

Chapter 3

THE CHARACTERISTICS AND QUALITY OF SERVICE SECTOR JOBS

Summary

The share of employment in services continued to rise in virtually all OECD countries over the 1990s, approaching nearly three-quarters of all jobs in several countries. This has coincided with significant change in the types of jobs being created. In several countries, the incidence of part-time and temporary work rose and, in some, there was a decline in job stability. A few countries also experienced a long-run rise in earnings inequality. These developments have led to a vigorous debate about the quality of service sector jobs. Therefore, this chapter explores the relationship between changes in employment by sector and changes in the characteristics and quality of the jobs that are being created.

Jobs vary considerably across sectors when compared in terms of the incidence of part-time and temporary work arrangements, average length of job tenure, and the incidence of training. But there is also a striking variation in these job characteristics across countries and over time. The fact that differences in employment structures account for relatively little of this variation suggests that other factors play an important role. These factors include various institutional settings such as the strength of employment protection legislation, the degree of collective bargaining coverage, the existence of statutory wage floors, etc., as well as the distribution of worker characteristics within each country by age, gender and skill level.

Comparisons of job quality based on measures of working conditions, job satisfaction and pay, reveal no simple dichotomy between the goods-producing sector and the service sector. Good jobs are not primarily located in the former and bad jobs in the latter. Jobs in hotels and restaurants generally rank poorly across a range of job quality measures. On the other hand, jobs in the goods-producing sector are more likely to be associated with poor working conditions than in many service industries and with lower levels of job satisfaction.

A number of key findings emerge from the analysis of employment levels and growth by wage level. First, the higher overall employment rate in the United States than in most other OECD countries cannot be solely attributed to a “surplus” of low-paying service jobs; in most instances, it has more high-paying service jobs as well. Second, while strong growth in service sector employment in the United States over the 1990s was accompanied by some growth in low-paid jobs, a much larger expansion took place in jobs in relatively high-paying occupations and industries. Third, Europe experienced slower growth in employment at all wage levels, but with considerable variation across countries. As in the United States, employment grew fastest in high-paying jobs in most European countries.

The configuration of policies that will be appropriate for each country in terms of addressing issues of job quality will depend on its initial situation. Countries with a relatively high incidence of jobs involving low pay and poor working conditions can provide income supplements for low-paid workers and can seek to reduce differences in entitlements between workers in “standard” and “non-standard” jobs. Ultimately policies are required which encourage individuals and firms to invest more in skills acquisition. On the other hand, for countries wishing to improve their employment performance, the solution is not simply to stimulate job creation in poorly-paid service sector jobs but to implement a broad range of policies designed to stimulate employment more generally.

Introduction

As documented in last year's chapter on the service economy [OECD (2000)], the share of employment in services continued to rise in virtually all OECD countries over the 1990s, approaching nearly three-quarters of all jobs in several countries. This has coincided with a number of significant changes in the types of jobs that are being created which has led to a vigorous debate about the quality of service sector jobs. In many countries, the incidence of part-time and temporary work has risen over time [OECD (1996, 1999)] and, in some, there has been a decline in job stability [OECD (1997)]. A few countries have also experienced a long-run rise in earnings inequality, most notably in the United States [OECD (1996)].

Last year's chapter on services also included a sectoral analysis of the characteristics of workers by age, gender and educational attainment. This chapter is mainly concerned with the characteristics of jobs as such, and how they have been affected by the shift in employment from manufacturing to services. Of course, both job and worker characteristics are intimately related. In fact, perceptions about job quality are likely to be strongly influenced by how well workers are matched with their job. That is, on the extent to which a job's skill requirements, working arrangements, pay and hours of work correspond to the jobholder's own skills, preferences and expectations. Thus, the same job may be considered bad by one worker but good by another worker. This interrelationship between the characteristics of workers and the characteristics of their jobs means that any measure of job quality needs to be interpreted with caution before a job can be classified as being either "bad" or "good". For example, a part-time job may involve either a voluntary or involuntary choice and so in-and-of itself is neither a good nor a bad job.

Given these difficulties in measuring job quality, the main purpose of this chapter is not simply to identify poor jobs as such, and where they are found, but to explore more generally the relationship between changes in the distribution of employment by sector and changes in the types of jobs that are being created. There are a number of questions that the chapter seeks to answer. Are there systematic differences in the types of characteristics that are associated with jobs in each sector? How has the growth of service sector employment contributed to differences over time and across countries in the characteristics and quality of jobs? Is there a trade-off between job quality and employment performance?

As a starting point, the first section surveys the current structure of goods-producing and service sector jobs according to a number of objective job characteristics, including the incidence of part-time and temporary work,

average job tenure and the incidence of training. It then examines the extent to which differences in these job characteristics between countries and over time can be explained by variations in the distribution of employment by sector. As discussed in the section, there are a number of potential problems in using these job characteristics as proxy measures of job quality. Therefore, job quality is measured more directly in Section II based on the perceptions of jobholders themselves of their working conditions and job satisfaction. Using these measures, the quality of jobs is compared between sectors, but within countries. A complementary and perhaps broader way of measuring job quality is to simply look at how much a job pays. Section III first examines earnings differentials by sector. This is followed by a comparison across countries of employment levels and job growth in terms of whether jobs are low-paid, medium-paid or high-paid. The final section draws together the main results and considers some implications for policy.

Main findings

The chapter's main findings are:

- The incidence of part-time work is substantially higher in the service sector than in the goods-producing sector, but the incidence of temporary work is more uniform across both sectors. Average job tenure varies considerably within the service sector, but on the whole is somewhat lower than in the goods-producing sector. The incidence of continuing vocational training, on the other hand, is higher in the service sector, especially in the producer and social service sectors.
- Differences in employment structure appear to account for only a small part of the large variation across countries and over time in the overall incidence of part-time and temporary work and in average job tenure. Other factors, such as institutional settings and workforce characteristics, would appear to be more important in accounting for this variation.
- Comparisons of job quality based on measures of working conditions, job satisfaction and pay, reveal no simple dichotomy between the goods-producing sector and the service sector. Each has both good and bad jobs and the ranking of sectors, both at the broad sectoral level and at a more detailed level, varies according to which measure of job quality is used. Within the service sector, however, some jobs in the personal services sector are consistently of poorer quality than jobs in either the goods-producing sector or the rest of the service sector. On

the other hand, agricultural and construction jobs often have poorer working conditions as well.

- The United States has a higher overall employment rate than in many other OECD countries not just because it has a higher proportion of its working-age population employed in poorly-paid service sector jobs. It also has a higher proportion employed in service jobs that are well paid on average.
- Job growth in most countries over the 1990s, including the United States, took place principally in high-paying service sector jobs rather than low-paying ones. However, despite strong growth in some countries, Europe as a whole experienced slower employment growth than the United States at all wage levels.
- The implications for policy will depend on the initial situation of countries. Countries with a high incidence of poor quality jobs need ultimately to focus on measures to improve education and training. In other countries, where there is more of a concern to improve employment performance the solution is not simply to increase the provision of low-wage service jobs, but to lower barriers to job creation more generally.

I. Part-time work, temporary work, job tenure and training

A. Sectoral classification

The analysis in this section uses the same sectoral classification as was used in last year's chapter on services [OECD (2000)]. Nine broad sectors are identified comprising 21 sub-sectors. The correspondence between these sectors and the ISIC rev. 3 and NACE rev. 1 codes is shown in Table 3.A.1. This classification was also used for the analysis of earnings differentials by sector in Section II. However, due to data constraints, it was not possible to use this same classification uniformly throughout the chapter. Therefore, for the analysis of working conditions, job satisfaction and employment by wage levels in Sections II and III, the sectoral breakdown is based primarily on industries at the one-digit level according to ISIC rev. 3.

B. Incidence of part-time and temporary work

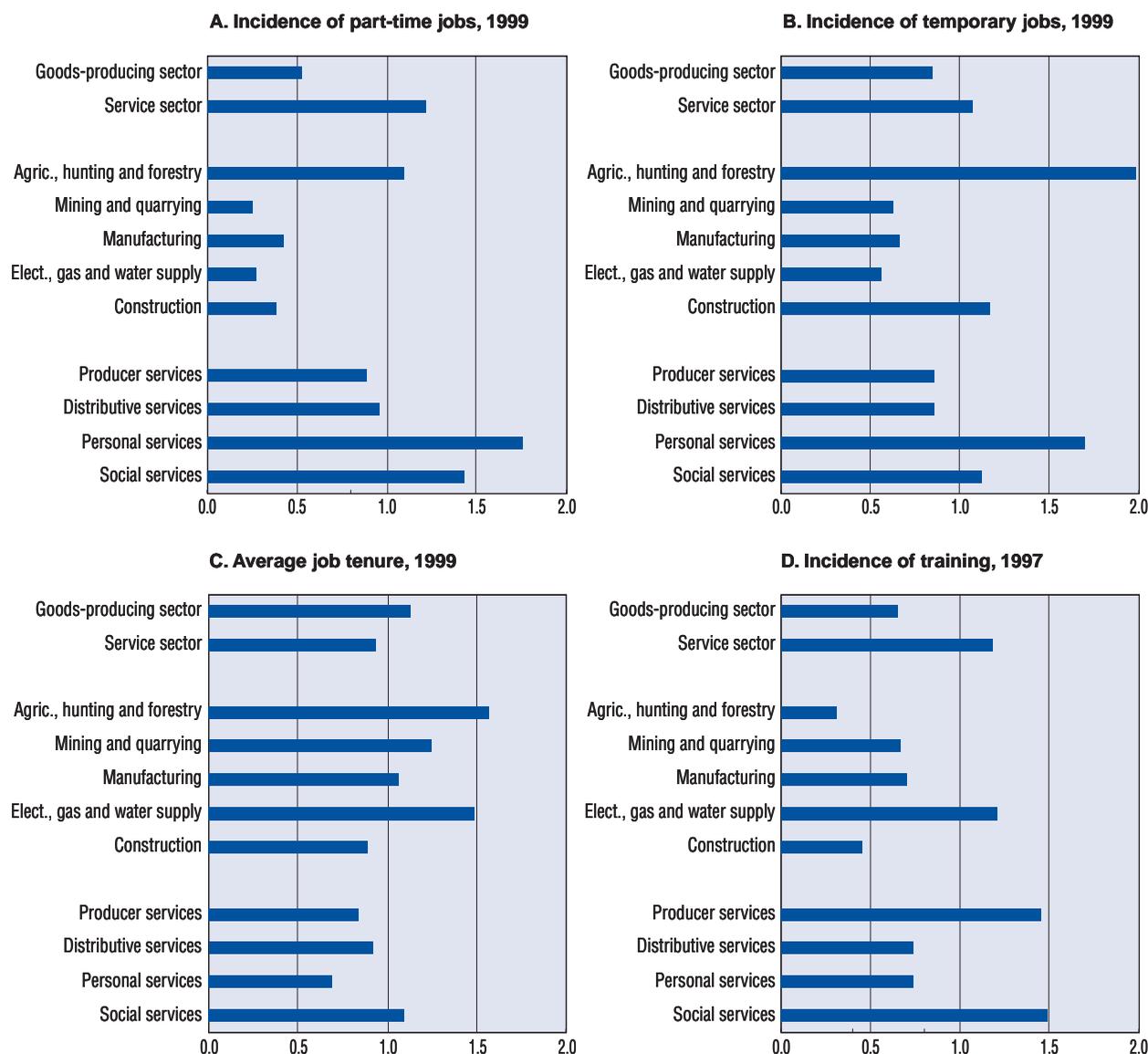
The rise in the number of "atypical" or "non-standard" jobs, such as part-time and temporary jobs, has been of particular concern for several commentators who have seen this trend as a sign of a decline in job quality [*e.g.* Letourneux (1998); Mishel *et al.* (2001)]. But, as

pointed out in OECD (1999), it is not always clear that part-time jobs are necessarily inferior to full-time jobs. Only a minority of all part-time workers appears to be working part-time involuntarily, and, while part-time workers earn less on average than full-time workers in most countries, this can be partly accounted for by lower average skill levels or non-pecuniary advantages. In the case of temporary jobs, they may serve as a useful entry point into more permanent work for younger and less-skilled workers. Nevertheless, some part-time and temporary jobs are particularly badly paid and involve poor working conditions with limited career prospects.¹ So it is of interest to see whether these types of working arrangements tend to be concentrated in the same sectors in different countries and whether they are particularly prevalent in the service sectors.

On average across OECD countries, part-time work is a much more common form of working arrangement in the service sector than in the goods-producing sector (Chart 3.1, Panel A).² This pattern is observed in all countries, except Korea, although the gap between the two sectors varies considerably from country to country (Table 3.B.1). In general, the incidence of part-time work is highest in personal services followed by social services. In several countries, part-time work accounted for more than one-third of all jobs in personal services in 1999 (and just over one-half in the Netherlands). At a more detailed level, part-time work in most countries tends to be most common in domestic services followed by education, recreation and cultural services, hotels and restaurants, other personal services and health services. The incidence of part-time work also tends to be relatively high in retail trade but this is offset within the distributive services by lower rates in wholesale trade and in transport and communication. Within the good-producing sector, part-time work is only relatively common in the agricultural sector.

How well do these sectoral differences in the incidence of part-time work correlate with the rate of involuntary part-time work in each sector? Data for the United States indicate that if anything the correlation may be negative rather than positive [Meisenheimer II (1998)]. For example, the rate of involuntary part-time work (*i.e.* as a proportion of all part-time employment in each sector) was 34% in manufacturing but only around 17% in the service sector as a whole. Thus, a higher incidence of part-time employment in one sector than another may not necessarily indicate that the proportion of all workers in that sector who are working part-time involuntarily is also higher.

Temporary jobs are more evenly spread across both the goods-producing and service sectors (Chart 3.1,

Chart 3.1. Various job characteristics by broad sector, OECD average^a

a) For each sector, each job characteristic is shown as a ratio to the average value across all sectors. The countries included in the OECD average for each measure are shown in Tables 3.B.1-3.B.4, as well as the year the data refer to in those instances where data for 1999 in Panels A-C were not available.

