.79	0.62	1.00								
LV	0.57	0.49	0.49	0.55	0.54	0.47	0.69	0.53	0.49	0.53	0.52	0.65	0.53	0.49	0.76	0.58	1.00							
NL	0.74	0.70	0.71	0.75	0.77	0.73	0.67	0.78	0.73	0.77	0.68	0.75	0.77	0.79	0.61	0.66	0.49	1.00						
PL	0.87	0.85	0.72	0.87	0.87	0.67	0.63	0.87	0.81	0.73	0.67	0.84	0.76	0.83	0.74	0.83	0.63	0.73	1.00					
PT	0.86	0.77	0.70	0.81	0.87	0.68	0.66	0.85	0.78	0.76	0.69	0.84	0.80	0.86	0.69	0.78	0.65	0.73	0.85	1.00				
SE	0.82	0.82	0.68	0.79	0.86	0.69	0.61	0.83	0.88	0.71	0.62	0.77	0.75	0.78	0.63	0.73	0.51	0.76	0.80	0.76	1.00			
SI	0.84	0.79	0.71	0.81	0.83	0.65	0.62	0.82	0.74	0.68	0.61	0.84	0.74	0.83	0.73	0.77	0.58	0.72	0.87	0.81	0.79	1.00		
SK	0.80	0.80	0.75	0.86	0.80	0.74	0.68	0.86	0.81	0.78	0.70	0.75	0.77	0.80	0.68	0.72	0.54	0.79	0.81	0.80	0.77	0.73	1.00	
UK	0.73	0.67	0.68	0.75	0.80	0.78	0.76	0.76	0.76	0.86	0.68	0.77	0.83	0.79	0.67	0.65	0.62	0.78	0.71	0.79	0.74	0.69	0.75	1.00

Table A.3

Correlation coefficients for skill ranking between pairs of countries

	AT	BE	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IT	LT	LU	LV	NL	PL	PT	SE	SI	SK	UK
AT	1.00																							
BE	0.62	1.00																						
CY	0.65	0.72	1.00																					
CZ	0.67	0.65	0.69	1.00																				
DE	0.70	0.71	0.73	0.69	1.00																			
DK	0.64	0.70	0.67	0.67	0.73	1.00																		
EE	0.58	0.64	0.67	0.63	0.61	0.57	1.00																	
ES	0.67	0.76	0.76	0.66	0.72	0.71	0.65	1.00																
FI	0.60	0.72	0.70	0.63	0.69	0.66	0.59	0.73	1.00															
FR	0.69	0.76	0.73	0.67	0.72	0.73	0.64	0.74	0.69	1.00														
GR	0.70	0.79	0.81	0.68	0.79	0.73	0.67	0.84	0.72	0.79	1.00													
HU	0.70	0.70	0.72	0.74	0.76	0.66	0.64	0.73	0.68	0.71	0.75	1.00												
IE	0.56	0.69	0.74	0.62	0.66	0.66	0.63	0.73	0.66	0.67	0.78	0.69	1.00											
IT	0.70	0.74	0.74	0.66	0.73	0.68	0.62	0.77	0.67	0.74	0.81	0.73	0.70	1.00										
LT	0.57	0.65	0.64	0.62	0.63	0.56	0.59	0.66	0.59	0.63	0.65	0.64	0.61	0.63	1.00									
LU	0.75	0.78	0.74	0.72	0.83	0.77	0.65	0.79	0.73	0.80	0.80	0.80	0.73	0.78	0.65	1.00								
LV	0.59	0.63	0.66	0.61	0.63	0.57	0.57	0.66	0.59	0.61	0.68	0.69	0.63	0.62	0.62	0.67	1.00							
NL	0.63	0.71	0.72	0.66	0.71	0.68	0.61	0.74	0.67	0.70	0.76	0.72	0.68	0.71	0.64	0.78	0.59	1.00						
PL	0.75	0.73	0.68	0.74	0.80	0.71	0.66	0.75	0.65	0.74	0.75	0.81	0.67	0.77	0.65	0.80	0.67	0.73	1.00					
PT	0.72	0.75	0.73	0.72	0.78	0.69	0.65	0.80	0.68	0.76	0.83	0.77	0.72	0.82	0.64	0.81	0.66	0.74	0.79	1.00				
SE	0.59	0.65	0.69	0.63	0.70	0.67	0.56	0.71	0.65	0.72	0.73	0.66	0.63	0.69	0.58	0.75	0.59	0.67	0.68	0.74	1.00			
SI	0.69	0.73	0.73	0.74	0.79	0.71	0.64	0.75	0.66	0.75	0.79	0.81	0.71	0.75	0.62	0.82	0.68	0.75	0.79	0.79	0.67	1.00		
SK	0.64	0.65	0.64	0.71	0.69	0.62	0.60	0.66	0.63	0.67	0.70	0.73	0.62	0.66	0.59	0.75	0.62	0.67	0.74	0.68	0.61	0.75	1.00	
UK	0.64	0.68	0.73	0.66	0.69	0.70	0.62	0.73	0.66	0.71	0.77	0.67	0.65	0.69	0.61	0.78	0.60	0.73	0.72	0.75	0.66	0.74	0.64	1.00

Table A.4

Spearman's rank correlation coefficients for skill ranking between pairs of countries

	AT	BE	CY	CZ	DE	DK	EE	ES	FI	FR	GR	HU	IE	IT	LT	LU	LV	NL	PL	PT	SE	SI	SK	UK
AT	1.00																							
BE	0.80	1.00																						
CY	0.76	0.78	1.00																					
CZ	0.88	0.83	0.80	1.00																				
DE	0.91	0.84	0.79	0.91	1.00																			
DK	0.82	0.81	0.76	0.84	0.86	1.00																		
EE	0.73	0.78	0.73	0.78	0.77	0.72	1.00																	
ES	0.82	0.88	0.81	0.85	0.85	0.84	0.79	1.00																
FI	0.80	0.86	0.78	0.82	0.84	0.82	0.75	0.85	1.00															
FR	0.85	0.90	0.81	0.87	0.90	0.85	0.79	0.89	0.87	1.00														
GR	0.81	0.88	0.85	0.85	0.85	0.84	0.79	0.93	0.85	0.89	1.00													
HU	0.89	0.85	0.81	0.93	0.92	0.83	0.79	0.85	0.84	0.88	0.87	1.00												
IE	0.81	0.89	0.81	0.85	0.85	0.82	0.80	0.92	0.86	0.90	0.90	0.86	1.00											
IT	0.82	0.90	0.83	0.87	0.85	0.83	0.82	0.93	0.87	0.92	0.93	0.88	0.91	1.00										
LT	0.74	0.77	0.72	0.80	0.78	0.75	0.73	0.80	0.75	0.80	0.80	0.79	0.78	0.80	1.00									
LU	0.86	0.83	0.80	0.88	0.90	0.84	0.75	0.85	0.83	0.87	0.86	0.88	0.84	0.85	0.77	1.00								
LV	0.74	0.79	0.73	0.81	0.78	0.71	0.74	0.77	0.77	0.79	0.79	0.83	0.78	0.81	0.76	0.75	1.00							
NL	0.87	0.88	0.82	0.88	0.90	0.85	0.79	0.90	0.85	0.90	0.89	0.89	0.90	0.91	0.81	0.88	0.81	1.00						
PL	0.78	0.84	0.75	0.85	0.82	0.78	0.77	0.83	0.80	0.83	0.84	0.87	0.82	0.85	0.76	0.81	0.80	0.84	1.00					
PT	0.78	0.89	0.80	0.82	0.82	0.80	0.80	0.90	0.84	0.87	0.91	0.84	0.88	0.92	0.78	0.81	0.79	0.87	0.83	1.00				
SE	0.78	0.82	0.75	0.81	0.82	0.78	0.75	0.85	0.83	0.85	0.85	0.82	0.85	0.87	0.77	0.80	0.76	0.85	0.77	0.84	1.00			
SI	0.87	0.86	0.80	0.90	0.91	0.83	0.78	0.85	0.83	0.89	0.87	0.91	0.85	0.87	0.78	0.87	0.80	0.89	0.87	0.85	0.84	1.00		
SK	0.84	0.84	0.77	0.92	0.89	0.80	0.78	0.84	0.81	0.86	0.84	0.92	0.85	0.86	0.80	0.87	0.81	0.88	0.84	0.81	0.82	0.88	1.00	
UK	0.88	0.83	0.80	0.89	0.91	0.85	0.76	0.89	0.83	0.89	0.86	0.89	0.89	0.87	0.76	0.88	0.74	0.90	0.79	0.82	0.82	0.88	0.86	1.00

Appendix B: Employment levels by quintile

Table B.1

Employment levels, 2000=100

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria	99,5	98,2	98,3	98,5	99,6	100,0	100,9	100,0	102,2	100,9	103,0
Belgium	92,2	92,5	93,4	94,4	97,9	100,0	99,1	99,4	99,4	101,1	103,5
Denmark	95,5	96,6	98,1	98,6	99,5	100,0	100,9	100,4	99,8	100,9	101,4
Finland			93,1	95,3	98,3	100,0	101,3	101,5	101,2	101,2	102,8
France	94,4	94,5	94,7	95,8	97,5	100,0	101,8	102,6	104,0	104,5	105,2
Germany	98,1	97,6	97,0	97,7	99,5	100,0	100,3	99,5	98,5	98,3	99,7
Greece	80,7	83,0	86,1	89,7	94,7	100,0	104,1	107,2	111,5	115,9	122,4
Ireland	75,4	78,4	83,2	90,0	95,6	100,0	103,1	105,0	107,0	110,2	115,4
Italy	95,0	95,5	95,9	96,9	98,2	100,0	102,1	103,6	104,6	106,3	107,0
Luxembourg	90,1	91,7	93,4	94,5	97,8	100,0	102,8	103,9	103,3	103,9	107,2
Netherlands		89,5	92,9	95,5	97,9	100,0	102,5	103,8	103,2	103,0	103,1
Portugal	93,7	94,6	94,9	98,3	98,6	100,0	100,0	102,2	104,5	105,5	106,9
Spain					94,9	100,0	104,7	107,1	111,1	114,5	117,6
Sweden			94,4	95,7	97,9	100,0	101,8	102,0	101,7	101,2	102,5
United Kingdom	95,8	97,0	98,8	100,1	101,5	100,0	100,9	101,4	102,3	103,1	103,7
Cyprus	91,9	93,0	95,2	96,5	97,8	100,0	101,8	102,3	101,9	102,0	102,0
Czech Republic				103,0	100,7	100,0	100,1	101,1	100,4	100,2	101,8
Estonia			104,9	105,8	101,4	100,0	100,9	102,1	103,7	104,0	105,9
Hungary			94,0	95,9	99,0	100,0	101,0	101,1	102,4	101,9	101,9
Lithuania				106,1	104,3	100,0	96,7	99,8	102,1	102,1	105,0
Latvia				104,6	102,9	100,0	101,6	104,4	106,7	107,8	109,5
Slovak Republic				104,6	101,4	100,0	100,9	101,0	102,9	103,1	105,4
Slovenia		96,4	98,7	99,3	98,0	100,0	101,7	101,0	99,6	104,7	105,3

Table B.2

Employment levels by quintile

Country	Quintile	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria	1	866	889	866	857	859	845	829	803	827	816	844
	2	651	630	640	631	652	658	664	675	698	733	774
	3	599	549	528	523	535	534	536	521	532	494	493
	4	875	857	881	887	910	910	907	922	916	861	873
	5	690	707	721	744	739	751	800	779	808	827	829
Belgium	1	771	779	788	773	753	792	745	744	745	732	745
	2	710	706	711	713	781	814	812	853	836	850	851
	3	795	776	778	787	802	835	839	838	857	838	833
	4	566	556	588	608	627	666	627	627	646	637	682
	5	893	927	918	943	1005	944	990	972	953	1050	1094
Denmark	1	575	559	579	604	554	563	549	546	561	580	562
	2	560	560	581	566	566	538	532	498	470	484	493
	3	459	487	481	468	507	511	514	515	509	530	526
	4	519	518	531	542	530	554	573	599	583	542	556
	5	463	482	480	482	525	534	558	554	578	590	601
Finland	1			515	521	538	544	540	537	531	513	524
	2			451	469	455	457	466	462	454	441	434
	3			427	429	425	431	435	419	417	418	437
	4			377	419	428	440	461	478	459	473	481
	5			392	375	441	453	457	468	495	511	517
France	1	4077	4133	4198	4266	4393	4468	4530	4520	4439	4633	4742
	2	4613	4654	4575	4506	4584	4720	4709	4756	4762	4761	4641
	3	4003	4038	3988	4093	4082	4255	4308	4292	4048	3774	3634
	4	4408	4335	4364	4449	4508	4611	4741	4833	5283	5211	5274
	5	4621	4605	4698	4713	4892	4997	5157	5247	5479	5708	5943
Germany	1	6893	6650	6733	6769	7041	7052	7100	7101	6818	6782	7011
	2	6740	6562	6400	6491	6632	6644	6609	6436	6440	6325	6491
	3	7783	7860	7585	7560	7541	7528	7435	7254	7010	6965	6976
	4	6748	6831	6861	6924	7056	7291	7323	7388	7419	7352	7428
	5	7377	7444	7548	7644	7787	7725	7888	7891	8013	8191	8213
Greece	1	1103	1091	1066	1020	1012	1020	969	953	964	958	957
	2	524	536	546	590	615	627	654	685	705	733	760
	3	680	681	689	765	779	798	823	871	913	875	916
	4	763	762	788	798	798	782	793	801	822	861	851
	5	723	755	747	800	790	821	808	825	832	826	824
Ireland	1	264	262	280	302	321	330	327	327	332	331	358
	2	263	271	285	304	318	330	340	332	330	325	345
	3	256	266	292	315	327	340	333	341	331	339	358
	4	228	253	271	297	325	348	376	382	404	421	444
	5	236	263	279	297	318	337	362	387	406	441	441
Italy	1	4238	4182	4058	4024	3856	3821	3892	3868	3831	3925	3953
	2	4389	4468	4452	4457	4499	4603	4672	4720	4841	5053	5111
	3	4289	4307	4319	4383	4494	4574	4605	4677	4736	4851	4926
	4	3868	3879	4030	4079	4201	4392	4538	4651	4688	4540	4608
	5	3060	3104	3162	3297	3424	3690	3584	3699	3716	3782	3710
Luxembourg	1	39	38	38	37	36	39	39	40	39	38	38
	2	36	34	36	35	35	36	40	37	35	36	36
	3	32	32	31	31	34	35	37	36	36	34	35
	4	26	28	29	29	33	32	30	32	34	36	37
	5	30	34	35	39	39	40	38	43	42	44	46
Netherlands	1		1343	1390	1445	1463	1590	1594	1620	1611	1680	1724
	2		1374	1423	1455	1473	1524	1546	1534	1552	1518	1521
	3		1494	1520	1525	1587	1526	1625	1614	1524	1509	1525
	4		1373	1409	1482	1496	1558	1590	1602	1634	1669	1620
	5		1420	1518	1572	1636	1632	1675	1757	1763	1693	1685
Portugal	1	917	902	903	913	896	885	869	844	798	763	747
	2	973	1019	1088	1144	1144	1146	1204	1183	1201	1167	1161
	3	748	774	829	817	831	882	852	902	867	843	838
	4	790	814	832	847	858	918	988	995	992	1039	1048
	5	1149	1127	1085	1088	1145	1158	1159	1186	1227	1278	1301