Sources: See Tables 3.B.1-3.B.4.

Panel B). Within the goods-producing sector, temporary work appears to be a particularly common form of work arrangement in agriculture and construction, but somewhat less common in manufacturing. Within the service sector, the incidence of temporary work in the personal services sector is well above the national average in all countries (Table 3.B.2). Within personal services, temporary work is a particularly common form of work

arrangement in recreational and cultural services and in hotels and restaurants. It is also mostly above the national average in social services in most countries, boosted by a relatively high incidence in education, miscellaneous social services and health. As for part-time work, the incidence of temporary work also tends to be relatively high in retail trade, but somewhat lower in the other distributive service sectors.

Interpreting these differences across sectors and countries is complicated by the fact that temporary employment potentially covers a range of different types of work arrangements. In addition to employment under a fixed-term contract, temporary employment can include seasonal and casual work and working under contract for a temporary work agency. These different types of arrangements may not all imply the same degree of precariousness. Moreover, countries differ in their coverage and definitions of these arrangements.

These differences will not only affect the overall incidence of temporary work across countries but also its relative incidence across sectors within countries. For example, around 23% of employees in Australia considered themselves to be casual workers in 2000 but only around 4% reported that they were working under a fixed-term contract employment (Table 3.B.2).³ Compared with a higher-than-average incidence of casual employment in the distributive and personal services sector, the incidence of fixed-term employment is below average in both sectors, considerably so in the distributive service sector. The relative incidence of fixed-term contracts is also considerably lower in agriculture and manufacturing than the incidence of casual work. For France, the incidence of temporary agency working in the first half of 1999 was only 3% compared with an incidence of 14% under a more inclusive measure of temporary employment. In contrast to the pattern for all forms of temporary employment, the relative incidence of temporary agency working is substantially lower in the service sector and much higher in the goods-producing sector, especially in manufacturing.

C. Job tenure

Another aspect of jobs concerns job stability as captured by average job tenure. This is typically measured by the length of time workers have been in their current job or with their current employer, and so refers to continuing spells of employment rather than to completed spells. There are a number of factors that suggest that there is probably a positive relationship between tenure and job quality. First, earnings tend to be positively correlated with average job tenure even after controlling for other factors affecting earnings differentials. Second, involuntary job loss often entails a loss of earnings not only because of lost income during a period of unemployment but also because earnings may be subsequently lower in a new job. Therefore, all other things equal, jobs with higher turnover will tend to be associated with greater job insecurity. But again, this indicator needs to be interpreted with caution. Not all short-tenure jobs reflect conditions that are imposed by employers, they can also reflect the preferences of jobholders themselves and may be compensated for by higher rates

of pay. Moreover, previous OECD work found little direct relationship between job tenure and job insecurity – a rise in perceptions of job insecurity had not generally been matched by a decline in job stability [OECD (1997)]. It was suggested that this might partly be because job tenure is influenced by job insecurity itself, and, that while job stability may not have changed much, the consequences of job separation may have worsened.

Average tenure is somewhat lower in general in the service sector than in the goods-producing sector (Chart 3.1, Panel C). This pattern holds for all countries, but with a much larger gap between the two broad sectors occurring in Greece, Australia and Switzerland (Table 3.B.3). Average job tenure is particularly low in personal services in all countries. In social services, on the other hand, it is on par or higher in most countries than in manufacturing. At a more detailed level, job tenure tends to be highest (and higher than in manufacturing) in public administration, communications and education. It is lowest in domestic services, hotels and restaurants and in business and professional services. Within the good-producing sector, average tenure tends to be relatively low in the construction industry and relatively high in agriculture and in public utilities.⁴

D. Training

The incidence of continuing vocational training provides a rough indicator of opportunities for career development and advancement. In fact, this is one of the few indicators of job quality where service jobs consistently come out ahead of jobs in the goods-producing sector (Chart 3.1, Panel D). On average, across the countries shown in Table 3.B.4, the probability of a worker receiving continuing vocational training during a given period of time is almost one-fifth higher than the national average for workers in services and around one-third lower for workers in the goods-producing sector. Within the service sectors, the incidence of training is highest in producer and social service sectors and lowest in the distributive and personal services sectors. But even for these latter two sectors, the incidence of training in at least one of the sectors is higher than in manufacturing in the majority of countries.

These results for training might at first seem somewhat anomalous given the results for some of the other characteristics of jobs. Part-time work is much more prevalent in the service sector than the goods-producing sector, and yet there is evidence that part-time workers typically receive less training on average than full-time workers [OECD (1999)]. Average job tenure is also somewhat lower and job turnover higher in services than in goods production. Given that, all other things equal, the

pay-off to firm-specific training will be lower for an employer when labour turnover is relatively high, this would tend to lower the incidence of training in the service sector relative to the goods-producing sector. The fact that more training occurs per employee in the service sector than the goods-producing sectors suggests that the gap between the two sectors is probably even higher for workers with similar characteristics.

There are a number of possible reasons for this result. These include the relationship between training and educational attainment and the sectoral impact of technological change. There is in general a positive association between educational attainment and the incidence of training [OECD (1999)]. As workers in the service sector have a higher level of educational attainment, on average, than those in the goods-producing sector [OECD (2000)], this would partly explain the higher incidence of training in the service sector. A related reason may be the greater retraining requirements imposed by technological change on some sectors than on others. For instance, the incidence of working with computers and other forms of information technology (IT) appears to be higher in certain service sectors (notably in the producer service sectors and for government workers in the social service sector) than in manufacturing.⁵ Thus, the IT revolution may require more frequent and widespread retraining to take place in these service sectors than in manufacturing.⁶

E. Accounting for country differences in job characteristics

Sectoral differences in part-time and temporary work and in average job tenure partly reflect differences in the average characteristics of workers in each sector. For example, part-time work is considerably more common among women workers in general than among men, irrespective of the sector they each work in. Average tenure also tends to be lower for younger workers and women than for older workers and men. Therefore, it is of some interest to examine the extent to which job quality and worker characteristics are correlated across sectors.

In Panel A of Table 3.1, correlation coefficients are shown between various aspects of jobs and characteristics of workers when measured separately in each of nine broad sectors and pooled across countries.⁷ Each measure of job quality (incidence of part-time and temporary work and average job tenure) is shown as a ratio of its value for each sector divided by the national average. This is done in order to abstract from country differences in the absolute levels of these measures. The question being asked here is to what extent sectoral, rather than country, variations in job quality are related to sectoral differences in worker characteristics.

Not surprisingly, the incidence of part-time and temporary work tends to be higher in sectors that have a higher-than-average proportion of workers that are women and younger workers. The incidence of part-time

Table 3.1. Correlates of sectoral and country differences in various job characteristics, 1998

	Correlation coefficients ^a		
	Part-time incidence	Temporary incidence	Average job tenure
A. Correlations across countries and 9 sectors^b			
Gender	0.79**	0.25*	-0.33**
Age	0.34**	0.30**	-0.60**
Education	0.01	0.43**	0.12
Occupation	-0.48**	0.14*	0.46**
Part-time incidence	1		
Temporary incidence	0.42**	1	
Average job tenure	-0.28**	0.06	1
B. Correlations across countries only^c			
Employment share in services	0.53**	-0.32	-0.55*

a) ** and * mean statistically significant at 1 % and 5 % levels respectively.

b) *Gender, age, education* and *occupation* refer to the proportion of all workers in each sector that are, respectively: women; aged less than 25; low-skilled (ISCED 0-2); and blue-collar workers (ISCO 6-8). In order to abstract from country differences in levels, each of these variables and the job characteristic measures have been normalised by dividing the value for each sector by the corresponding national value for all sectors. The nine sectors correspond to the sectoral breakdown shown in Chart 3.1 and Tables 3.B.1-3.B.3 (see Annex 3.A for further details).

c) The employment share in services refers to the share of service sector employment in total employment. The other variables are as defined as in Panel A but refer to national averages and to levels rather than to ratios.

Source: EU countries, European Labour Force Survey (data supplied by EUROSTAT); for the United States, OECD estimates based on microdata from the Current Population Survey (outgoing rotation group file and, for temporary workers, contingent workers supplement); and for the other countries, data supplied by national statistical authorities based on their national labour force surveys.

work is negatively correlated with the incidence of blue-collar work (which can be partly attributed to a higher incidence of blue-collar work among men than among women) but is not correlated with the level of educational attainment. Temporary work, on the other hand, appears to be more common in sector with a relatively high proportion of workers with few educational qualifications. Average job tenure tends to be lower in sectors that employ relatively more women and youth and higher in sectors employing relatively more blue-collar workers. However, apart from the relationship between part-time work and gender and between tenure and age, the size of the correlation coefficients indicates that the characteristics of workers shown in Table 3.1 account for less than one-half of the variation across sectors.

The results in Panel A of Table 3.1 also indicate to what extent variations in different job characteristics tend to be associated within the same sectors. Sectors with a high incidence of part-time work tend to be associated with a high incidence of temporary work and, to a lesser extent, with lower average job tenure. However, there does not appear to be any association across sectors between the importance of temporary work and average job tenure.

Of course, the characteristics of workers in each sector will reflect both labour supply and demand factors. Workers with different characteristics will have different preferences with respect to the sector they wish to work in and the type of working arrangements. There are likely to be differences across sectors in the skill requirements of firms and in their needs with respect to flexibility in hiring and firing. Institutional factors will in turn affect both these labour supply and demand decisions. Disentangling the separate influence of these factors in accounting for sectoral differences in various job characteristics is not simple.

Country comparisons can provide some useful information on this issue. In fact, there are substantial differences across countries that need to be accounted for. For example, in 1999, the overall incidence of part-time employment ranged from a low of under 6% in the Czech Republic to a high of just over 30% in the Netherlands (Table 3.B.1). A similar variation across countries can also be observed for the overall incidence of temporary work and to a lesser degree for average job tenure (Tables 3.B.2 and 3.B.3). If demand factors alone are driving sectoral differences in various job characteristics then country differences in employment structure would tend to account for much of this variation across countries at the economy-wide level.

At a broad level, there is a reasonably strong and positive correlation across countries between the overall

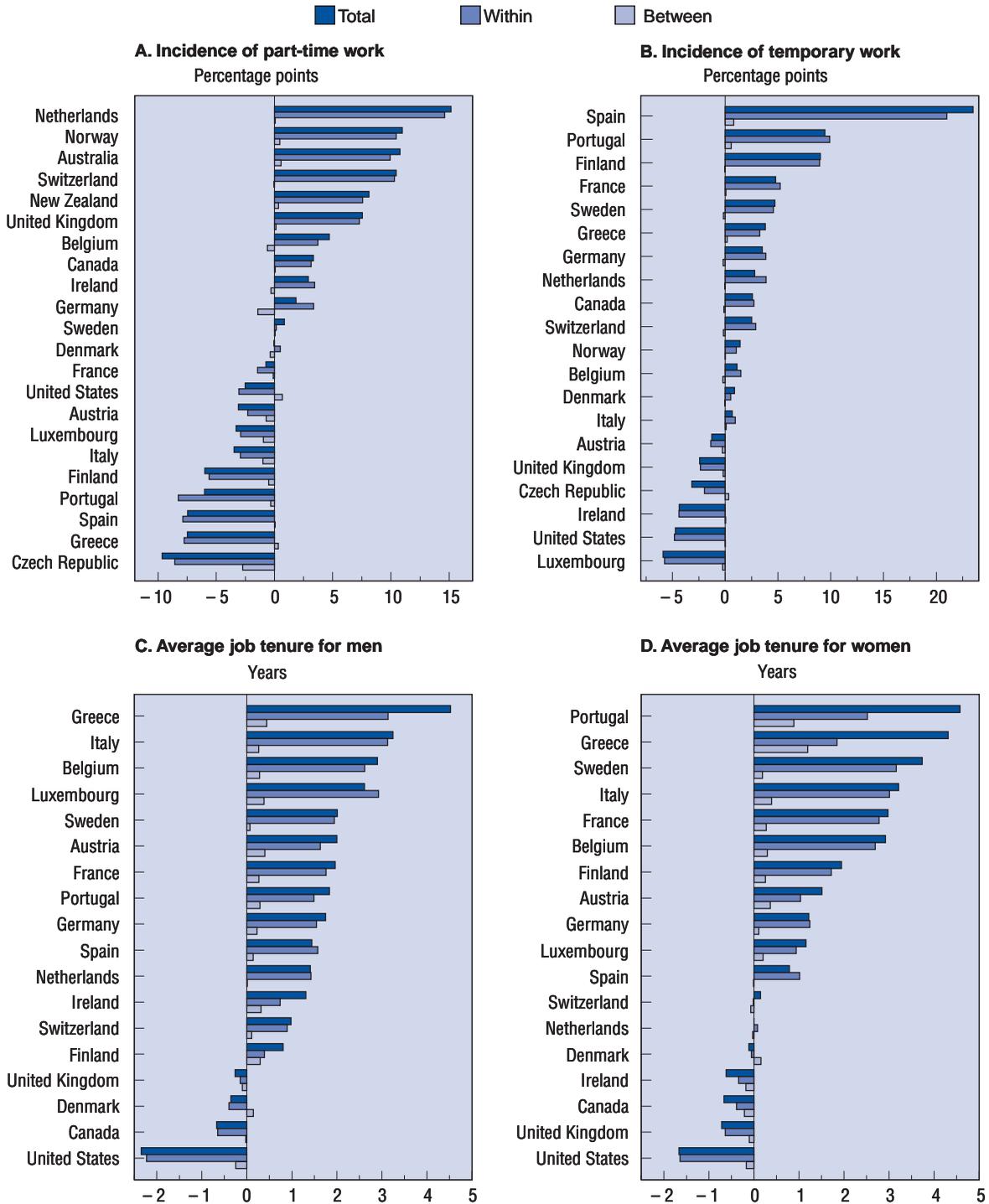
incidence of part-time work and the overall employment share in the service sector (Table 3.1, Panel B). Average job tenure also tends to be lower in countries with a higher employment share in services.

A deeper analysis of country differences in employment structures at a more detailed sectoral level (*i.e.* for the 21 sectors shown in Annex 3.A) can be carried out within a simple shift-share framework. The results are reported in Chart 3.2. For each job characteristic, the overall difference between each country and the (weighted) average for all countries at the economy-wide level is first calculated. This difference is then decomposed into “between”, “within” and “interaction” effects.⁸ The first effect reflects differences in employment structure between each country and the “average” country, while the second reflects differences between countries in each job characteristic for the same sectors. The third effect captures the effect of interactions between both differences in employment structure and in each job characteristic.

In the case of part-time work, differences in employment structure (“between” effects) account for a relatively small proportion of the overall difference in incidence between each country and the “average” country. If each country had the same structure as on average across all countries, but all else was unchanged, then the overall incidence of part-time employment would change by one percentage point or less in all countries except the Czech Republic and Germany. Most of the difference between countries appears to stem from the “within” effect, *i.e.* the incidence of part-time work tends to be uniformly higher or lower across all sectors in one country than in another.

A similar result is also recorded for the incidence of temporary employment. Again, the “between” effect accounts for around one percentage point or less of the overall difference between each country and the “average” country. In the case of average job tenure, the “between-sector” effect in some countries accounts for a significant part of the overall difference in tenure across countries, but even so the contribution is almost always much smaller in magnitude than that of the “within-sector” effect. For example, job tenure for women is almost 4.5 years higher in Greece than on average in other countries. Of this, differences in employment structure account for just over one year whereas differences within each sector account for almost two years. In contrast, average job tenure for both men and women in the United States is well below the average for other countries, but again this is mainly accounted for by lower average job tenure in all sectors rather than because it has a higher employment share in services.

Chart 3.2. Accounting for differences across countries in various job characteristics^a



a) For each job characteristic, "total" refers to the difference between each country and the (weighted) average for all countries at the economy-wide level; "between" refers to the contribution of differences in employment structure; and "within" refers to the contribution of differences across countries within each sector. Countries have been ranked by the size of the overall difference for each job characteristic. The data refer to 1999 for all countries, except Austria (1995 for average job tenure) and the Czech Republic and Canada (1998 for all measures).

Sources: See Tables 3.B.1-3.B.3.

F. Changes over time in part-time, temporary work and job tenure

The analysis has concentrated on a snapshot of various job characteristics at a point-in-time. As such, it cannot provide answers to questions such as whether the growth of employment in the service sector has contributed to changes in these characteristics or not. For instance, the incidence of part-time work is generally much higher in the service industries than in the goods-producing industries. However, a shift of jobs into the service sectors need not necessarily lead to, or account for, a rise in the part-time employment share at the level of the whole economy. If the incidence of part-time work falls in all sectors, the overall share may also fall despite a compositional shift of employment into sectors with a higher-than-average incidence of part-time work.

A more dynamic perspective on the relationship between changes over time in the sectoral distribution of employment and changes in various job characteristics can be provided by using the same type of shift-share analysis as was used to account for differences across countries. The results are reported in Chart 3.3. As before, changes over time in the overall share of part-time, temporary employment and average job tenure can be decomposed into “between”, “within” and “interaction” effects.⁹ If employment shifts into the service sector were the principal reason for observing changes at the economy-wide level, the between-sector contribution would tend to be much greater than the within-sector contribution.

In the case of part-time employment (Chart 3.3), there has been a substantial rise in its incidence in several countries. For example, in Australia, Belgium, Ireland and Japan it has risen by over 5 percentage points. Employment shifts between sectors have tended to push up the overall incidence of part-time work in all countries except Japan, Korea, the Netherlands and Spain. But this has been by less than one percentage point in all countries, except for Australia. Changes within sectors generally account for a much larger proportion of the overall change.

The rise in the share of temporary jobs in total employment has been less pronounced in most countries than the rise in the part-time employment share, except for substantial rises in Belgium, France and Spain. In all cases, between-sector effects account for less than one percentage point of the overall change in the temporary-employment share. Where the temporary-employment share has risen significantly, the within-sector effect largely dominates the between-sector effect.

In the case of average job tenure, no consistent trends over time emerge. Job tenure rose in some countries and fell in others, although women in most of the countries shown in Chart 3.3 did experience rising tenure. In virtually all countries, and particularly for men, employment shifts between sectors have had a negative but small impact on average tenure. In contrast, changes in average job tenure within sectors have generally had a positive impact, especially for women.

To summarise, differences in employment structure appear to account for only a small part of the variation across countries and over time in average job tenure and the overall incidence of part-time and temporary employment. Thus, general institutional, economic and social changes that tend to affect all sectors have probably been more important factors rather than the shift of employment out of goods production and into services. These include the strength of employment protection legislation, the degree of collective bargaining coverage, the existence of statutory wage floors, etc., as well as the distribution of worker characteristics in terms of age, gender and skill level.

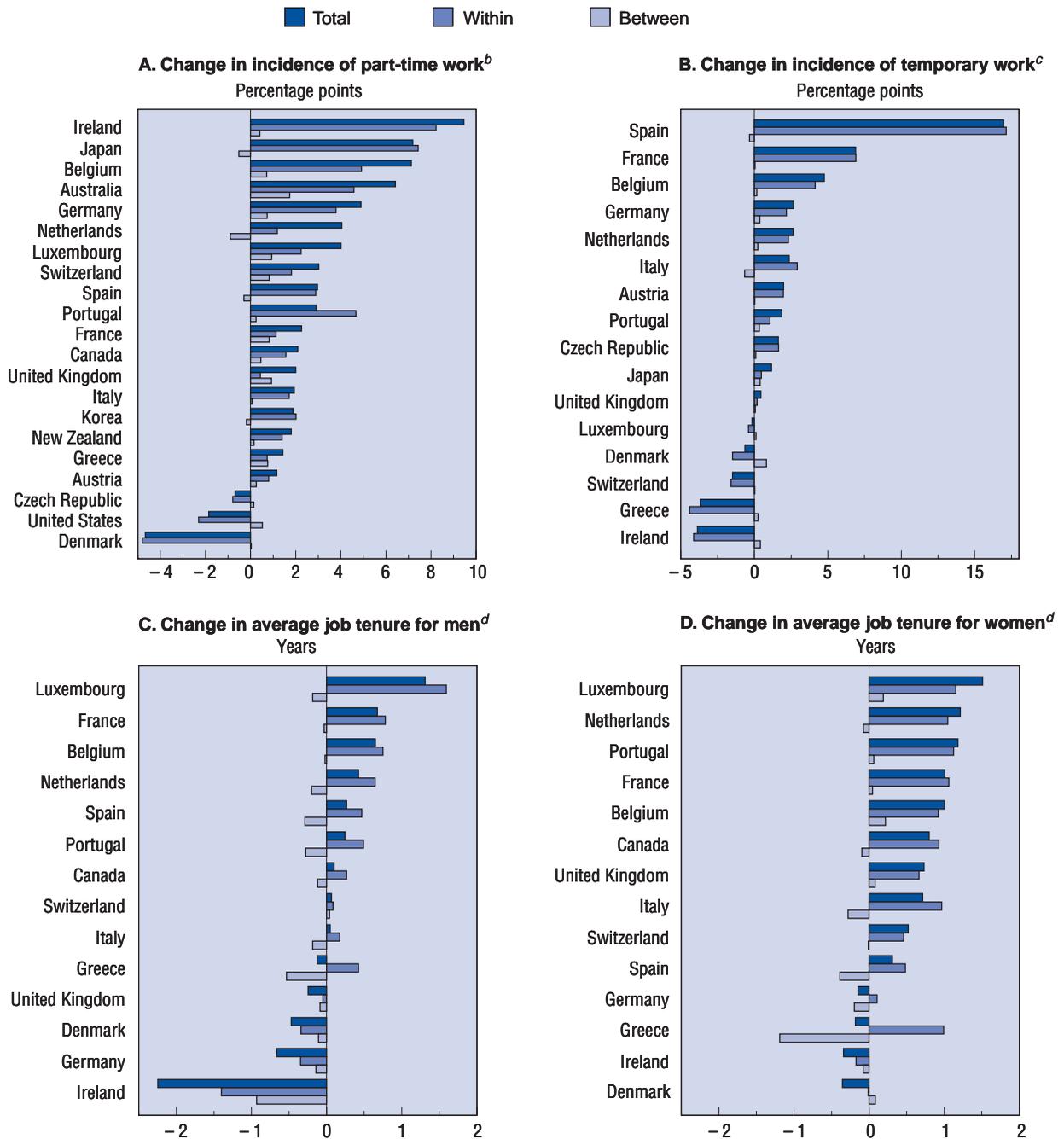
II. Working conditions and job satisfaction

A. Working conditions

The various job characteristics described so far provide only very indirect measures of job quality. As an alternative to these indirect measures, more direct measures are provided by surveys of working conditions. In these types of surveys, jobholders are typically asked a number of questions about various aspects of their working conditions covering the work environment, the nature of the tasks performed in the job, the degree of job autonomy, etc. These surveys can potentially provide a useful insight into differences across sectors in the types of job tasks being performed and whether they involve relatively poor or relatively good working conditions.¹⁰ However, it is not evident how to derive an aggregate measure of job quality from the potentially wide array of information on working conditions that is available. Moreover, not all countries have these types of surveys, and there can be large differences in the type of questions that are asked in those that do.

In order to minimise these potential problems, the analysis mainly draws upon the results of the *European Survey on Working Conditions* [European Foundation (1997)], which provides a useful source of comparable data for European Union countries (see Box 3.1).

Chart 3.3. Accounting for changes over time in various job characteristics^a



a) For each country, “total” refers to the change over time for each job characteristic at the economy-wide level; “between” refers to the contribution of shifts in the employment structure; and “within” refers to the contribution of changes within each sector. Countries have been ranked by the size of the overall change in each job characteristic.

b) The data refer to: 1992-1998 for Korea and New Zealand; 1992-1999 for Germany, Italy and Switzerland; 1995-1999 for Austria; 1987-1998 for Canada; 1993-1998 for the Czech Republic; 1984-1998 for Japan; and 1987-1999 for all other countries.

c) The data refer to: 1992-1999 for Germany, Italy and Switzerland; 1995-1999 for Austria; 1993-1998 for the Czech Republic; 1984-1998 for Japan; and 1987-1999 for all other countries.

d) The data refer to: 1992-1998 for Canada; and to 1992-1999 for all other countries.

Sources: See Tables 3.B.1-3.B.3.

Box 3.1. **Measuring working conditions**

The *European Survey on Working Conditions* is specifically designed to monitor working conditions as perceived by respondents. The second survey was conducted in each of the fifteen countries of the European Union at the end of 1995/beginning of 1996 in close collaboration with Eurostat and National Statistical Offices. A fairly small, but representative, sample of the employed population aged 15 and over was surveyed. Around 1 000 persons were interviewed in each country (500 in Luxembourg, 2 000 in Germany). The survey is described in more detail in European Foundation (1997).

A wide range of information on working conditions is available from the survey. For the purposes of this study, nine key aspects of *poor* working conditions have been identified and the incidence of workers reporting each aspect has been calculated. The definition of each type of working condition is described below and the relevant survey question upon which it is based is given in parenthesis.

Unpleasant working conditions. For between one-half to all of the time, exposed in main job to at least one of the following: vibrations from hand tools or machinery; loud noise; high or low temperatures; breathing in vapours, fumes, dust or dangerous substances; handling dangerous products; or radiation such as X rays, radioactive radiation, welding light or laser beams (Question 14a-g).

Unpleasant work tasks. For between one-half to all of the time, main job involves at least one of the following: painful or tiring positions; carrying or moving heavy loads; short repetitive tasks; repetitive hand or arm movements; or wearing personal protective equipment (Question 15a-e).

Monotonous work. Main job involves monotonous tasks (Question 23f).

Not in a secure job. Persons replying that they do not have a secure job (Question 20f).

Working antisocial hours. Usually work at least once a month either at night or on Sundays or work shifts or irregular hours (Questions 18a, b and 19).

Limited working-time flexibility. Cannot take a break when wanted and not free to decide when to take holidays or days off (Question 20b, c).

Limited work autonomy. Not able to choose or change either the order of tasks, work methods or work speed (Question 22a-c).

No additional benefits. Over and above their statutory entitlements, do not receive any of the following additional benefits: sick child leave; maternity leave; parental leave; or child day care (Question 30a-d).

Work-related health problems. Absence of 5 days or more over the past 12 months due to health problems caused by main job (Question 32).

Broad differences in working conditions between the goods-producing sector and the service sector are shown for each EU country in Table 3.2. The same information is shown at a more detailed sectoral level for the EU as a whole in Chart 3.4. In both the table and the chart, the data refer to the percentage of workers that report experiencing a particular type of working conditions. Higher values indicate less favourable working conditions.

In Table 3.2, no clear-cut distinction emerges between the two sectors. Nevertheless, there are several areas where working conditions appear to be distinctly less favourable in the goods-sector than in the service sector, but none where the opposite is true. In almost all countries, jobs in the goods-producing sector appear to be more likely to be associated with unpleasant working conditions or work tasks than in the service sector. On average for the EU, they also appear to offer less work autonomy. However, this result does not hold for all individual EU countries. For the other aspects of working

conditions, apart from “antisocial” hours of work, they also appear to be less favourable on average in the EU in the goods-producing sector than in the service sector. But these differences are either relatively small and/or do not hold for every country.