Country	Quintile	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Spain	1	2444	2434	2485	2602	2779	2871	2923	3028	3163	3232	3431
	2	2535	2471	2500	2634	2795	2972	2987	3046	3164	3236	3417
	3	2229	2264	2388	2488	2695	2904	3097	3217	3357	3461	3684
	4	2319	2432	2556	2635	2736	2926	3122	3202	3384	3588	3759
	5	2934	3210	3360	3477	3614	3752	3925	4050	4142	4361	4593
Sweden	1			884	901	895	915	901	878	810	790	774
	2			815	809	821	828	819	818	868	859	845
	3			564	578	563	599	632	636	699	699	732
	4			1000	1010	1079	1064	1098	1101	1022	1019	1024
	5			726	745	778	824	857	880	905	913	962
United Kingdom	1	5338	5371	5450	5483	5352	5308	5407	5494	5479	5545	5427
	2	5193	5244	5338	5465	5645	5515	5507	5459	5476	5488	5569
	3	5499	5498	5635	5662	5675	5403	5287	5166	5231	5214	5190
	4	5068	5140	5220	5274	5305	5415	5599	5759	5809	5830	5958
	5	4823	4990	5090	5206	5491	5436	5529	5612	5715	5851	5956
Cyprus	1					54	57	60	63	65	69	72
	2					53	56	58	59	61	62	59
	3					57	56	60	58	60	65	69
	4					54	55	56	60	61	64	65
	5					60	68	73	73	77	76	79
Czech Republic	1				780	740	729	674	683	659	605	578
	2				1098	1098	1079	1108	1130	1130	1120	1144
	3				981	929	905	908	926	919	939	934
	4				933	922	901	926	947	966	980	992
	5				1020	1012	1048	1056	1031	1010	1033	1102
Estonia	1			127	142	134	118	125	131	132	132	131
	2			117	123	116	119	124	119	128	121	117
	3			128	115	109	112	115	117	118	113	117
	4			106	109	102	90	95	102	99	105	103
	5			121	116	118	133	115	114	115	122	137
Hungary	1			708	719	727	716	698	692	664	644	641
	2			698	712	771	793	840	851	855	827	856
	3			725	751	754	750	809	803	817	814	812
	4			678	687	698	702	675	683	698	684	676
	5			747	763	801	821	830	828	873	914	898
Latvia	1				170	170	171	169	181	161	165	175
	2				257	242	227	228	208	241	225	205
	3				187	178	175	197	193	224	231	235
	4				216	210	201	200	212	204	211	219
	5				156	170	168	164	192	176	185	198
Lithuania	1				301	321	306	277	301	304	280	260
	2				297	273	275	288	293	312	291	303
	3				307	298	287	279	301	305	328	351
	4				275	252	255	250	256	262	260	279
	5				306	317	281	260	246	248	269	278
Slovak Republic	1				437	419	420	433	437	448	449	437
	2				373	361	355	352	374	376	376	389
	3				502	457	438	446	454	451	457	470
	4				465	464	463	457	446	466	439	442
	5				418	427	422	426	405	412	432	462
Slovenia	1		191	190	190	185	179	185	185	176	182	182
	2		153	161	163	156	168	168	166	152	157	175
	3		185	189	188	181	185	183	184	180	189	177
	4		171	189	193	176	177	182	181	181	189	172
	5		168	159	162	185	188	196	188	206	222	239

Table B.3

Index of employment levels by quintile, 2000 = 100

Country	Quintile	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Austria	1	103	105	103	101	102	100	98	95	98	96	100
	2	99	96	97	96	99	100	101	102	106	111	118
	3	112	103	99	98	100	100	100	97	100	92	92
	4	96	94	97	98	100	100	100	101	101	94	96
	5	92	94	96	99	98	100	107	104	108	110	110
Belgium	1	97	98	99	98	95	100	94	94	94	92	94
	2	87	87	87	88	96	100	100	105	103	104	105
	3	95	93	93	94	96	100	101	100	103	100	100
	4	85	83	88	91	94	100	94	94	97	96	102
	5	95	98	97	100	107	100	105	103	101	111	116
Denmark	1	102	99	103	107	98	100	98	97	100	103	100
	2	104	104	108	105	105	100	99	93	87	90	92
	3	90	95	94	92	99	100	101	101	100	104	103
	4	94	93	96	98	96	100	103	108	105	98	100
	5	87	90	90	90	98	100	105	104	108	111	113
Finland	1			95	96	99	100	99	100	99	96	98
	2			99	103	100	100	102	102	101	98	97
	3			99	99	98	100	101	98	98	99	103
	4			86	95	97	100	105	110	106	110	112
	5			87	83	97	100	101	105	111	115	116
France	1	91	93	94	95	98	100	101	101	99	104	106
	2	98	99	97	95	97	100	100	101	101	101	98
	3	94	95	94	96	96	100	101	101	95	89	85
	4	96	94	95	96	98	100	103	105	115	113	114
	5	92	92	94	94	98	100	103	105	110	114	119
Germany	1	98	94	95	96	100	100	101	101	97	96	99
	2	101	99	96	98	100	100	99	97	97	95	98
	3	103	104	101	100	100	100	99	96	93	93	93
	4	93	94	94	95	97	100	100	101	102	101	102
	5	95	96	98	99	101	100	102	102	104	106	106
Greece	1	108	107	105	100	99	100	95	93	95	95	95
	2	84	85	87	94	98	100	104	109	112	118	122
	3	85	85	86	96	98	100	103	109	114	111	116
	4	98	97	101	102	102	100	101	102	105	111	110
	5	88	92	91	97	96	100	98	100	101	102	101
Ireland	1	81	80	86	92	97	100	99	99	101	100	109
	2	80	83	88	92	97	100	103	101	100	99	105
	3	76	79	87	93	96	100	98	100	97	100	105
	4	66	74	79	85	93	100	108	110	116	121	127
	5	70	79	84	88	94	100	107	115	121	131	131
Italy	1	111	109	106	105	101	100	102	101	100	100	101
	2	95	97	97	97	98	100	101	103	105	107	109
	3	94	94	94	96	98	100	101	102	104	104	105
	4	88	88	92	93	96	100	103	106	107	101	103
	5	83	84	86	89	93	100	97	100	101	100	98
Luxembourg	1	99	97	97	96	91	100	100	103	93	87	87
	2	101	94	100	97	98	100	111	102	93	88	88
	3	92	92	89	88	97	100	108	105	97	87	90
	4	82	88	93	92	103	100	95	100	102	102	104
	5	74	84	87	98	98	100	96	107	98	97	102
Netherlands	1		84	87	91	92	100	100	102	101	106	108
	2		90	93	95	97	100	101	101	102	100	100
	3		98	100	100	104	100	106	106	100	99	100
	4		88	90	95	96	100	102	103	105	107	104
	5		87	93	96	100	100	103	108	108	104	103

Country	Quintile	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Portugal	1	105	103	104	103	101	100	98	95	90	84	82
	2	86	90	96	100	100	100	105	103	105	99	99
	3	86	89	95	93	94	100	97	102	98	93	93
	4	87	90	92	92	93	100	108	108	108	111	111
	5	100	99	95	94	99	100	100	102	106	108	110
Spain	1	85.1	84.8	86.5	90.6	96.8	100.0	101.8	105.5	110.2	112.6	119.5
	2	85.3	83.2	84.1	88.6	94.1	100.0	100.5	102.5	106.5	108.9	115.0
	3	76.8	78.0	82.2	85.7	92.8	100.0	106.7	110.8	115.6	119.2	126.9
	4	79.3	83.1	87.4	90.0	93.5	100.0	106.7	109.4	115.7	122.6	128.5
	5	78.2	85.5	89.5	92.6	96.3	100.0	104.6	107.9	110.4	116.2	122.4
Sweden	1			97	99	98	100	98	96	89	86	85
	2			98	98	99	100	99	99	105	104	102
	3			94	97	94	100	106	106	117	117	122
	4			94	95	101	100	103	103	96	96	96
	5			88	90	94	100	104	107	110	111	117
United Kingdom	1	101	101	103	103	101	100	100	102	102	103	101
	2	94	95	97	99	102	100	98	98	98	98	100
	3	102	102	104	105	105	100	96	94	96	95	95
	4	94	95	96	97	98	100	102	105	106	106	109
	5	89	92	94	96	101	100	100	102	104	106	108
Cyprus	1					94	100	105	111	114	121	127
	2					95	100	103	105	109	110	106
	3					103	100	108	104	108	117	123
	4					98	100	102	109	112	116	119
	5					88	100	107	108	113	112	116
Czech Republic	1				107	101	100	93	94	90	83	79
	2				102	102	100	103	105	105	104	106
	3				108	103	100	100	102	102	104	103
	4				103	102	100	103	105	107	109	110
	5				97	97	100	101	98	96	99	105
Estonia	1			107	120	113	100	105	110	111	111	111
	2			99	104	98	100	105	100	108	102	98
	3			114	102	97	100	103	105	106	101	104
	4			118	121	113	100	106	114	110	117	115
	5			91	87	88	100	87	86	86	92	103
Hungary	1			99	100	101	100	98	97	93	90	89
	2			88	90	97	100	106	107	108	104	108
	3			97	100	101	100	108	107	109	109	108
	4			97	98	100	100	96	97	99	97	96
	5			91	93	98	100	101	101	106	111	109
Latvia	1				99	99	100	99	106	94	96	102
	2				113	107	100	101	92	106	99	91
	3				107	102	100	113	110	128	132	135
	4				107	104	100	100	105	101	105	109
	5				93	101	100	98	114	105	110	118
Lithuania	1				98	105	100	91	99	99	92	85
	2				108	99	100	105	107	113	106	110
	3				107	104	100	97	105	106	114	122
	4				108	99	100	98	100	103	102	109
	5				109	113	100	93	88	88	96	99
Slovak Republic	1				104	100	100	103	104	107	107	104
	2				105	102	100	99	106	106	106	110
	3				115	104	100	102	104	103	104	107
	4				100	100	100	99	96	101	95	95
	5				99	101	100	101	96	98	102	109
Slovenia	1		107	106	106	103	100	103	103	98	101	101
	2		91	96	97	93	100	100	99	90	93	104
	3		100	102	101	98	100	99	99	97	102	95
	4		97	107	109	100	100	103	102	102	107	97
	5		89	85	86	98	100	104	100	109	118	127

Appendix C : Worker characteristics by quintile

Table C.1

Gender characteristics by quintile

	Share of male in total employment	Share of male in quintiles (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	55.6	45.5	51.3	65.9	55.6	63.3	-10.1	-4.2	10.4	0.0	7.7	0.09	-0.11	0.33	-0.18	0.01
Belgium	57.7	66.6	41.4	68.9	61.2	52.2	8.9	-16.3	11.2	3.5	-5.5	0.19	0.02	-0.13	0.03	0.20
Denmark	53.8	46.4	54.0	66.3	38.8	65.7	-7.5	0.2	12.4	-15.1	11.9	0.26	0.33	-0.47	-0.07	-0.51
Finland	52.0	47.2	39.1	66.5	55.4	53.6	-4.8	-12.9	14.6	3.4	1.7	-0.39	0.55	0.17	-0.18	-0.28
France	54.4	37.7	64.0	59.4	50.0	60.5	-16.7	9.6	5.0	-4.5	6.0	0.00	0.39	0.54	-0.19	-0.37
Germany	55.9	44.2	57.0	68.1	42.5	66.1	-11.7	1.0	12.2	-13.4	10.2	0.09	-0.08	-0.02	0.06	0.11
Greece	62.6	56.4	44.8	73.4	62.2	74.4	-6.2	-17.8	10.8	-0.4	11.8	0.21	-0.11	-0.03	-0.08	-0.15
Ireland	59.4	45.6	56.9	61.7	81.8	49.9	-13.8	-2.5	2.3	22.4	-9.5	-0.25	0.14	-0.34	0.20	-0.25
Italy	62.7	62.3	60.5	72.8	60.9	55.1	-0.4	-2.2	10.2	-1.8	-7.6	0.20	0.11	0.02	-0.37	0.08
Luxembourg	60.9	53.4	71.1	58.6	55.5	65.2	-7.5	10.2	-2.3	-5.4	4.3	0.36	-0.41	-0.04	0.01	0.00
Netherlands	56.9	46.1	46.5	72.1	55.8	63.4	-10.8	-10.4	15.1	-1.1	6.5	0.43	0.06	0.31	-0.13	-0.41
Portugal	54.6	47.9	40.2	76.4	59.2	54.4	-6.7	-14.4	21.8	4.6	-0.3	0.20	-0.18	0.65	-0.51	-0.17
Spain	63.2	49.7	63.9	73.6	70.1	59.4	-13.5	0.7	10.4	7.0	-3.7	-0.16	-0.16	0.37	-0.32	0.06
Sweden	52.2	56.5	53.3	49.4	46.5	56.2	4.4	1.1	-2.7	-5.7	4.0	0.67	-0.04	-0.97	0.13	0.00
United Kingdom	54.2	41.3	47.6	61.1	63.1	57.9	-12.9	-6.5	6.9	8.9	3.7	0.65	0.09	-0.10	-0.58	-0.16
Cyprus	56.7	31.9	43.9	70.3	77.5	60.2	-24.8	-12.8	13.6	20.7	3.5	-0.59	-0.09	0.30	0.92	-0.21
Czech Republic	56.2	45.1	44.8	75.2	54.5	60.3	-11.1	-11.4	19.0	-1.7	4.1	0.54	0.23	-0.35	-0.15	-0.28
Estonia	50.4	30.9	61.7	67.2	45.1	48.8	-19.5	11.2	16.7	-5.3	-1.7	-0.46	0.90	0.94	-0.17	-0.85
Hungary	54.5	46.1	69.3	53.7	55.1	47.7	-8.4	14.8	-0.9	0.5	-6.9	-0.24	0.54	-0.63	0.07	-0.02
Latvia	51.2	41.6	48.5	65.0	44.6	55.8	-9.6	-2.7	13.8	-6.6	4.6	-0.36	-0.20	0.20	0.00	-0.34
Lithuania	50.4	50.0	43.2	59.5	52.4	46.1	-0.4	-7.2	9.2	2.0	-4.3	0.43	-0.81	0.52	0.00	-0.42
Slovak Republic	54.4	41.4	36.4	78.7	56.0	55.5	-13.1	-18.0	24.3	1.6	1.1	0.73	-0.31	0.13	0.01	-0.28
Slovenia	53.9	57.6	44.2	67.6	53.4	46.1	3.7	-9.7	13.7	-0.5	-7.8	0.56	0.16	0.63	-0.22	-0.48

Table C.1 (contd.)

	Share of female in total employment	Share of female in quintiles (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	44.4	54.5	48.7	34.1	44.4	36.7	10.1	4.2	-10.4	0.0	-7.7	-0.09	0.11	-0.33	0.18	-0.01
Belgium	42.3	33.4	58.6	31.1	38.8	47.8	-8.9	16.3	-11.2	-3.5	5.5	-0.19	-0.02	0.13	-0.03	-0.20
Denmark	46.2	53.6	46.0	33.7	61.2	34.3	7.5	-0.2	-12.4	15.1	-11.9	-0.26	-0.33	0.47	0.07	0.51
Finland	48.0	52.8	60.9	33.5	44.6	46.4	4.8	12.9	-14.6	-3.4	-1.7	0.39	-0.55	-0.17	0.18	0.28
France	45.6	62.3	36.0	40.6	50.0	39.5	16.7	-9.6	-5.0	4.5	-6.0	0.00	-0.39	-0.54	0.19	0.37
Germany	44.1	55.8	43.0	31.9	57.5	33.9	11.7	-1.0	-12.2	13.4	-10.2	-0.09	0.08	0.02	-0.06	-0.11
Greece	37.4	43.6	55.2	26.6	37.8	25.6	6.2	17.8	-10.8	0.4	-11.8	-0.21	0.11	0.03	0.08	0.15
Ireland	40.6	54.4	43.1	38.3	18.2	50.1	13.8	2.5	-2.3	-22.4	9.5	0.25	-0.14	0.34	-0.20	0.25
Italy	37.3	37.7	39.5	27.2	39.1	44.9	0.4	2.2	-10.2	1.8	7.6	-0.20	-0.11	-0.02	0.37	-0.08
Luxembourg	39.1	46.6	28.9	41.4	44.5	34.8	7.5	-10.2	2.3	5.4	-4.3	-0.36	0.41	0.04	-0.01	0.00
Netherlands	43.1	53.9	53.5	27.9	44.2	36.6	10.8	10.4	-15.1	1.1	-6.5	-0.43	-0.06	-0.31	0.13	0.41
Portugal	45.4	52.1	59.8	23.6	40.8	45.6	6.7	14.4	-21.8	-4.6	0.3	-0.20	0.18	-0.65	0.51	0.17
Spain	36.8	50.3	36.1	26.4	29.9	40.6	13.5	-0.7	-10.4	-7.0	3.7	0.16	0.16	-0.37	0.32	-0.06
Sweden	47.8	43.5	46.7	50.6	53.5	43.8	-4.4	-1.1	2.7	5.7	-4.0	-0.67	0.04	0.97	-0.13	0.00
United Kingdom	45.8	58.7	52.4	38.9	36.9	42.1	12.9	6.5	-6.9	-8.9	-3.7	-0.65	-0.09	0.10	0.58	0.16
Cyprus	43.3	68.1	56.1	29.7	22.5	39.8	24.8	12.8	-13.6	-20.7	-3.5	0.59	0.09	-0.30	-0.92	0.21
Czech Republic	43.8	54.9	55.2	24.8	45.5	39.7	11.1	11.4	-19.0	1.7	-4.1	-0.54	-0.23	0.35	0.15	0.28
Estonia	49.6	69.1	38.3	32.8	54.9	51.2	19.5	-11.2	-16.7	5.3	1.7	0.46	-0.90	-0.94	0.17	0.85
Hungary	45.5	53.9	30.7	46.3	44.9	52.3	8.4	-14.8	0.9	-0.5	6.9	0.24	-0.54	0.63	-0.07	0.02
Latvia	48.8	58.4	51.5	35.0	55.4	44.2	9.6	2.7	-13.8	6.6	-4.6	0.36	0.20	-0.20	0.00	0.34
Lithuania	49.6	50.0	56.8	40.5	47.6	53.9	0.4	7.2	-9.2	-2.0	4.3	-0.43	0.81	-0.52	0.00	0.42
Slovak Republic	45.6	58.6	63.6	21.3	44.0	44.5	13.1	18.0	-24.3	-1.6	-1.1	-0.73	0.31	-0.13	-0.01	0.28
Slovenia	46.1	42.4	55.8	32.4	46.6	53.9	-3.7	9.7	-13.7	0.5	7.8	-0.56	-0.16	-0.63	0.22	0.48