Within the service sector, the hotel and restaurant and transport and communications sectors stand out as generally having less favourable work conditions than other service industries (Chart 3.4). Working conditions in these two sectors also tend to be as bad as or less favourable than in the goods-producing sector. For instance, a higher proportion of workers in these sectors report working “antisocial” hours and having no additional benefits than do workers in manufacturing. The prevalence of jobs involving unpleasant work tasks, monotonous work, limited work autonomy or limited working-time flexibility is also roughly similar. In addition, the proportion of workers not feeling secure in their jobs is higher in the hotel and restaurant sector than in

Table 3.2. Working conditions in Europe by broad sector, 1995/96^a

Percentage of workers in each sector experiencing each type of working condition

	Unpleasant working conditions		Unpleasant work tasks		Monotonous work		Working antisocial hours		Limited working-time flexibility	
	Goods-producing sector	Service sector	Goods-producing sector	Service sector	Goods-producing sector	Service sector	Goods-producing sector	Service sector	Goods-producing sector	Service sector
Austria	62	29	72	52	34	27	23	22	60	52
Belgium	41	22	66	50	35	36	27	20	50	55
Denmark	46	26	62	48	46	36	21	23	26	40
Finland	58	29	74	66	57	41	44	39	31	46
France	62	36	79	65	55	45	17	24	40	42
Germany	52	20	66	42	41	29	19	17	69	54
Greece	83	43	84	70	58	59	27	28	38	49
Ireland	52	28	65	53	52	55	25	27	37	45
Italy	44	33	63	57	41	42	15	19	33	38
Luxembourg	53	24	61	40	42	34	32	18	37	39
Netherlands	50	27	74	63	41	28	21	23	46	47
Portugal	59	32	79	66	47	40	17	29	41	40
Spain	65	36	79	62	63	60	16	22	47	58
Sweden	58	26	70	47	37	23	24	17	25	43
United Kingdom	53	38	72	65	66	67	23	28	40	39
European Union	55	30	71	57	49	44	19	22	48	46
	Limited work autonomy		Work-related health problems		Not in a secure job		No additional benefits ^b			
	Goods-producing sector	Service sector	Goods-producing sector	Service sector	Goods-producing sector	Service sector	Goods-producing sector	Service sector		
Austria	54	49	13	7	14	11	21	13		
Belgium	43	34	9	5	15	21	35	24		
Denmark	37	30	3	3	15	12	53	41		
Finland	41	45	10	5	24	26	56	50		
France	50	41	5	5	40	34	36	33		
Germany	64	49	12	8	19	10	18	14		
Greece	42	51	8	4	40	28	31	18		
Ireland	42	45	2	1	14	11	34	26		
Italy	52	42	2	3	21	16	25	18		
Luxembourg	59	42	7	5	9	12	34	18		
Netherlands	32	35	8	7	19	15	27	18		
Portugal	45	35	11	5	30	34	24	17		
Spain	60	43	6	5	26	25	36	29		
Sweden	40	42	4	5	25	28	75	80		
United Kingdom	40	39	3	3	23	19	30	27		
European Union	52	43	7	5	24	20	29	25		

a) See Box 3.1 in text for definition of each type of working condition. A higher value indicates less favourable working conditions.

b) Data refer to wage and salary earners only.

Source: OECD estimates based on microdata from the Second European Survey on Working Conditions (1995/96).

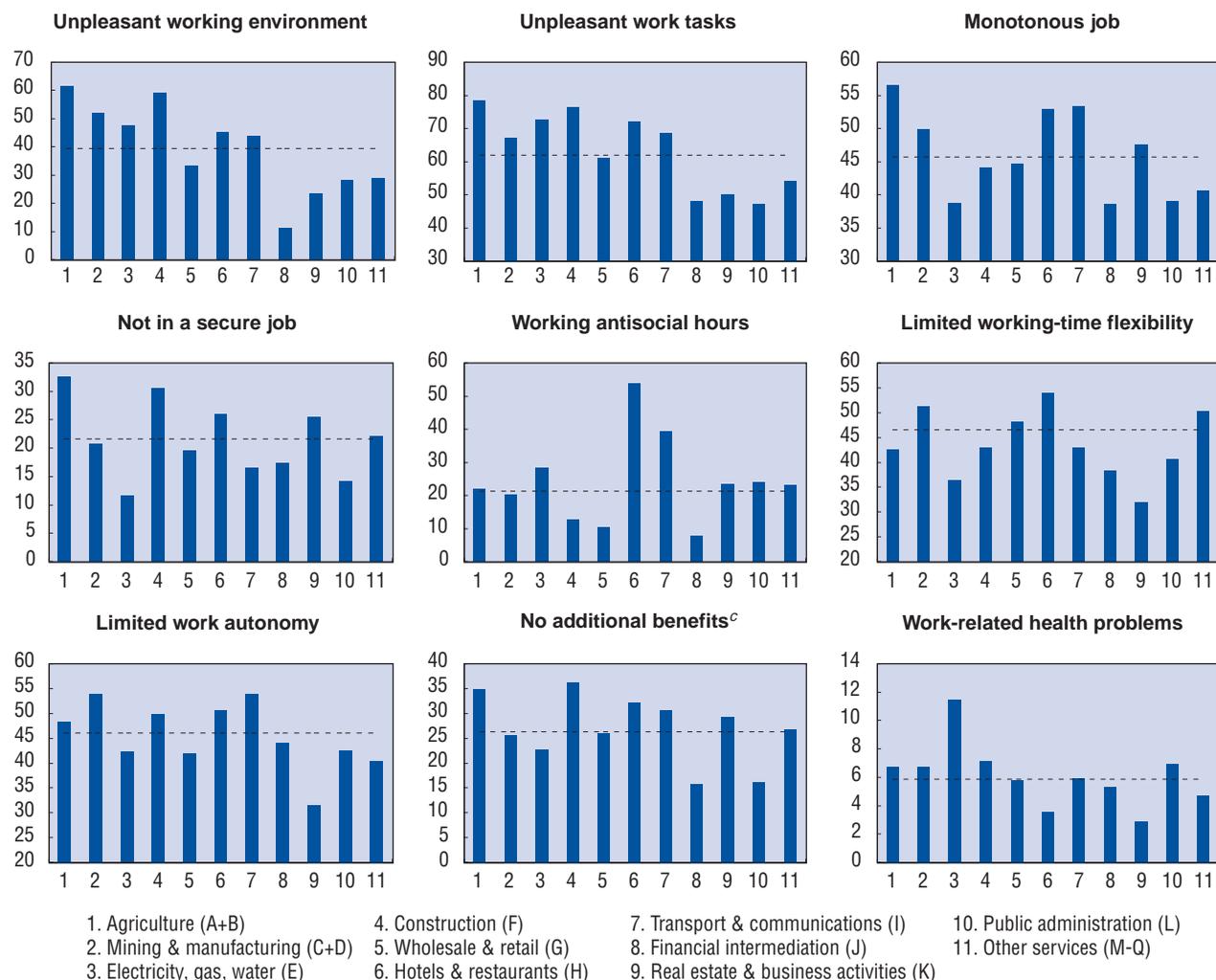
manufacturing, although the proportion is lower than in agriculture and construction. At the other end of the scale, workers in financial intermediation appear to have some of the most favourable working conditions, closely followed by workers in public administration, and in real estate and business activities.

In Table 3.3, averages are presented across the nine different aspects of working conditions as a convenient way of summarising broad differences in poor working

conditions across sectors. The absolute value of the incidence of each working condition does not in itself convey any information about the comparative value that workers themselves place on these working conditions. Therefore, it would be meaningless to simply average these absolute values across the different types of working conditions. Instead, two alternative methods of averaging are presented. The first consists of calculating the ratio of the incidence of each type of working condition in each sector to the overall incidence for all sectors and then averaging these ratios. The second

Chart 3.4. Working conditions in Europe by sector, 1995^{a, b}

Percentage of workers in each sector experiencing each type of working condition



a) See Box 3.1 in text for definition of each type of working condition. A higher value indicates less favourable working conditions.

b) The dashed line in each chart represents the average across all sectors.

c) Data refer to wage and salary earners only.

Source: OECD calculations based on results from the Second European Survey of Working Conditions.

consists of ranking sectors for each type of working condition separately and then ranking the average of these ranks. Both types of averaging implicitly assign an equal weight to each type of working condition. In reality, of course, they will be valued differently and these valuations will differ across workers. Nevertheless, these averages provide a useful way of summarising whether sectors can be distinguished between those with generally more favourable working conditions and those with generally less favourable conditions.

As it turns out, both procedures produce similar results. On average, the risk of facing poor working conditions appear to be lower in many service sectors than most goods-producing sectors, particularly in financial intermediation, real estate and business activities and public administration. The least favourable conditions appear to be in hotels and restaurants, agriculture, construction, manufacturing and transport and communications.

Table 3.3. Averages across a range of working conditions in Europe by sector, 1995/96^a

	Average of ratios ^b	Ranking of ranks ^c
Goods-producing sector	1.12	..
Agriculture (A + B)	1.23	11
Mining and manufacturing (C + D)	1.09	8
Electricity, gas, water (E)	1.07	5
Construction (F)	1.15	10
Service sector	0.93	..
Wholesale and retail (G)	0.90	6
Hotels and restaurants (H)	1.26	9
Transport and communications (I)	1.14	7
Financial intermediation (J)	0.71	1
Real estate and business activities (K)	0.85	2
Public administration (L)	0.86	3
Other services (M – Q)	0.93	4

.. Data not applicable.

a) The data refer to averages across nine different aspects of working conditions (see text and Box 3.1). A higher value indicates less favourable working conditions.

b) Simple average of the ratio for each type of working conditions of the incidence in each sector relative to the average incidence for all sectors.

c) Ranking of the average rank for each sector based on its value for each type of working conditions.

Source: OECD estimates based on microdata from the Second European Survey on Working Conditions (1995/96).

It is difficult to compare these results with those for other countries outside of the EU because of differences in the way each country gathers information on working conditions. In one study for Canada, the average number of a range of monetary and non-monetary benefits that are received by employees in each sector is reported [Statistics Canada (1998)]. In 1995, employees in public administration, finance and communications received considerably more benefits on average than employees in the manufacturing sector while employees in retail trade, hotels and restaurants and other personal services sectors received considerably fewer. Employees in other service sectors received either a similar or slightly small number of benefits on average than in manufacturing but far more than in agriculture and construction. The results were based on the 1995 Survey of Work Arrangements. The non-monetary benefits include working a regular daytime schedule (or other schedule by choice), being in a permanent job, having access to flexitime and stating a preference for working the same hours for the same pay rather than fewer hours for less pay or more hours for more pay. The monetary benefits include being covered by various pension and health plans and entitlements to paid sick leave and paid vacation.

For the United States information is available on the prevalence of flexitime and shift work [Beers (2000)]. In 1997, flexitime arrangements were generally more prevalent in all broad service sub-sectors than in goods-producing sectors, apart from agriculture. A less clear distinction emerges in the case of shift work and other non-regular daytime schedules where the prevalence of these arrangements is much higher in several service sectors,

such as hotels and restaurants, transport and other personal services, than in the manufacturing sector.

B. Job satisfaction

Another way of trying to measure job quality more directly is to simply ask people whether they are satisfied with their jobs or not. However, considerable care is required in interpreting the results of this type of subjective measure in the context of international comparisons. There can be subtle differences between countries in the way questions about job satisfaction are asked and interpreted. There are also likely to be systematic country differences in the way people respond to these types of subjective questions. Even within the same country, it is not entirely clear what precise aspect of job quality is being captured by questions about job satisfaction. Being satisfied with one's job may be an important benefit of a job but answers to questions about job satisfaction are probably also reflecting the extent to which a range of expectations about pay, working conditions and career prospects are realised in practice.¹¹

Bearing in mind these qualifications, the relative degree of job satisfaction by sector is reported in Table 3.4 according to the results of the European Working Conditions Survey (EWCS) and the European Community Household Panel (ECHP) Survey. Two measures are shown. The first is the average of satisfaction scores reported in each sector (higher values indicate greater satisfaction). However, a simple average of ordinal values is implicitly assigning the same weight to each possible response when there is no reason to believe that a score of 4 indicates twice as much satisfaction as a score of 2.

Table 3.4. Job satisfaction in Europe by sector, 1994-1996

	European Survey on Working Conditions ^a		European Community Household Panel ^b	
	Average level of satisfaction ^c	Proportion very satisfied ^d	Average level of satisfaction ^c	Proportion very satisfied ^d
Goods-producing sector	3.03	26.2	4.21	11.6
Agriculture (A + B)	2.86	22.8	4.03	13.4
Industry (C + D + E)	3.07	27.2	4.25	11.3
Construction (F)	3.03	25.5	4.19	11.5
Service sector	3.18	34.8	4.41	14.8
Wholesale and retail (G)	3.09	31.5	4.23	12.9
Hotels and restaurants (H)	3.07	24.6	4.11	12.0
Transport and communications (I)	3.09	27.9	4.28	10.9
Financial intermediation (J)	3.18	35.2	4.47	14.1
Real estate and business activities (K)	3.21	37.8	4.46	15.1
Public administration (L)	3.27	39.5	4.50	14.3
Other services (M – Q)	3.24	38.1	4.49	17.1
All sectors	3.12	31.6	4.33	13.8

a) The data refer to replies to question 36 of the survey: On the whole are you very satisfied, fairly satisfied, not very satisfied or not at all satisfied with your main job?

b) The data refer to the variable PK001 of the survey: satisfaction with work or main activity. The level of satisfaction is scored as 1 for not satisfied through to 6 for fully satisfied. Only replies from persons in employment were taken into account.

c) Weighted average of job satisfaction scores (i.e. 1 for least satisfied category, 2 for the next level of satisfaction and so on).

d) Proportion of workers reporting highest level of job satisfaction.

Source: OECD estimates based on microdata from the Second European Survey on Working Conditions (1995-1996) and the 1994-1996 waves of the European Community Household Panel Survey.