Table C.2

Age characteristics by quintile

	Share of 'old workers' in total employment	Share of 'old' in quintiles (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	7.9	10.7	5.2	5.9	6.2	10.4	2.9	-2.7	-2.0	-1.7	2.5	-0.22	0.00	0.04	0.12	0.06
Belgium	7.6	6.9	6.3	6.7	6.9	10.2	-0.7	-1.2	-0.8	-0.6	2.6	-0.06	-0.05	0.01	0.11	-0.03
Denmark	13.3	12.9	13.3	12.8	11.8	16.0	-0.5	-0.1	-0.5	-1.6	2.7	-0.19	0.12	0.11	-0.05	-0.04
Finland	12.1	13.0	11.7	9.6	11.4	14.6	0.9	-0.4	-2.5	-0.7	2.5	-0.22	0.38	-0.13	-0.20	0.17
France	8.4	8.1	9.1	6.8	7.4	10.1	-0.3	0.7	-1.6	-1.0	1.8	-0.08	-0.21	0.06	0.05	0.14
Germany	12.9	13.9	12.0	10.9	10.8	16.5	1.0	-0.9	-1.9	-2.1	3.6	-0.11	0.04	-0.02	0.06	-0.01
Ireland	11.3	8.5	8.9	18.3	10.9	10.1	-2.8	-2.5	6.9	-0.4	-1.2	0.12	0.31	-0.21	-0.19	0.00
Italy	10.8	12.3	11.7	8.3	8.1	14.7	1.4	0.9	-2.5	-2.8	3.8	-0.20	-0.08	-0.12	0.12	0.40
Luxembourg	6.8	5.5	4.8	6.1	7.9	9.7	-1.3	-2.0	-0.7	1.0	2.9	-0.06	-0.07	-0.19	0.11	0.03
Netherlands	9.1	6.7	8.0	9.2	8.1	13.3	-2.4	-1.1	0.1	-1.0	4.1	-0.22	0.06	0.05	-0.07	0.19
Portugal	17.6	11.5	36.0	10.4	11.7	13.8	-6.1	18.5	-7.2	-5.9	-3.8	-0.33	0.84	-0.41	-0.21	-0.21
Spain	10.8	10.5	12.5	8.4	10.2	12.0	-0.3	1.7	-2.4	-0.6	1.2	-0.05	-0.52	0.19	0.14	0.23
Sweden	18.1	19.6	16.9	16.7	17.5	19.5	1.5	-1.2	-1.5	-0.6	1.4	-0.42	0.01	0.26	0.01	0.22
United Kingdom	13.5	15.1	14.5	13.2	12.7	11.9	1.6	1.0	-0.3	-0.8	-1.6	-0.09	0.10	-0.08	-0.03	0.14
Cyprus	13.6	14.4	12.7	12.4	18.4	10.6	0.8	-0.8	-1.2	4.8	-3.0	0.04	0.01	-0.20	0.30	-0.08
Czech Republic	11.2	11.6	8.9	10.1	11.4	14.1	0.4	-2.3	-1.1	0.2	3.0	-0.08	-0.24	0.28	0.07	-0.01
Estonia	16.3	20.3	12.1	15.6	14.0	18.7	4.0	-4.2	-0.7	-2.3	2.4	0.30	-0.21	0.51	-0.10	-0.53
Hungary	7.7	5.6	6.9	7.9	6.8	10.6	-2.1	-0.8	0.3	-0.9	2.9	-0.15	-0.02	-0.14	0.06	0.15
Lithuania	12.9	17.6	9.0	11.5	11.9	14.3	4.7	-3.9	-1.4	-1.0	1.4	-0.01	0.17	0.11	0.01	-0.17
Slovenia	8.3	3.0	4.0	4.6	22.3	7.3	-5.3	-4.3	-3.7	14.0	-1.0	-0.01	-0.02	0.01	-0.12	0.15
Slovak Republic	5.7	4.6	3.8	6.1	5.5	8.3	-1.1	-1.9	0.4	-0.2	2.6	-0.02	-0.06	0.06	-0.04	0.01

Table C.3

Full and part-time employment characteristics by quintile

	Share of full-time workers in total employment	Share of full-time workers by quintiles (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	82.8	77.4	79.5	86.2	85.1	86.4	-5.3	-3.3	3.4	2.3	3.7	-0.10	-0.28	0.06	0.05	0.27
Belgium	81.7	85.5	68.2	84.8	85.4	84.5	3.8	-13.5	3.1	3.7	2.9	-0.22	-0.06	0.03	-0.10	0.34
Denmark	78.4	58.1	83.1	89.4	72.7	90.9	-20.3	4.7	11.0	-5.7	12.5	-0.51	0.09	-0.14	0.27	-0.10
Finland	87.6	78.0	86.8	91.6	91.6	91.8	-9.6	-0.7	4.0	4.0	4.2	-0.33	0.00	-0.13	0.10	0.17
France	83.1	68.7	84.4	87.4	85.0	89.0	-14.4	1.3	4.4	2.0	5.9	-0.23	0.24	0.07	-0.03	-0.01
Germany	80.4	67.4	78.4	87.0	80.3	87.3	-13.0	-2.0	6.6	-0.1	6.9	-0.58	-0.30	0.25	0.06	0.49
Greece	95.1	91.6	92.1	95.7	97.9	98.4	-3.5	-2.9	0.6	2.8	3.3	0.05	-0.26	0.02	-0.01	0.08
Ireland	84.6	64.9	84.6	87.3	94.8	89.7	-19.7	0.0	2.7	10.2	5.1	-0.73	-0.16	-0.11	0.45	-0.02
Italy	91.2	87.1	90.9	92.1	92.3	93.9	-4.1	-0.3	0.8	1.0	2.7	-0.39	0.31	-0.13	-0.31	0.45
Luxembourg	88.6	85.8	88.0	87.6	89.1	92.2	-2.8	-0.6	-1.0	0.5	3.6	-0.05	-0.23	-0.22	0.20	0.12
Portugal	90.8	92.9	77.5	95.3	95.7	94.9	2.1	-13.3	4.6	4.9	4.1	0.11	-0.10	0.15	-0.09	0.04
Netherlands	59.4	40.1	49.4	76.1	62.3	68.0	-19.2	-9.9	16.7	2.9	8.7	0.08	-0.16	0.44	-0.08	0.08
Spain	91.4	82.5	90.3	94.4	94.4	94.4	-9.0	-1.1	3.0	3.0	3.0	-0.44	-0.13	0.20	0.01	0.16
Sweden	76.7	74.2	76.4	74.7	72.3	86.6	-2.5	-0.3	-2.0	-4.4	9.9	0.17	-0.09	-0.19	0.09	-0.33
United Kingdom	74.7	49.1	68.3	84.2	86.4	85.2	-25.6	-6.4	9.5	11.7	10.5	-0.08	0.08	-0.21	-0.07	0.00
Cyprus	91.8	86.0	90.7	94.6	92.5	94.7	-5.8	-1.1	2.9	0.7	2.9	0.49	-0.36	0.21	-0.14	-0.19
Czech Republic	94.8	90.6	93.3	97.0	96.0	96.0	-4.2	-1.5	2.2	1.2	1.2	0.05	0.21	-0.15	-0.08	-0.16
Estonia	92.3	87.3	94.6	94.5	92.7	92.8	-5.0	2.3	2.2	0.4	0.6	0.08	-0.01	0.09	-0.11	-0.03
Hungary	96.0	94.9	95.9	95.8	97.0	96.5	-1.1	-0.1	-0.3	1.0	0.5	-0.15	0.03	-0.04	0.05	0.08
Latvia	90.2	90.1	82.7	92.3	92.7	94.9	-0.2	-7.5	2.1	2.4	4.7	-0.11	0.01	0.17	-0.38	-0.24
Lithuania	92.2	88.2	90.8	93.7	93.9	94.8	-4.0	-1.4	1.5	1.6	2.6	0.57	0.01	0.02	-0.48	-0.22
Slovak Republic	97.7	96.0	96.3	98.8	98.8	98.6	-1.8	-1.5	1.0	1.1	0.8	0.15	-0.01	0.01	-0.05	-0.09
Slovenia	92.8	95.7	92.0	95.3	86.3	94.3	2.9	-0.8	2.6	-6.4	1.5	0.11	-0.63	0.23	-0.23	0.40

Table C.3 (contd.)