Therefore, the second measure shows the proportion of workers in each sector reporting the highest level of satisfaction. The results are fairly similar across the two surveys and suggest that, on average across EU countries, job satisfaction tends to be higher in the service sector than in the goods-producing sector. However, this is not uniformly the case throughout the service sector. Workers in hotels and restaurants report relatively low levels of satisfaction while the highest levels are reported in real estate and business activities, public administration and other social and personal services. Workers in transport and communications also report relatively low levels of job satisfaction.

To some extent these sectoral differences in job satisfaction may reflect compositional differences in the characteristics of workers. All other things equal, there is some evidence that women tend to report higher levels of job satisfaction than men and that there is a U-shaped relationship between age and job satisfaction [Clark (1997); Clark and Oswald (1996)]. Therefore, a more detailed analysis is required of whether these sectoral differences remain once allowance is made for differences across sectors in the composition of employment according to various worker characteristics.

In Table 3.5, the results are shown of regressing reported levels of job satisfaction from the two surveys against sector of employment, as well as against various

other job and worker characteristics that are likely to influence job satisfaction.¹² The coefficients on the sector variables are reported relative to manufacturing. A positive coefficient for a particular sector indicates that, all other things equal, job satisfaction is higher in that sector. It could be argued that job characteristics such as part-time and temporary status, average job tenure, firm size, earnings and, possibly, occupation, should not be included in the regression since they also represent different aspects of job quality. However, it is interesting to examine whether there are sectoral differences in other unobserved factors that are associated with job satisfaction. Therefore, the regression results in Table 3.5 are shown both with and without controls for these job characteristics.

Both the ECHP and EWCS results in Table 3.5 (Model 2) suggest that, after controlling for a range of worker characteristics (and unobservable factors affecting cross-country differences), job satisfaction tends to be higher in most other sectors than in manufacturing. This is broadly in line with the results in Table 3.4. Interestingly enough, the ECHP results also suggest that, even after controlling for sectoral differences in a range of job characteristics (Model 1), there are still other aspects of jobs which are associated with lower levels of job satisfaction in manufacturing than in other sectors. However, these differences are less important than when only worker characteristics are controlled for. These unobserved aspects of

Table 3.5. Job satisfaction by sector, controlling for job and worker characteristics^a

	European Community Household Panel		European Survey on Working Conditions	
	Model 1 ^b	Model 2 ^c	Model 1 ^b	Model 2 ^c
Agriculture (A + B)	0.03	-0.11	-0.10	-0.16
Mining and/or electricity, gas and water (C/E)	0.08	0.11	0.07	0.22
Construction (F)	0.03	-0.02	-0.15	-0.11
Wholesale and retail (G)	0.02	0.03	-0.07	0.03
Hotels and restaurants (H)	-0.05	-0.05	0.03	-0.01
Transport and communications (I)	0.01	0.04	0.00	0.08
Financial intermediation (J)	0.05	0.15	-0.03	0.12
Real estate and business activities (K)	0.05	0.09	-0.02	0.20
Public administration (L)	0.15	0.22	0.18	0.34
Other services (M – Q)	..	..	0.12	0.28
Education (M)	0.21	0.31	..	..
Health and social work (N)	0.25	0.30	..	..
Other social and personal services (O – Q)	0.05	0.01	..	..
Controls for worker characteristics	Yes	Yes	Yes	Yes
Controls for job characteristics	Yes	No	Yes	No
Controls for fixed country effects	Yes	Yes	Yes	Yes
Number of observations	77 377	81 788	10 080	11 489

.. Data not available.

a) For the questions on job satisfaction and the possible replies see Table 3.4. The coefficients reported in the table are the results of an ordered probit regression where the dependent variable is the job satisfaction score of each individual. The independent variables include variables for sector of employment (with manufacturing as the reference sector) and other job characteristics (earnings – ECHP only, occupation, part-time status, permanent status, firm size, average job tenure). Variables for various worker characteristics (gender, education – ECHP only, marital status, presence of dependent children) and for country and year (ECHP only) effects are also included. A positive coefficient indicates that relative to the manufacturing sector job satisfaction is higher all else equal and *vice versa*. All reported coefficients are significant at the 1 per cent level.

b) Full model with all job and worker characteristics included.

c) Reduced model without any variable for job characteristics, apart from sector of employment.

Sources: OECD estimates based on microdata from the Second European Survey on Working Conditions (1995/96) and the 1994-1996 waves of the European Community Household Panel Survey.

jobs are probably related to the results reported earlier on working conditions that showed poorer conditions in manufacturing in a number of dimensions than elsewhere. The EWCS results are somewhat different in that after controlling for both job and worker characteristics, job satisfaction appears lower in a number of service sectors than in manufacturing. However, unlike the ECHP, the EWCS does not contain information on education and earnings and so these characteristics could not be controlled for.

III. Pay levels as a measure of job quality

Another important job characteristic that may be more directly linked to job quality is the rate of pay that is associated with a job. Invariably, studies of earnings differentials find that rates of pay are highly correlated with the level of skill required in the job, whether measured by formal educational qualifications, tenure in the job and overall work experience or by more direct measures in terms of knowledge requirements and the complexity involved in carrying out the job.¹³ Within the same sector more highly-paid employees tend to have better working

conditions than lower-paid employees in the sense of working in less physically demanding or noisy jobs and/or with greater autonomy in their work schedules. This suggests that better quality jobs can be proxied by those with higher pay.¹⁴

While knowing what a job pays may be a useful way of assessing job quality, there are a number of potential problems with comparing earnings across sectors and countries (see Box 3.2). In order to improve comparability, earnings are reported as hourly earnings for all workers, when available, otherwise to earnings of full-time workers only. To the extent possible, the earnings data for the European countries are drawn from harmonised sources such as the European Structure of Earnings Survey and the European Community Household Panel. Earnings differentials across sectors are also shown relative to earnings of manufacturing workers, as earnings data for this sector are available in all countries. Nevertheless, not all of the various problems of comparability can be fully resolved, and the reported results should only be taken as providing a broad indication, as opposed to precise estimates, of differences across sectors and countries in earnings differentials.

Box 3.2. Comparing earnings differentials across countries

International studies of earnings differentials usually need to confront a number of problems concerning data comparability.

First, there are substantial differences across countries in the way earnings are defined and in the way the data are collected. The earnings data may or may not include overtime pay and other regular and irregular bonuses. These components of pay can differ in importance both across countries and sectors.

Second, not all countries regularly collect earnings data on individuals (as opposed to total wage and salary payments) across all sectors of the economy. This is often the case for countries relying on establishment surveys or administrative data as their main source of earnings data. Information is often lacking for public administration, education, health and other social and personal services.

Third, not all countries report earnings data on an hourly basis. This can hamper comparisons across sectors. A sector with a relatively high incidence of part-time work will tend to record relatively low earnings if earnings are measured on a weekly, monthly or annual basis, irrespective of whether hourly rates of pay are high or not in that sector.

Finally, different survey instruments are used to collect earnings data. Administrative data and establishments surveys tend to report more accurately both earnings and hours paid for than household surveys, but their sectoral coverage can be limited, small firms are sometimes excluded and they may not cover very low-paid workers for other reasons. The coverage of household surveys tends to be better but at the cost of greater reporting error with respect to earnings, hours worked and sector of employment.

A. Overall earnings differentials across sectors

Table 3.6 provides a summary of earnings differentials across sectors relative to manufacturing. For those countries for which earnings data are available covering all sectors, average earnings in the service sector are slightly higher or around the same as in the goods-producing sector in most countries. The main exceptions are Australia and the United States. In Australia earnings for full-time workers are substantially higher in the service sector than in the goods-producing sector. In contrast, relative earnings for American service workers are substantially lower.¹⁵

Within the goods-producing sector, average earnings tend to be highest in electricity, gas and water and lowest in construction and agriculture. Within the service sector, jobs in producer services record the highest average earnings in most countries followed by social services. Average earnings are lower in distributive services than in manufacturing in most countries, with the notable exceptions of Portugal and Italy, and lower still in personal services.¹⁶

B. The distribution of jobs by broad wage levels

So far the distribution of earnings in each sector has been ignored. The level of average earnings may be the same in any two sectors, but with a very different dispersion of earnings. Consequently, one sector may have a higher incidence of low-paying jobs and/or higher incidence of high-paying jobs than in the other sector. One way to take account of sectoral differences in earnings

distribution is to divide up sectors by occupational groups. It is then possible to look at how the earnings of similar groups of workers in terms of occupational status vary across sectors and countries although of course this ignores the dispersion of earnings within these occupational groups. In the following analysis, employment in each country has been divided up into 13 sectors (see Table 3.7) and into a number of broad occupations varying from 4 to 7 according to sector. In total, some 76 separate sector/occupation categories are identified (see Table 3.C.1). These categories are then ranked on the basis of average hourly earnings for workers in each category in 1995 and assigned to three groups (low, medium or high paid) of equal size on the basis of employment shares (see Annex 3.C for further details).¹⁷

In Table 3.7, the sectoral composition of jobs in each of these three wage groups is shown for the EU and the United States (a breakdown by occupation as well is provided in Tables 3.C.1 and 3.C.2 for the EU countries and 3.C.3 for the United States). In both economies, the service sector accounts for the lion's share of low-paid jobs, but it also accounts for a large majority of high-paid jobs as well. This is hardly surprising as the service sector accounts for a large majority of all jobs. In fact, in both economies, the service sector accounts for a higher share of high-paying jobs than its share of all jobs. Service-sector jobs are somewhat over-represented in low-paying jobs but only in Europe and only by a small amount. In both economies, service sector jobs are under-represented in medium-paying jobs, especially in Europe.¹⁸

Table 3.6. Earnings differentials by sector of employment^a

Ratio of average earnings in each sector to average earnings in manufacturing											
Goods-producing sector							Service sector				
Total	Agriculture, hunting and forestry	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Total	Producer services	Distributive services	Personal services	Social services	
A. Data based on partial coverage of sectors^b											
Austria	..	..	1.08	1.00	1.32	1.05	..	1.01	0.93	..	..
Belgium	..	..	0.92	1.00	1.37	0.85	..	1.13	0.91	..	..
Denmark	..	..	1.30	1.00	1.27	1.02	..	1.18	0.98	..	..
Finland	..	..	0.88	1.00	1.11	0.99	..	1.09	0.97	..	..
France	..	..	1.07	1.00	1.18	0.94	..	1.06	0.87	..	..
Greece	..	..	1.15	1.00	1.26	..	..	..	0.89	..	..
Italy	..	..	0.99	1.00	1.36	1.09	..	1.31	1.21	..	..
Luxembourg	..	..	..	1.00	..	0.80	..	1.15	0.86	..	..
Netherlands	..	..	..	1.00	1.26	0.99	..	0.96	0.91	..	..
Portugal	..	..	1.22	1.00	2.39	1.05	..	2.14	1.46	..	..
Spain	..	..	1.29	1.00	1.45	0.84	..	1.18	0.91	..	..
Sweden	..	..	1.13	1.00	1.14	1.02	..	1.08	0.97	..	..
United Kingdom	..	..	1.29	1.00	1.31	1.03	..	1.15	0.85	..	..
B. Data based on complete coverage of sectors^c											
Australia	1.08	0.95	1.39	1.00	3.08	1.14	1.32	1.42	1.12	0.94	1.43
Canada	1.03	0.79	1.34	1.00	1.47	1.08	0.98	1.04	0.89	0.71	1.17
Czech Republic	1.02	0.81	1.19	1.00	1.25	1.04	1.07	1.37	1.06	0.93	0.93
France	0.97	0.69	1.16	1.00	1.30	0.85	1.02	1.22	0.95	0.73	1.03
Hungary	0.96	0.69	1.27	1.00	1.37	0.76	1.04	1.44	1.02	0.66	1.00
Netherlands	1.00	0.80	1.47	1.00	1.32	0.99	0.99	1.02	0.90	0.84	1.11
New Zealand	0.96	0.77	1.10	1.00	1.24	0.92	0.97	1.12	0.87	0.79	1.05
Poland	1.07	1.01	1.64	1.00	1.32	1.06	1.04	1.35	1.04	0.97	0.95
Switzerland	0.98	0.80	1.00	1.00	1.08	0.91	1.00	1.13	0.93	0.80	1.04
United States	0.98	0.60	1.10	1.00	1.26	0.94	0.91	1.11	0.83	0.61	1.00

.. Data not available.

a) The data in Panel A refer to: 1994 for France; 1996 for Sweden; and 1995 for all other countries. The data in Panel B refer to: 1999 for Hungary, the Netherlands and the United States; and 1998 for all other countries. The data refer to hourly earnings for all countries except for Australia, France (Panel B), Hungary and Poland where they refer to weekly or monthly earnings for full-time employees only.

b) The data exclude establishments with less than 10 employees.

c) The data for Hungary and Poland exclude establishments employing less than, respectively, 5 and 6 employees.

Source: For Panel A, the data were provided by EUROSTAT based on the European Structure of Earnings Survey. For Panel B, except for the United States, the data were provided by each country's national statistical authority based on the following sources: national labour force surveys for Australia, Canada, France, New Zealand and Switzerland; and national establishment surveys for the Czech Republic, Hungary, the Netherlands and Poland. For the United States, the data are OECD estimates based on microdata from the Current Population Survey (Outgoing Rotation Group file).

At a more detailed sectoral level, low-paid jobs tend to be concentrated in wholesale and retail trade and in hotels and restaurants. These sectors account for just over two-fifths of all low-paid jobs in the EU and just under one-third in the United States. In both economies, the relative risk of being in a low-paying job is particularly high for workers in hotels and restaurants (and wholesale and retail trade in Europe) and agriculture. There is substantial similarity between the EU and the United States in the relative incidence of high paying jobs by sector.

In general, America shows a greater clustering of both low-paid and high-paid jobs into fewer industry/occupation categories than is the case in Europe (Tables 3.C.1 and 3.C.3). This may reflect a narrower earnings distribution in most Europe countries than in the

United States, which results in a broader spectrum of categories being included in each wage group. It may also simply reflect the fact that there is considerable diversity across countries in the relative ranking of pay by industry and occupation. As can be seen in Table 3.C.2, while there is some consistency across European countries in the types of jobs that are classed as being high-paid, there is greater diversity for low-paid jobs.

C. Employment rates by wage level

Last year's chapter on services [OECD (2000)] pointed to a considerable gap in overall employment rates (*i.e.* the proportion of the working-age population in employment) between the United States and Europe which could mainly be accounted for by a much larger

— Table 3.7. Sectoral distribution of jobs by wage level in the European Union and in the United States, 1999^a —

Industries (ISIC-Rev. 3)	Percentage of all jobs at each wage level (low/medium/high) in each sector						Incidence of pay at each wage level (low/medium/high) in each sector relative to the overall incidence					
	Low paid		Medium paid		High paid		Low paid		Medium paid		High paid	
	EU	USA	EU	USA	EU	USA	EU	USA	EU	USA	EU	USA
Goods-producing sector	26.4	26.6	54.0	31.5	21.9	20.1	0.8	1.0	1.6	1.2	0.6	0.8
Agriculture (A + B)	11.3	6.9	2.3	0.0	0.4	0.5	2.5	2.7	0.5	0.0	0.1	0.2
Mining and utilities (C + E)	0.0	0.0	1.2	1.8	2.2	2.8	0.0	0.0	1.0	1.2	1.9	1.8
Manufacturing (D)	10.4	17.5	34.6	14.3	16.2	13.5	0.5	1.2	1.7	0.9	0.8	0.9
Construction (F)	4.6	2.2	15.9	15.4	3.1	3.2	0.6	0.3	2.0	2.3	0.4	0.5
Service sector	73.6	73.4	46.0	68.5	78.1	79.9	1.1	1.0	0.7	0.9	1.2	1.1
Wholesale and retail (G)	30.6	17.9	6.4	28.8	9.1	4.5	2.0	1.1	0.4	1.7	0.6	0.3
Hotels and restaurants (H)	10.2	14.6	0.8	4.0	1.5	0.0	2.5	2.4	0.2	0.6	0.4	0.0
Transport and communications (I)	3.5	0.0	6.4	10.1	8.0	6.6	0.6	0.0	1.1	1.9	1.3	1.2
Financial intermediation (J)	0.1	0.0	3.7	6.7	6.3	7.9	0.0	0.0	1.1	1.4	1.8	1.6
Real estate and business activities (K)	6.1	10.6	6.8	2.2	12.0	19.7	0.7	0.9	0.8	0.2	1.4	1.8
Public administration (L)	2.1	0.0	6.2	3.0	12.1	2.4	0.3	0.0	0.9	1.7	1.7	1.4
Education (M)	3.3	7.6	2.5	0.4	14.3	15.2	0.5	0.9	0.4	0.1	2.1	1.9
Health and social work (N)	7.5	15.3	10.8	3.6	9.7	14.1	0.8	1.4	1.2	0.3	1.0	1.2
Community, social and personal (O + P + Q)	10.2	7.3	2.4	9.6	5.1	9.5	1.7	0.8	0.4	1.1	0.9	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	1.0	1.0	1.0	1.0	1.0	1.0

a) For each country, jobs (*i.e.* employment in 76 industry/occupation cells) are ranked on the basis of average hourly earnings in 1995 and then placed into three groups of equal size in terms of employment shares. The EU data are weighted averages of all EU countries except Luxembourg and Sweden.

Sources: OECD calculations based on data from the European Community Household Panel Survey and the European Labour Force Survey for Europe and on data from the Current Population Survey (Outgoing Rotation Group file) for the United States.

service sector in the United States. The fact that employment rates in some low-paying personal services sectors are much higher in the United States than on average in Europe, has prompted some calls for measures to expand employment in these sectors in Europe. But to what extent can the overall employment gap be accounted for by a deficit of low-paid jobs in Europe?

To answer this question, jobs for each country were again classed into three broad wage groups (low, medium and high). Jobs (*i.e.* industry/occupation cells) in every country were assigned to the same wage group as the equivalent job in the United States based on its wage and employment structure for 1999. Thus, the comparison becomes one of looking at jobs that are low-, medium- or high-paying by American standards and seeing whether employment in these jobs relative to the working-age population is higher or lower in other OECD countries than in the United States. The issue is whether the higher employment rate in the United States relative to many other countries principally occurs in jobs that are poorly paid by American standards.

As it turns out, America has a job “surplus” relative to most countries, not just in low-paying jobs but equally in high-paying jobs. This can be seen in Table 3.8 which shows the difference in employment rates between the

United States and the European Union by sector and broad wage level, and in Chart 3.5 which makes the same comparison by wage level only but for a wider range of OECD countries.¹⁹ In 1999, the overall employment rate gap between the United States and EU countries was 13.7 percentage points. Around 7.5 percentage points can indeed be accounted for by higher American employment in relatively low-paying jobs. However, almost 8 percentage points of the overall gap can also be accounted for by higher American employment in relatively well paid jobs. The United States actually appears to have a small job “deficit” in medium-paid jobs. These results should perhaps not be too surprising. Earnings inequality in the United States is generally much higher than in most European countries, with a larger gap in earnings relative to median workers both for high-paid and low-paid workers [OECD (1996); Bardone *et al.* (1998)]. In combination with its higher overall employment rate, this implies that America must have relatively more jobs than Europe at both ends of the wages scale.

It can also be seen from Table 3.8 that these differences in employment rates at each wage level are not evenly spread across the sectors. Within services, higher American employment rates in low-paying jobs in wholesale and retail trade and in hotels and restaurants account for over 4 percentage points of the US-EU gap.²⁰ Outside

of these sectors, higher United States employment rates in well-paid jobs are fairly evenly spread across the business and social service sectors, except for public administration where there are relatively fewer jobs overall in the United States than in Europe.

Within the EU average, there are some individual country differences in the size of the jobs deficit compared with the United States and its distribution by sector (Chart 3.5 and Table 3.C.4). The overall jobs deficit is particularly large in Italy and Spain (between 23 to 24 percentage points compared with a gap of 13.7 percentage points for the EU as a whole). It is non-existent in Denmark and relatively small in Sweden, the Netherlands and the United Kingdom. However, the same broad patterns generally hold in each country, as for the EU as a whole, with respect to comparisons of employment rates at each wage level. Thus, a higher overall employment rate in the United States than in most European countries cannot be solely attributed to the fact that it has generated far more low-paying service jobs. The United States has also been more successful at generating jobs in relatively high-paying occupations in both the goods-producing and service sectors, although this is true to a much lesser extent in Finland, the Netherlands and the United Kingdom.

Outside of the EU, the United States actually has a jobs deficit in comparison with Switzerland, but only in

medium-paid jobs. It has a particularly large jobs surplus in comparison with Hungary, almost as large as in comparison with Italy and Spain.

D. Employment growth by wage level

Looking into employment growth by wage level can help to throw some light on at least two important issues. First, it helps to answer the question as to whether the expansion of the service sector has been accompanied by growth in low-paid jobs. Second, it can help to clarify whether there is any obvious trade-off between the quantity and quality of jobs in terms of comparing employment performance across countries.

As already seen (Section III.A), the extent to which service sector jobs are low paid in comparison with goods-producing jobs varies both across the different service sub-sectors within countries as well as across countries for the service sector as a whole. Employment shares have risen fastest in most countries in the producer and social service sectors [OECD (2000), Table 3.C.1], and these sectors appear to pay relatively well on average (Table 3.6). This may suggest that in most countries relatively high-paid jobs have expanded at a faster pace than low-paying ones. Whether this is the case or not will also depend on the extent to which job growth (job declines) have been greater (smaller) in higher-paying jobs within each sector than low-paying ones. Therefore, in the

Table 3.8. The US-EU employment rate gap by wage level and sector, 1999^a

Percentage points

Industries (ISIC-Rev. 3)	Wage level			
	Low paid	Medium paid	High paid	All wage levels
Goods-producing sector	0.0	-2.6	1.1	-1.6
Agriculture (A + B)	-0.8	..	0.0	-0.9
Mining and utilities (C + E)	..	0.2	0.3	0.4
Manufacturing (D)	0.7	-2.4	0.4	-1.3
Construction (F)	0.2	-0.4	0.4	0.2
Service sector	7.5	0.8	6.9	15.2
Wholesale and retail (G)	2.3	1.5	-0.6	3.2
Hotels and restaurants (H)	1.9	0.4	..	2.2
Transport and communications (I)	0.1	0.0	0.3	0.3
Financial intermediation (J)	..	0.5	1.0	1.6
Real estate and business activities (K)	0.4	0.7	2.2	3.3
Public administration (L)	..	-1.6	-1.4	-3.0
Education (M)	1.0	-0.5	1.4	1.9
Health and social work (N)	1.3	-1.0	2.3	2.6
Community, social and personal (O + P + Q)	0.5	1.0	1.6	3.1
Total	7.5	-1.8	7.9	13.7

.. Not applicable (*i.e.* no broad occupations in the US for the given industry have average earnings at the given wage level).

a) For each country, jobs (*i.e.* employment in 76 industry/occupation cells) are assigned to the same broad wage groups as the equivalent job in the United States. For the United States, jobs are first ranked on the basis of average hourly earnings in 1999 and then placed in one of three wage groups (low, medium, high) of equal size in terms of employment shares.

Source: OECD estimates based on data from the European Labour Force Survey for Europe and on data from the Current Population Survey (Outgoing Rotation Group file) for the United States.

following analysis, the same methodology is used as in Section III.B to classify jobs by broad wage levels (low, medium, high) based on each country's own structure of wages and employment in 1995. Employment changes over time are then traced out for each group of jobs.²¹

In the case of the United States, it can be seen that employment growth over the period 1989 to 1999 has been much more substantial in jobs that are relatively high-paid on average than in jobs that are low or medium paid on average (Chart 3.6, Panel A).²² This result is broadly similar to the results reported in Ilg (1996) and Ilg and Haugen (2000), although both studies found that employment growth in low-paying jobs was faster than for medium-paying ones.²³

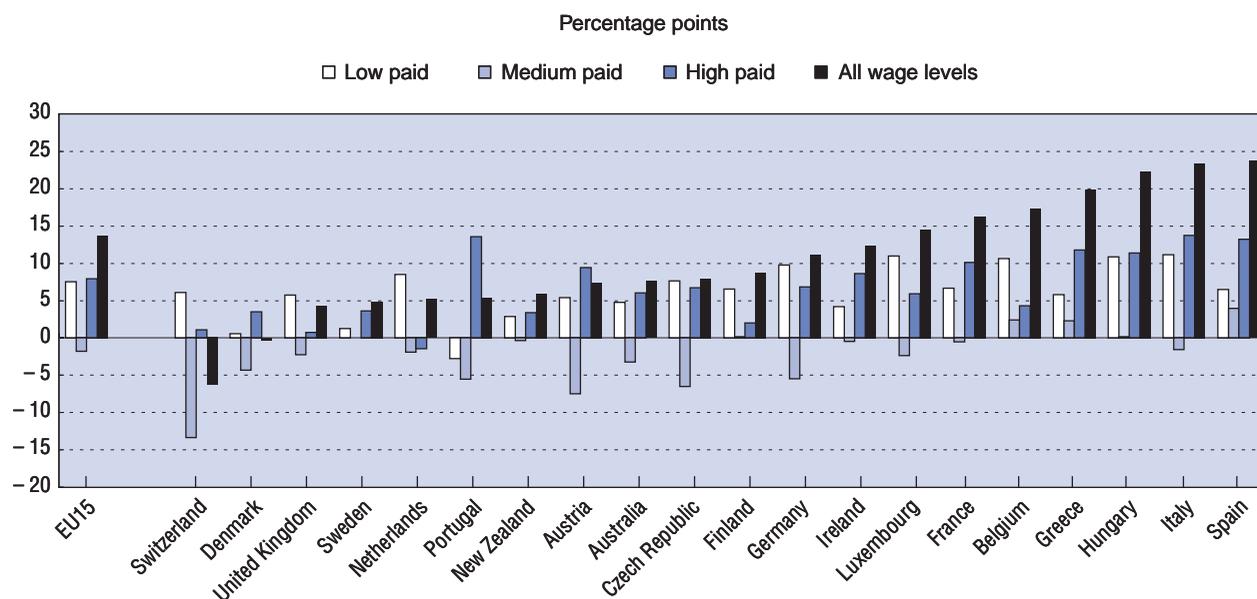
Of course, it is possible that this picture underestimates the extent to which low-wage employment has risen in the United States. Earnings inequality has risen substantially over time in the United States [OECD (1996)], and there may have been a rise in earnings dispersion for individual workers within each of the industry/occupation categories underlying this analysis. It could be, therefore, that a growing proportion of workers in each broad wage group is in fact receiving relatively low wages. This possibility can be examined by looking

at the proportion of all workers who earn either below two-third of median hourly earnings (*i.e.* low-paid workers) or more than one-and-a-half times median earnings (*i.e.* high-paid workers). The results in Chart 3.6 (Panel B) suggest that the incidence of low pay has fallen slightly over the 1990s matched by stability or a small rise in the incidence of high pay.