	Share of part-time workers in total employment	Share of part-time workers quintiles (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	17.2	22.6	20.5	13.8	14.9	13.6	5.3	3.3	-3.4	-2.3	-3.7	0.10	0.28	-0.06	-0.05	-0.27
Belgium	18.3	14.5	31.8	15.2	14.6	15.5	-3.8	13.5	-3.1	-3.7	-2.9	0.22	0.06	-0.03	0.10	-0.34
Denmark	21.6	41.9	16.9	10.6	27.3	9.1	20.3	-4.7	-11.0	5.7	-12.5	0.51	-0.09	0.14	-0.27	0.10
Finland	12.4	22.0	13.2	8.4	8.4	8.2	9.6	0.7	-4.0	-4.0	-4.2	0.33	0.00	0.13	-0.10	-0.17
France	16.9	31.3	15.6	12.6	15.0	11.0	14.4	-1.3	-4.4	-2.0	-5.9	0.23	-0.24	-0.07	0.03	0.01
Germany	19.6	32.6	21.6	13.0	19.7	12.7	13.0	2.0	-6.6	0.1	-6.9	0.58	0.30	-0.25	-0.06	-0.49
Greece	4.9	8.4	7.9	4.3	2.1	1.6	3.5	2.9	-0.6	-2.8	-3.3	-0.05	0.26	-0.02	0.01	-0.08
Ireland	15.4	35.1	15.4	12.7	5.2	10.3	19.7	0.0	-2.7	-10.2	-5.1	0.73	0.16	0.11	-0.45	0.02
Italy	8.8	12.9	9.1	7.9	7.7	6.1	4.1	0.3	-0.8	-1.0	-2.7	0.39	-0.31	0.13	0.31	-0.45
Luxembourg	11.4	14.2	12.0	12.4	10.9	7.8	2.8	0.6	1.0	-0.5	-3.6	0.05	0.23	0.22	-0.20	-0.12
Netherlands	40.6	59.9	50.6	23.9	37.7	32.0	19.2	9.9	-16.7	-2.9	-8.7	-0.08	0.16	-0.44	0.08	-0.08
Portugal	9.2	7.1	22.5	4.7	4.3	5.1	-2.1	13.3	-4.6	-4.9	-4.1	-0.11	0.10	-0.15	0.09	-0.04
Spain	8.6	17.5	9.7	5.6	5.6	5.6	9.0	1.1	-3.0	-3.0	-3.0	0.44	0.13	-0.20	-0.01	-0.16
Sweden	23.3	25.8	23.6	25.3	27.7	13.4	2.5	0.3	2.0	4.4	-9.9	-0.17	0.09	0.19	-0.09	0.33
United Kingdom	25.3	50.9	31.7	15.8	13.6	14.8	25.6	6.4	-9.5	-11.7	-10.5	0.08	-0.08	0.21	0.07	0.00
Cyprus	8.2	14.0	9.3	5.4	7.5	5.3	5.8	1.1	-2.9	-0.7	-2.9	-0.49	0.36	-0.21	0.14	0.19
Czech Republic	5.2	9.4	6.7	3.0	4.0	4.0	4.2	1.5	-2.2	-1.2	-1.2	-0.05	-0.21	0.15	0.08	0.16
Estonia	7.7	12.7	5.4	5.5	7.3	7.2	5.0	-2.3	-2.2	-0.4	-0.6	-0.08	0.01	-0.09	0.11	0.03
Hungary	4.0	5.1	4.1	4.2	3.0	3.5	1.1	0.1	0.3	-1.0	-0.5	0.15	-0.03	0.04	-0.05	-0.08
Latvia	9.8	9.9	17.3	7.7	7.3	5.1	0.2	7.5	-2.1	-2.4	-4.7	0.11	-0.01	-0.17	0.38	0.24
Lithuania	7.8	11.8	9.2	6.3	6.1	5.2	4.0	1.4	-1.5	-1.6	-2.6	-0.57	-0.01	-0.02	0.48	0.22
Slovak Republic	2.3	4.0	3.7	1.2	1.2	1.4	1.8	1.5	-1.0	-1.1	-0.8	-0.15	0.01	-0.01	0.05	0.09
Slovenia	7.2	4.3	8.0	4.7	13.7	5.7	-2.9	0.8	-2.6	6.4	-1.5	-0.11	0.63	-0.23	0.23	-0.40

Table C.4

Permanent and temporary employment characteristics by quintile

	Share of permanent workers in total employment	Share of permanent workers by quintiles (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	92.1	89.8	91.4	93.7	91.9	94.4	-2.3	-0.7	1.6	-0.2	2.3	-0.12	-0.03	0.08	-0.04	0.12
Belgium	92.0	91.2	90.7	92.8	94.5	91.3	-0.8	-1.3	0.8	2.5	-0.6	-0.45	-0.18	0.06	0.31	0.21
Denmark	89.8	86.1	91.2	89.7	89.1	93.4	-3.7	1.4	-0.2	-0.8	3.5	0.27	-0.09	-0.29	-0.04	0.03
Finland	82.4	78.5	80.1	83.8	85.0	85.2	-3.9	-2.3	1.5	2.6	2.8	-0.50	-0.13	0.20	0.13	0.25
France	86.8	84.0	82.6	88.0	88.1	90.9	-2.8	-4.2	1.2	1.3	4.1	-0.15	0.01	-0.03	-0.14	0.19
Germany	88.6	87.7	88.9	87.3	88.5	90.8	-0.9	0.2	-1.4	-0.2	2.1	-0.07	-0.06	-0.09	0.01	0.15
Ireland	93.8	88.6	94.4	93.8	96.4	95.4	-5.2	0.6	0.1	2.6	1.7	0.29	-0.10	0.21	-0.30	-0.23
Italy	90.3	86.5	89.1	90.9	93.6	91.2	-3.7	-1.2	0.6	3.4	1.0	-0.10	0.15	-0.16	0.00	-0.01
Greece	87.1	82.3	81.5	84.9	92.5	94.6	-4.8	-5.6	-2.2	5.3	7.5	0.06	-0.22	0.30	-0.21	-0.02
Luxembourg	96.4	96.5	96.9	95.2	96.8	96.8	0.0	0.4	-1.2	0.3	0.3	0.13	0.17	-0.64	0.10	0.18
Netherlands	88.0	80.7	84.1	90.5	92.0	92.5	-7.4	-3.9	2.5	4.0	4.4	-0.38	-0.07	0.12	0.19	0.21
Portugal	82.4	83.6	78.1	81.3	82.7	86.4	1.2	-4.3	-1.1	0.3	4.0	0.59	0.01	-0.16	-0.15	-0.17
Sweden	85.2	83.5	82.7	86.5	84.6	89.1	-1.7	-2.6	1.3	-0.6	3.9	-0.18	-0.45	0.10	0.12	0.21
United Kingdom	93.5	93.0	92.8	93.8	95.2	92.6	-0.4	-0.7	0.3	1.7	-0.9	0.03	-0.04	-0.02	-0.04	0.06
Cyprus	88.6	74.7	87.7	93.1	94.8	92.5	-13.9	-0.9	4.5	6.2	4.0	-1.74	0.75	0.31	0.90	0.05
Czech Republic	91.8	86.8	90.0	93.4	94.3	93.4	-5.0	-1.8	1.6	2.5	1.6	-0.15	-0.29	-0.17	0.17	0.26
Estonia	97.5	95.4	96.7	97.7	98.8	99.2	-2.1	-0.8	0.2	1.3	1.7	0.09	0.06	-0.22	-0.26	0.25
Hungary	92.9	91.3	90.8	91.9	95.5	95.1	-1.6	-2.1	-1.0	2.6	2.2	0.11	-0.08	-0.17	0.08	0.09
Latvia	91.1	89.2	87.4	88.7	94.9	95.8	-1.9	-3.7	-2.4	3.9	4.8	-0.37	-0.15	0.38	0.09	-0.19
Lithuania	92.1	81.0	92.8	91.9	97.0	98.4	-11.0	0.7	-0.2	5.0	6.4	-1.07	0.35	0.18	0.17	0.09
Slovak Republic	95.4	92.3	93.2	95.6	97.8	97.7	-3.0	-2.2	0.2	2.4	2.3	-0.08	0.05	-0.17	0.16	0.05
Slovenia	87.0	85.8	83.7	87.6	88.5	88.9	-1.2	-3.2	0.6	1.5	1.9	0.05	-0.56	0.11	0.11	0.20

Table C.4 (contd.)