The distribution of job growth in other OECD countries over the 1990s by broad wage levels can also be carried out using the same methodology. The results are shown in Chart 3.7.²⁴

The European pattern of job growth by wage level has been similar to one for the United States. In both, there has been more substantial growth in jobs that are relatively high-paid on average than in those categories that are low- or medium-paid on average.²⁵ This pattern holds for most EU countries and for Switzerland.²⁶ However, with the notable exceptions of Ireland, the Netherlands and Spain, job growth in Europe has been slower at all wage levels than in the United States. In general, these results suggest that neither in the United States nor in European countries has a disproportionate part of growth in service sector employment been occurring in jobs that are on average low-paid.²⁷

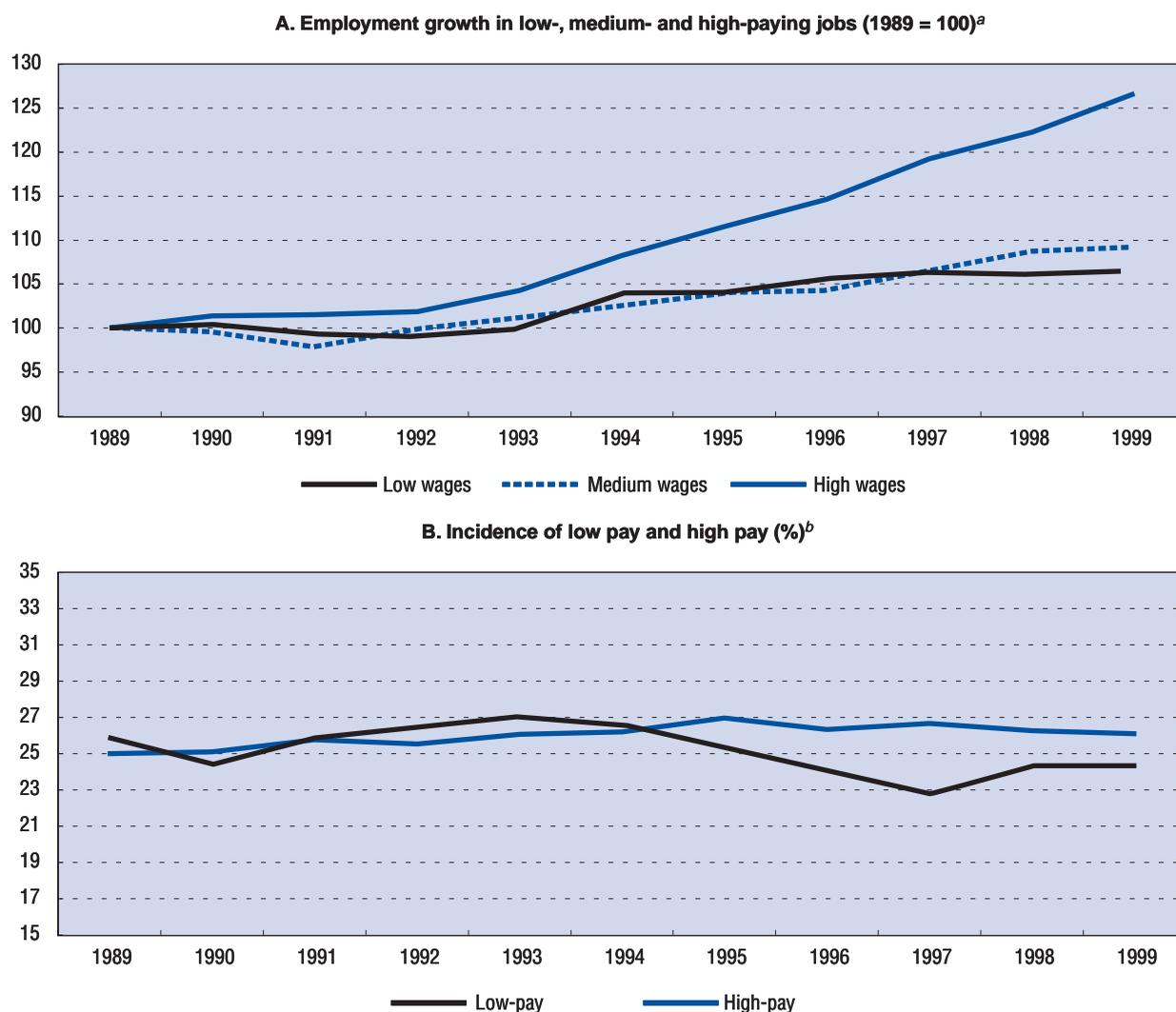
Chart 3.5. Employment rate gap between the United States and other OECD countries by wage level, 1999^a



a) For each country, jobs (*i.e.* employment in 76 industry/occupation cells) are assigned to the same broad wage groups as the equivalent job in the US. For the US, jobs are first ranked on the basis of average hourly earnings in 1999 and then placed in one of three wage groups (low, medium, high) of equal size in terms of employment shares. The data refer to 1998 for Australia, the Czech Republic, Hungary and New Zealand. Individual countries are ranked in ascending order by the size of their overall employment rate gap with the United States.

Sources: OECD estimates based on data from the European Labour Force Survey for EU countries, the Current Population Survey (Outgoing Rotation Group file) for the United States and national labour force surveys for other countries.

Chart 3.6. Employment trends in the US by wage level, 1989-1999



a) Jobs (*i.e.* employment in 76 industry/occupation cells) have been ranked on the basis of hourly earnings in 1995 and then placed into three groups of equal size in terms of employment shares.

b) The incidence of low pay (high pay) refers to the proportion of all workers earning less than (more than) two-thirds of (one-and-a-half times) median hourly earnings.

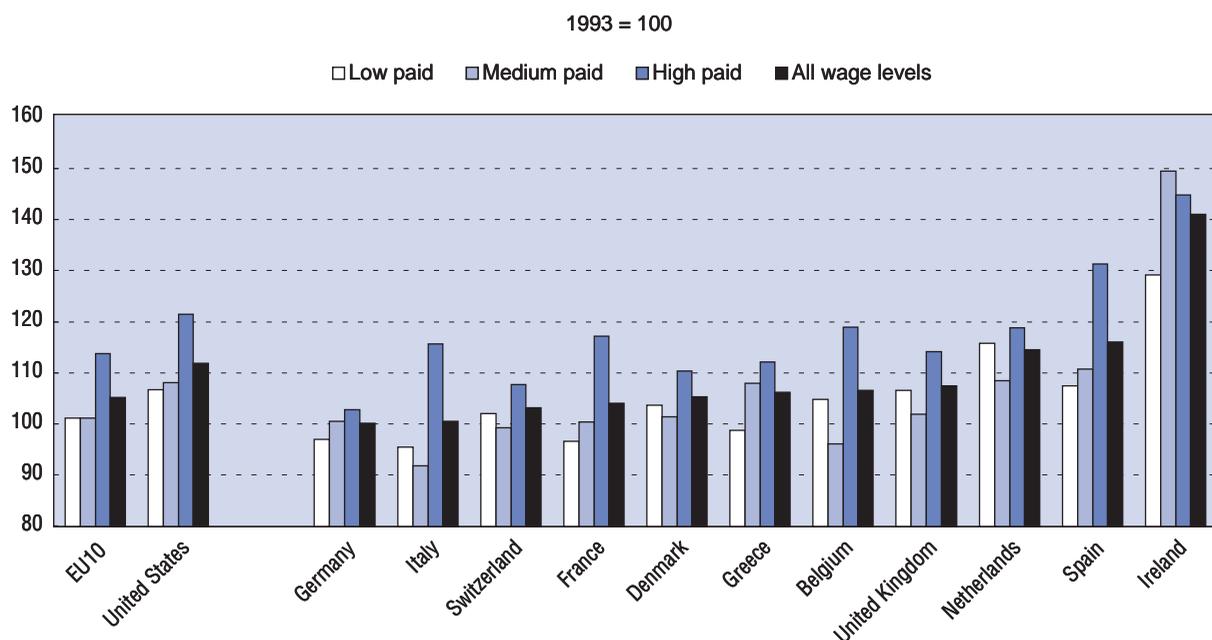
Source: OECD calculations based on data from the Current Population Survey (Outgoing Rotation Group file).

Conclusions

There are systematic differences across sectors in some job characteristics such as in the incidence of part-time work, in average job tenure and in the incidence of training. However, it is not clear that this can be ascribed to innate differences between jobs in the service sector and those in the goods-producing sector. Even within the service sector there is considerable variation in these job

characteristics. There is also considerable variation across countries and over time at the economy-wide level, and little of this variation appears to be accounted for by country differences or within-country shifts in the distribution of employment by sector.

More direct measures of job quality also fail to reveal any simple dichotomy between the goods-producing sector and the service sector; good jobs are not primarily located in the former and bad jobs in the latter. Service sector jobs

Chart 3.7. Employment growth by wage level in OECD countries, 1993-1999^a

a) For each country, jobs (*i.e.* employment in 76 industry/occupation cells) are ranked on the basis of average hourly earnings in 1995 and then placed into three groups of equal size in terms of employment shares. The growth in employment in the same jobs at each level is then calculated. The EU averages exclude Austria, Finland, Luxembourg, Portugal and Sweden. Countries are ranked in ascending order by their overall growth in employment.

Sources: OECD estimates based on data from the European Community Household Panel Survey and the European Labour Force Survey for EU countries, the Swiss Labour Force Survey for Switzerland and on data from the Current Population Survey (Outgoing Rotation Group file) for the United States.

cover the entire spectrum of job quality in terms of working conditions, job satisfaction and pay.²⁸ Jobs in hotels and restaurants and in some other personal services sectors score poorly across a range of job quality measures while those in financial services and in public administration generally score quite highly. On the other hand, agricultural and construction jobs often have poorer working conditions as well. But this high degree of heterogeneity across sectors also reflects the range of job quality within each sector. Within each sector, jobs with poor working conditions and low pay co-exist with those having good working conditions and high pay. Ultimately, what a job pays is more closely linked to occupation rather than to sector. Managers and professional workers in almost all sectors have jobs that are high paid on average while workers in elementary occupations generally have jobs that are low paid on average.

There also does not appear to be any simple trade-off between job quality and employment performance. While the United States has a higher proportion of its working-age population employed in low-paying jobs than in most other OECD countries, it also has a higher proportion employed in high-paying jobs. Moreover, the

continued growth of service sector employment in all countries over the 1990s has not been driven by an expansion of low-paid jobs. In most countries, including the United States, employment grew more rapidly in high-paying jobs than in low-paying or medium-paying ones.

The configuration of policies that will be appropriate for each country in terms of addressing issues of job quality will depend on its initial situation. On the one hand, for those countries with a relative high incidence of jobs involving low pay and poor working conditions, a range of options exist. Low wages can be propped up with income supplements. The entitlements of part-time and temporary workers or workers in small firms can be reviewed in relation to the entitlements of full-time and permanent workers and workers in larger firms. But these measures need to be balanced against the risk of reducing job opportunities for less-skilled and less-experienced workers. Ultimately, policies are required which encourage individuals and firms to invest more in skills acquisition. On the other hand, for countries wishing to improve their employment performance, the solution is not simply to stimulate job creation in poorly-paid service sector jobs but to implement a broad range of policies designed to

stimulate employment more generally. This may involve reviewing barriers to employment for low-skilled workers such as high labour costs as a result of high statutory minimum wages and/or high social security charges. But it will also depend on improving product-market competition, stimulating entrepreneurship more generally and

achieving sustained economic growth. In either case, it is difficult to lay the blame on either too many low-quality service sector jobs or too few. The quality and quantity of jobs in the service sector depend on institutional settings and labour market policies that affect employment in all sectors.

NOTES

1. For example, in March 2000, a significantly higher proportion of temporary workers than permanent workers in the EU reported being exposed to a range of poor working conditions. These included carrying heavy loads, working in painful positions, working at high speed, making repetitive movements, having no control over the pace of work or not having received training, etc. [Merli  and Paoli (2001)]. In some countries, non-wage benefits for part-time workers are lower than for full-time workers even on a *pro rata* basis, and the incidence of job-related training for part-timers appears to be lower than for full-timers even after controlling for a range of job and worker characteristics [OECD (1999)].
2. Country differences in the overall incidence of part-time and temporary work will be affected by how these characteristics are measured. In order to improve the comparability of the results, part-time work in this study is not based on self-assessment, but is defined for most countries as usual weekly hours of work of less than 30 hours. There are some national differences in the way permanent versus temporary jobs are defined [OECD (1996)]. This may limit somewhat the comparability of the overall incidence of temporary work, but should affect less the comparisons of the relative incidence of temporary work in different sectors.
3. See Murtough and Waite (2000) and Campbell and Burgess (2001) for a more detailed examination of the different types of working arrangements in Australia and the characteristics of the workers involved.
4. These data on average tenure can be heavily influenced by a relatively small number of workers with long tenure. Some sectors may record a high turnover of labour, but nevertheless have a core group of workers who remain in the same job for a considerable length of time. In this case, average job tenure will still tend to be quite high but will mask considerable job instability and job insecurity for some groups of workers. However, when the incidence of jobs with short-term tenure (of less than 12 months) and with long-term tenure (10 years and over) is measured (not shown), the sectoral pattern is by and large very similar to the pattern observed for average job tenure, *i.e.* short-tenure jobs are more prevalent in sectors with low average job tenure, and long-tenure jobs are more common in sectors with high average job tenure.
5. According to the Second European Survey of Working Conditions [European Foundation (1997)], the proportion of EU workers in 1995 whose job involves working with computers at least half of the time, in financial intermediation, real estate and business activities, and public administration was, respectively, 68, 42 and 32% compared with 26% in manufacturing.
6. Goux and Zamora (2001) report for France that computer training courses accounted for just over a quarter of all training courses that were paid for by enterprises in 1999.
7. Occupation is shown in Table 3.1 as a worker characteristic. It could be argued that it is more a characteristic of a worker’s job. Nevertheless, it is interesting to see to what extent other aspects of jobs are correlated with occupation.
8. If s^c refers to the overall incidence of part-time or temporary employment or to average job tenure in country c and s^a to the average for all countries then the difference ($s^c - s^a$) can be decomposed into the following three components:
$$\sum_i (e^c_i - e^a_i) \times s^a_i \quad (1)$$

$$\sum_i (s^c_i - s^a_i) \times e^a_i \quad (2)$$

$$\sum_i (e^c_i - e^a_i) \times (s^c_i - s^a_i) \quad (3)$$

where i refers to sector i and e refers to the employment share in sector i . The interaction effect turns out to be generally quite small and so is not separately shown in Chart 3.2.
9. The decomposition is the same as in note 8, except s^a and e^a here refer to job quality and the employment share, respectively, for the same country in the earlier period. As before, the interaction effect is not separately shown in Chart 3.3 since it is generally quite small.
10. There is some element of subjectivity involved in these questions about working conditions that may affect comparisons across countries. For example, what constitutes “monotonous tasks” may not be precisely defined and may instead rely on each respondent’s judgement about what this means.
11. See Clark (1997).
12. An ordered probit regression model was used in each case with controls for country and year effects in addition to controls for various worker and job characteristics.
13. The importance of these more direct measures of skill for explaining variations in wages across jobs is shown in Pierce (1999).
14. One potential problem with using pay as a proxy for job quality is raised by the theory of compensating differentials. This theory suggests that for similar jobs in terms of skill requirements, those jobs with poorer working conditions, *e.g.* dirtier or involving a more intense rhythm of work, will be compensated by higher rates of pay than those with better working conditions. In other words, based on pay alone, the job with poorer working conditions may well be classed