	Share of temporary workers in total employment	Share of temporary workers by quintiles (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	7.9	10.2	8.6	6.3	8.1	5.6	2.3	0.7	-1.6	0.2	-2.3	0.12	0.03	-0.08	0.04	-0.12
Belgium	8.0	8.8	9.3	7.2	5.5	8.7	0.8	1.3	-0.8	-2.5	0.6	0.45	0.18	-0.06	-0.31	-0.21
Denmark	10.2	13.9	8.8	10.3	10.9	6.6	3.7	-1.4	0.2	0.8	-3.5	-0.27	0.09	0.29	0.04	-0.03
Finland	17.6	21.5	19.9	16.2	15.0	14.8	3.9	2.3	-1.5	-2.6	-2.8	0.50	0.13	-0.20	-0.13	-0.25
France	13.2	16.0	17.4	12.0	11.9	9.1	2.8	4.2	-1.2	-1.3	-4.1	0.15	-0.01	0.03	0.14	-0.19
Germany	11.4	12.3	11.1	12.7	11.5	9.2	0.9	-0.2	1.4	0.2	-2.1	0.07	0.06	0.09	-0.01	-0.15
Greece	12.9	17.7	18.5	15.1	7.5	5.4	4.8	5.6	2.2	-5.3	-7.5	-0.06	0.22	-0.30	0.21	0.02
Ireland	6.2	11.4	5.6	6.2	3.6	4.6	5.2	-0.6	-0.1	-2.6	-1.7	-0.29	0.10	-0.21	0.30	0.23
Italy	9.7	13.5	10.9	9.1	6.4	8.8	3.7	1.2	-0.6	-3.4	-1.0	0.10	-0.15	0.16	0.00	0.01
Luxembourg	3.6	3.5	3.1	4.8	3.2	3.2	0.0	-0.4	1.2	-0.3	-0.3	-0.13	-0.17	0.64	-0.10	-0.18
Netherlands	12.0	19.3	15.9	9.5	8.0	7.5	7.4	3.9	-2.5	-4.0	-4.4	0.38	0.07	-0.12	-0.19	-0.21
Portugal	17.6	16.4	21.9	18.7	17.3	13.6	-1.2	4.3	1.1	-0.3	-4.0	-0.59	-0.01	0.16	0.15	0.17
Spain	32.3	42.7	42.2	39.9	24.6	17.1	10.3	9.9	7.6	-7.7	-15.2	-0.07	-0.45	-0.30	0.16	0.72
Sweden	14.8	16.5	17.3	13.5	15.4	10.9	1.7	2.6	-1.3	0.6	-3.9	0.18	0.45	-0.10	-0.12	-0.21
United Kingdom	6.5	7.0	7.2	6.2	4.8	7.4	0.4	0.7	-0.3	-1.7	0.9	-0.03	0.04	0.02	0.04	-0.06
Cyprus	11.4	25.3	12.3	6.9	5.2	7.5	13.9	0.9	-4.5	-6.2	-4.0	1.74	-0.75	-0.31	-0.90	-0.05
Czech Republic	8.2	13.2	10.0	6.6	5.7	6.6	5.0	1.8	-1.6	-2.5	-1.6	0.15	0.29	0.17	-0.17	-0.26
Estonia	2.5	4.6	3.3	2.3	1.2	0.8	2.1	0.8	-0.2	-1.3	-1.7	-0.09	-0.06	0.22	0.26	-0.25
Hungary	7.1	8.7	9.2	8.1	4.5	4.9	1.6	2.1	1.0	-2.6	-2.2	-0.11	0.08	0.17	-0.08	-0.09
Latvia	8.9	10.8	12.6	11.3	5.1	4.2	1.9	3.7	2.4	-3.9	-4.8	0.37	0.15	-0.38	-0.09	0.19
Lithuania	7.9	19.0	7.2	8.1	3.0	1.6	11.0	-0.7	0.2	-5.0	-6.4	1.07	-0.35	-0.18	-0.17	-0.09
Slovak Republic	4.6	7.7	6.8	4.4	2.2	2.3	3.0	2.2	-0.2	-2.4	-2.3	0.08	-0.05	0.17	-0.16	-0.05
Slovenia	13.0	14.2	16.3	12.4	11.5	11.1	1.2	3.2	-0.6	-1.5	-1.9	-0.05	0.56	-0.11	-0.11	-0.20

Table C.5

Migrant characteristics by quintile

	Share of EU-citizens in total employment	Share of EU-citizens by quintile (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	92.4	85.7	91.2	93.2	94.9	97.3	-6.6	-1.2	0.9	2.5	4.9	0.00	-0.07	-0.03	0.03	-0.01
Belgium	98.3	97.4	97.8	98.5	99.1	98.7	-0.9	-0.5	0.2	0.8	0.4	-0.05	0.00	0.04	0.00	-0.01
Denmark	98.4	97.4	98.5	98.8	98.8	98.8	-1.1	0.0	0.3	0.4	0.4	-0.21	0.09	0.07	-0.04	0.11
Finland	99.2	99.0	99.1	99.3	99.3	99.4	-0.2	-0.1	0.1	0.1	0.2	-0.02	0.00	-0.03	0.02	0.02
France	97.1	95.2	95.8	97.6	98.0	98.6	-1.9	-1.3	0.5	0.9	1.5	-0.07	0.02	0.04	0.02	-0.03
Germany	94.6	90.7	92.8	94.2	97.3	97.6	-4.0	-1.8	-0.4	2.7	2.9	-0.08	0.06	0.06	-0.02	-0.08
Greece	96.1	94.7	95.0	93.1	98.8	99.2	-1.4	-1.1	-3.0	2.7	3.0	-0.26	-0.10	-0.40	0.39	0.46
Ireland	98.8	97.9	98.7	99.4	99.1	98.7	-0.9	0.0	0.6	0.3	-0.1	-0.51	-0.09	0.28	0.20	0.07
Italy																
Luxembourg	96.3	93.3	95.4	97.5	97.6	97.8	-3.0	-0.9	1.3	1.3	1.5	-0.18	-0.06	-0.05	0.20	0.02
Netherlands	98.2	96.5	97.8	98.4	99.1	99.1	-1.7	-0.4	0.2	0.9	0.9	0.01	0.01	-0.06	0.02	0.05
Portugal	97.9	97.8	97.4	96.8	98.2	99.1	-0.1	-0.5	-1.2	0.3	1.1	-0.06	-0.26	-0.17	0.08	0.29
Spain	96.6	92.6	95.2	96.8	98.4	99.0	-4.0	-1.4	0.2	1.8	2.4	-0.97	-0.48	-0.01	0.43	0.74
Sweden	98.0	96.5	98.2	98.7	98.3	98.5	-1.5	0.2	0.7	0.3	0.5	-0.09	0.00	0.03	-0.01	0.02
United Kingdom	97.6	96.5	98.0	98.3	97.8	97.2	-1.1	0.5	0.7	0.3	-0.4	-0.09	0.01	0.04	0.00	0.04
Cyprus	93.7	82.5	94.4	97.2	97.1	97.4	-11.2	0.7	3.5	3.4	3.7	-1.82	0.41	0.79	0.40	0.38
Czech Republic	99.3	99.2	99.2	99.4	99.5	99.3	-0.2	-0.1	0.1	0.2	0.0	-0.01	0.00	0.01	0.00	-0.01
Estonia	76.4	75.6	73.3	74.5	77.1	81.8	-0.8	-3.1	-1.9	0.7	5.4	-0.02	-0.12	-1.46	0.72	0.72
Hungary	99.4	99.1	99.4	99.6	99.6	99.5	-0.3	-0.1	0.1	0.2	0.1	-0.09	-0.09	0.05	0.08	0.05
Latvia																
Lithuania	99.3	99.4	99.4	99.4	99.1	99.2	0.1	0.0	0.1	-0.3	-0.1	-0.12	0.04	0.06	-0.08	0.09
Slovak Republic	99.8	99.8	99.8	99.9	99.9	99.8	-0.1	-0.1	0.1	0.1	-0.1	0.07	0.05	-0.05	-0.03	-0.03
Slovenia	99.7	99.7	99.8	99.5	99.9	99.8	-0.1	0.1	-0.2	0.1	0.1	0.11	0.01	-0.14	-0.07	0.05

Table C.5 (contd.)

	Share of Non-EU citizens in total employment	Share of Non-EU citizens by quintile (mean over total period)					Deviations from overall shares					Change in deviations 2000 – 2005 (mean over period)				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	7.6	14.3	8.8	6.8	5.1	2.7	6.6	1.2	-0.9	-2.5	-4.9	0.00	0.07	0.03	-0.03	0.01
Belgium	1.7	2.6	2.2	1.5	0.9	1.3	0.9	0.5	-0.2	-0.8	-0.4	0.05	0.00	-0.04	0.00	0.01
Denmark	1.6	2.6	1.5	1.2	1.2	1.2	1.1	0.0	-0.3	-0.4	-0.4	0.21	-0.09	-0.07	0.04	-0.11
Finland	0.8	1.0	0.9	0.7	0.7	0.6	0.2	0.1	-0.1	-0.1	-0.2	0.02	0.00	0.03	-0.02	-0.02
France	2.9	4.8	4.2	2.4	2.0	1.4	1.9	1.3	-0.5	-0.9	-1.5	0.07	-0.02	-0.04	-0.02	0.03
Germany	5.4	9.3	7.2	5.8	2.7	2.4	4.0	1.8	0.4	-2.7	-2.9	0.08	-0.06	-0.06	0.02	0.08
Greece	3.9	5.3	5.0	6.9	1.2	0.8	1.4	1.1	3.0	-2.7	-3.0	0.26	0.10	0.40	-0.39	-0.46
Ireland	1.2	2.1	1.3	0.6	0.9	1.3	0.9	0.0	-0.6	-0.3	0.1	0.51	0.09	-0.28	-0.20	-0.07
Italy																
Luxembourg	3.7	6.7	4.6	2.5	2.4	2.2	3.0	0.9	-1.3	-1.3	-1.5	0.18	0.06	0.05	-0.20	-0.02
Netherlands	1.8	3.5	2.2	1.6	0.9	0.9	1.7	0.4	-0.2	-0.9	-0.9	-0.01	-0.01	0.06	-0.02	-0.05
Portugal	2.1	2.2	2.6	3.2	1.8	0.9	0.1	0.5	1.2	-0.3	-1.1	0.06	0.26	0.17	-0.08	-0.29
Spain	3.4	7.4	4.8	3.2	1.6	1.0	4.0	1.4	-0.2	-1.8	-2.4	0.97	0.48	0.01	-0.43	-0.74
Sweden	2.0	3.5	1.8	1.3	1.7	1.5	1.5	-0.2	-0.7	-0.3	-0.5	0.09	0.00	-0.03	0.01	-0.02
United Kingdom	2.4	3.5	2.0	1.7	2.2	2.8	1.1	-0.5	-0.7	-0.3	0.4	0.09	-0.01	-0.04	0.00	-0.04
Cyprus	6.3	17.5	5.6	2.8	2.9	2.6	11.2	-0.7	-3.5	-3.4	-3.7	1.82	-0.41	-0.79	-0.40	-0.38
Czech Republic	0.7	0.8	0.8	0.6	0.5	0.7	0.2	0.1	-0.1	-0.2	0.0	0.01	0.00	-0.01	0.00	0.01
Estonia	23.6	24.4	26.7	25.5	22.9	18.2	0.8	3.1	1.9	-0.7	-5.4	0.02	0.12	1.46	-0.72	-0.72
Hungary	0.6	0.9	0.6	0.4	0.4	0.5	0.3	0.1	-0.1	-0.2	-0.1	0.09	0.09	-0.05	-0.08	-0.05
Latvia																
Lithuania	0.7	0.6	0.6	0.6	0.9	0.8	-0.1	0.0	-0.1	0.3	0.1	0.12	-0.04	-0.06	0.08	-0.09
Slovak Republic	0.2	0.2	0.2	0.1	0.1	0.2	0.1	0.1	-0.1	-0.1	0.1	-0.07	-0.05	0.05	0.03	0.03
Slovenia	0.3	0.3	0.2	0.5	0.1	0.2	0.1	-0.1	0.2	-0.1	-0.1	-0.11	-0.01	0.14	0.07	-0.05

Table C.6

Hours worked by quintile

	Share of workers > 48 in total employment	Share of workers >48 in quintiles (mean over total period)					Mean of deviations (total period)					Change in deviations 2000-2005				
		Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5	Q1	Q2	Q3	Q4	Q5
Austria	11.1	19.0	3.4	7.6	6.6	16.8	7.9	-7.6	-3.5	-4.5	5.7	0.01	-0.76	0.71	0.50	-0.37
Belgium	10.4	8.0	4.0	8.1	10.4	19.3	-2.4	-6.4	-2.2	0.0	8.9	0.11	-0.02	-0.06	0.08	-0.13
Denmark	10.1	7.3	6.2	9.3	10.0	17.8	-2.7	-3.9	-0.8	-0.1	7.7	-0.19	0.06	-0.11	0.05	-0.02
Finland	10.1	12.9	4.2	7.6	7.6	17.8	2.7	-5.9	-2.5	-2.5	7.7	-0.41	0.30	0.13	-0.15	-0.01
France	10.6	5.9	12.1	8.4	7.9	17.6	-4.7	1.5	-2.2	-2.7	7.0	-0.48	0.25	-0.07	-0.13	0.27
Germany	10.7	10.9	7.0	6.3	8.5	20.0	0.1	-3.7	-4.4	-2.2	9.3	-0.23	-0.07	0.13	-0.07	0.07
Greece	35.0	45.6	25.7	36.0	30.5	32.3	10.7	-9.3	1.1	-4.5	-2.7	0.28	-0.23	0.19	0.18	0.11
Ireland	13.3	6.9	8.0	21.1	19.4	10.5	-6.4	-5.3	7.8	6.1	-2.9	0.18	0.30	-0.64	-0.47	0.58
Italy	18.5	20.9	30.4	12.6	10.8	17.1	2.4	11.9	-5.9	-7.7	-1.4	-0.50	-0.13	0.08	0.30	0.39
Luxembourg	6.7	9.3	2.8	5.2	9.6	6.8	2.5	-3.9	-1.5	2.8	0.1	-0.56	0.23	0.01	-0.11	0.29
Netherlands	6.0	1.7	2.8	9.9	4.3	10.9	-4.3	-3.2	3.9	-1.7	4.9	0.26	0.07	-0.02	0.02	-0.26
Portugal	16.0	10.1	25.9	13.7	9.5	17.5	-5.9	9.9	-2.3	-6.5	1.5	0.30	-0.82	-0.01	0.24	0.23
Spain	14.7	9.2	22.6	10.1	12.6	18.0	-5.5	7.9	-4.7	-2.1	3.3	0.09	-0.59	0.53	0.12	-0.02
Sweden	6.0	6.7	4.7	4.5	6.5	7.0	0.7	-1.3	-1.5	0.6	1.1	-0.10	0.17	-0.13	0.00	0.07
United Kingdom	20.9	11.6	17.2	22.3	24.6	28.8	-9.3	-3.7	1.4	3.7	7.9	0.09	0.11	-0.29	-0.09	0.00
Cyprus	16.3	18.1	21.8	15.3	15.4	11.9	1.8	5.5	-1.1	-0.9	-4.5	-0.59	-0.63	0.46	0.30	0.48
Czech Republic	18.5	12.1	12.6	23.8	18.9	24.0	-6.4	-5.9	5.3	0.4	5.5	0.43	-0.01	-0.12	0.06	-0.39
Estonia	13.2	12.8	12.7	20.6	8.8	11.0	-0.5	-0.6	7.4	-4.5	-2.3	0.22	-0.18	0.03	0.16	-0.12
Hungary	9.8	10.1	12.0	9.4	9.6	7.9	0.3	2.2	-0.4	-0.2	-1.9	-0.19	0.03	-0.01	0.02	0.12
Lithuania	6.8	11.7	8.4	6.4	3.2	3.5	5.0	1.6	-0.3	-3.6	-3.3	-2.68	-0.18	0.44	1.33	1.12
Latvia	21.8	30.3	24.9	23.5	16.5	13.4	8.6	3.1	1.7	-5.3	-8.4	-0.77	-1.21	0.74	0.41	1.25
Slovak Republic	12.6	10.6	12.8	14.2	10.4	14.9	-1.9	0.3	1.6	-2.2	2.3	0.27	-0.17	0.18	0.15	-0.49
Slovenia	16.0	8.2	12.7	17.0	30.3	11.7	-7.8	-3.3	1.0	14.3	-4.3	0.45	-0.10	0.59	-1.21	0.32

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