- as being a better quality job than the one with better working conditions. However, even in this case, the higher level of pay may itself be a source of extra “utility” in terms of conferring greater social status, say, than a lower-paid job and so may still be correctly indicating a better quality job. It is not clear how important these compensating differentials are in practice. In a recent American study by Pierce (1999), a negative rather than a positive wage premium is reported for jobs that were physically more demanding than other jobs that were identical in other observable respects. However, the same study does report a positive wage premium for jobs involving greater work risks. But both these dimensions of jobs account for only a very small part of the overall variation in wages across jobs. Other factors appear to be much more important such as the knowledge required for carrying out a job, and the complexity involved, as well as a worker’s occupation and industry of employment.
15. Germany is not shown in Table 3.6 as hourly earnings data at a detailed level for the service sector are not generally available. However, using a mixture of microcensus and social security data for Germany, Freeman and Schettkat (2001) suggest that inter-industry wage differentials are quite similar in both western Germany and the United States.
 16. The much higher level of average earnings in Portugal and Italy in the distributive service sector relative to the manufacturing sector may be due to the fact that the data for these two countries are based on an establishment survey which excludes establishments with less than 10 employees. These excluded establishments will typically have lower-than-average earnings in comparison with larger establishments.
 17. A similar exercise has been carried out for the United States by Ilg (1996) and Ilg and Haugen (2000) using 90 industry/occupation categories.
 18. It should be remembered that these comparisons are based on average wages for industry/occupation cells and so do not refer to wages of individual workers. For instance, some workers may have a low wage despite a relatively high average wage for all workers in the same industry/occupation class as them.
 19. As in the preceding analysis, 76 separate industry/occupation cells are identified. However, for every country, these cells are assigned to the same broad wage groups as the equivalent cell in the United States based on its wage and employment structure for 1999. The results appear to be relatively insensitive to the year chosen to categorise jobs by broad wage groups. Similar results are obtained using 1995 instead of 1999 as the reference year. It should be recalled, however, that because of difficulties in comparing sectoral and occupational data across countries, these results should not be taken as precise estimates but as indicating broad differences between the United States and other OECD countries.
 20. The results of detailed case studies of differences in employment structures in retail between France and the United States are reported in Jany-Catrice and Baret (2001).
 21. There are a number of limitations that should be borne in mind when interpreting the results of this analysis. First, some employment changes within each group may be due to spurious fluctuations in the reported industry/occupation cell that a person is working in. However, unless there have been major changes in the underlying survey (such as in its methodology, design or industry/occupation classifications), this should not affect longer-run trends. Second, the analysis uses a fixed reference year to classify jobs by wage level but these broad wage differentials between jobs may change over time which may shift the composition of these wage groups. But this should not greatly affect the analysis over a relatively short time span.
 22. The actual increase in employment for each broad grouping should be only taken as an indication of the order of magnitude of job growth rather than as a precise estimate. There are various statistical breaks, notably in 1990 and 1994, because of the introduction of new population benchmarks and other changes in the survey methodology underlying the data. However, while these breaks affect absolute levels, they are less likely to have affected the relative difference between the three broad groups in terms of job growth.
 23. The methods used in both studies and in this chapter to class jobs by wage level are broadly comparable. However, there are a number of differences that may account for the divergence in some of the results between these studies and the chapter. One important difference is that in these studies jobs were classed on the basis of weekly earnings rather than hourly earnings. Thus, many part-time workers were classed as low paid irrespective of their hourly rate of pay. Another difference is that the breakdown of jobs by industry and occupation in these studies is also somewhat finer than the one used in this chapter.
 24. The data refer to job growth over the 6-year period between 1993 and 1999. Comparable European data on employment by industry and occupation are generally not available prior to 1993.
 25. A similar pattern of higher-than-average employment growth in more skilled occupations and in high-education sectors is reported for EU countries by the European Commission (2000). A similar finding for Australia is also reached in the Joint Governments’ Submission (2001) based on an analysis of average earnings and total hours worked by very detailed occupations. They find that from 1986 to 2000 growth was consistently strongest in high-paid jobs. Over the period 1986-1995, this was followed by growth in low-paid jobs and, over the period 1996-2000, by growth in medium-paid jobs.
 26. Gubian and Ponthieux (2000) obtain a somewhat different result for France. They find that the employment share of low-skilled jobs rose slightly between 1994 and 2000, following a substantial decline since at least 1984. They link this small improvement to the various measures taken since 1993 to lower employer social security charges for low-paid workers. Their study, however, is not directly comparable with the results of the analysis used in this chapter since they classify jobs by occupation only rather than using wage levels to rank jobs and a classification of jobs by both sector and occupation. Moreover, their study examines job growth for employees only and they are looking at a more restrictive group of low-skilled workers, accounting for under 25% of employees between 1994 and 2000. In this chapter, on the other hand, employment growth is examined for all workers, and the low-paid group accounts for roughly one-third of the total.
 27. Freeman and Schettkat (2001) provide a long-run comparison of job growth in the United States and western Germany over

the period 1970 to 1995. They also find that job growth in the United States mainly took place at both the low and high ends of the wage scale whereas for Germany there was a slight decline in low-wage jobs, a stagnation in high-wage jobs and modest growth in jobs just below the mean wage. They also dismiss the conjecture that service sector employment growth has been concentrated in low-wage industries. Finally, they are unable to find much evidence linking the different patterns of

employment growth between the United States and Germany with differences in wage structures and changes in relative wages by sector.

28. Meisenheimer II (1998) reaches a similar conclusion for the United States based on a comparison across sectors of pay, employee benefits, job security, occupational structure and occupational safety.

Annex 3.A

Sectoral classification

For the data on part-time and temporary work, job tenure, training and earnings (Table 3.6 only), the sectoral classification is the same as was used in last year's chapter on services [OECD (2000)]. The correspondence between these nine broad sectors

and sub-sectors and the ISIC rev. 3 and NACE rev. 1 codes (at the 2-digit level) is shown in Table 3.A.1. Elsewhere the sectoral breakdown is primarily based on industries at the one-digit level according to ISIC rev. 3.

Table 3.A.1. Definition of sectors used in analysis of part-time and temporary employment, job tenure and training

Sector	ISIC rev. 3/NACE rev. 1
Agriculture, hunting and forestry	01, 02, 05
Mining and quarrying	10 to 14
Manufacturing	15 to 37
Electricity, gas and water supply	40 to 41
Construction	45
Producer services	
Business and professional services	71 to 74
Financial services	65, 67
Insurance	66
Real estate	70
Distributive services	
Retail trade	50, 52
Wholesale trade	51
Transportation	60 to 63
Communication	64
Personal services	
Hotels and restaurants	55
Recreational and cultural services	92
Domestic services	95
Other personal services	93
Social services	
Government proper	75, 99
Health services	85
Educational services	80
Miscellaneous social services	90 to 91

Annex 3.B

Job characteristics by sector and country: detailed tables

The data corresponding to Chart 3.1 at an individual country level are shown below in Tables 3.B.1-3.B.4.

Table 3.B.1. Relative importance of part-time employment by sector, 1999^a

	Ratio of incidence of part-time employment in each sector to average incidence for all sectors										Incidence in per cent All sectors	
	Goods-producing sector						Service sector					
	Total	Agriculture, hunting and forestry	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Construction	Total	Producer services	Distributive services	Personal services		Social services
Australia ^b	0.49	0.90	0.10	0.38	0.15	0.49	1.18	0.87	1.18	1.48	1.24	26.2
Austria	0.50	0.81	0.79	0.48	0.21	0.33	1.28	1.35	1.28	1.62	1.12	12.3
Belgium	0.27	0.57	0.16	0.26	0.21	0.22	1.30	0.64	0.73	1.39	1.90	20.1
Canada ^c	0.51	0.97	0.18	0.47	0.11	0.47	1.21	0.99	1.11	1.81	1.15	18.7
Czech Republic ^c	0.58	0.89	0.10	0.65	0.45	0.31	1.37	1.19	1.21	1.51	1.57	5.7
Denmark	0.49	0.78	..	0.52	0.37	0.28	1.22	0.81	1.17	2.41	1.22	15.3
Finland	0.57	1.33	1.01	0.41	0.06	0.41	1.23	1.15	1.10	2.22	1.10	9.4
France	0.33	0.91	0.13	0.27	0.19	0.24	1.29	0.79	0.69	2.18	1.67	14.7
Germany	0.50	0.79	0.15	0.53	0.28	0.34	1.30	1.20	1.22	1.65	1.30	17.2
Greece	0.64	1.16	0.07	0.28	0.00	0.31	1.24	0.47	0.34	1.23	2.74	7.9
Ireland	0.34	0.61	..	0.29	0.19	0.28	1.36	0.72	1.12	1.94	1.70	18.3
Italy	0.44	0.88	0.21	0.38	0.26	0.34	1.34	0.95	0.64	1.59	2.11	11.9
Japan ^{c, d}	0.88	1.76	..	0.79	0.80	0.63	1.07	1.06	0.98	1.35	1.06	23.5
Korea ^{c, d}	1.15	1.88	0.19	0.58	0.18	1.46	0.90	0.63	0.64	0.93	1.67	6.8
Luxembourg	0.36	1.11	..	0.27	0.58	0.34	1.21	0.75	0.79	2.05	1.55	12.1
Netherlands	0.43	0.83	0.32	0.44	0.28	0.21	1.10	0.73	1.00	1.64	1.25	30.5
New Zealand ^c	0.57	0.98	0.10	0.43	0.24	0.44	1.21	0.94	1.09	1.66	1.28	23.5
Norway ^e	0.52	0.92	0.27	0.53	0.30	0.32	1.17	0.69	1.01	1.46	1.37	26.4
Portugal	0.98	2.95	..	0.29	0.28	0.26	1.02	0.87	0.57	1.95	0.96	9.4
Spain	0.41	0.86	0.24	0.38	0.28	0.17	1.36	1.34	0.86	2.85	0.99	7.9
Sweden	0.53	1.48	..	0.45	0.20	0.36	1.18	0.83	1.05	1.68	1.30	16.2
Switzerland	0.51	0.90	..	0.48	0.41	0.37	1.21	0.84	0.89	1.48	1.59	25.9
United Kingdom	0.34	0.74	0.11	0.33	0.26	0.29	1.25	0.78	1.21	1.94	1.34	22.9
United States	0.37	1.27	0.10	0.26	0.15	0.37	1.22	0.80	1.17	2.18	1.13	12.9
OECD average^f	0.53	1.10	0.25	0.42	0.27	0.38	1.22	0.89	0.96	1.76	1.43	16.5

.. Data not available.

a) Part-time employment refers to usual weekly hours of work of less than 30, except where noted otherwise.

b) Part-time work refers to employed persons whose usual and actual weekly hours of work are less than 35.

c) 1998 instead of 1999.

d) Part-time employment refers to actual weekly hours of less than 35. Sanitation services and activities of membership organisations (ISIC-Rev. 3 sectors 90 and 91) are included in personal services instead of social services.

e) Part-time employment includes persons who usually work between 30 and less than 37 hours per week and who declare themselves to be working part-time.

f) Unweighted average of countries shown in table.

Source: EU countries, European Labour Force Survey (data supplied by EUROSTAT); for the United States, OECD estimates based on outgoing rotation group microdata from the Current Population Survey; and for the other countries, data supplied by national statistical authorities based on their national labour force surveys.

Table 3.B.2. Relative importance of temporary employment by sector, 1999^a

	Ratio of incidence of temporary employment in each sector to average incidence for all sectors										Incidence in per cent All sectors	
	Goods-producing sector						Service sector					
	Total	Agriculture, hunting and forestry	Mining and quarrying	Manufac- turing	Electricity, gas and water supply	Construc- tion	Total	Producer services	Distributive services	Personal services		Social services
Australia ^b	0.75	1.98	0.08	0.54	0.25	1.04	1.07	0.83	1.31	1.77	0.68	23.3
Australia ^b	0.54	0.38	2.09	0.39	1.83	0.45	1.13	0.88	0.29	0.89	2.25	4.2
Austria	1.06	1.55	0.73	0.85	0.82	1.55	0.97	0.69	0.96	1.87	0.81	7.9
Belgium	0.71	1.80	1.25	0.72	0.56	0.50	1.12	0.91	0.52	2.35	1.38	10.3
Canada ^c	0.91	3.03	0.72	0.53	0.65	1.94	1.04	0.96	0.73	1.32	1.20	11.8
Czech Republic ^c	0.79	0.98	0.62	0.83	0.69	0.62	1.19	1.00	0.80	1.25	1.65	6.0
Denmark	0.97	2.53	..	0.69	0.65	1.41	1.01	0.59	0.77	1.58	1.21	10.1
Finland	0.79	1.72	0.84	0.63	0.31	1.10	1.09	0.73	0.70	1.43	1.40	18.2
France	0.96	1.52	0.18	0.89	0.52	1.16	1.02	0.83	0.80	1.21	1.18	14.0
France ^d	2.00	0.25	0.85	2.10	0.76	2.32	0.45	0.52	0.63	0.17	0.11	3.0
Germany	0.92	1.97	0.63	0.76	0.83	1.19	1.05	0.85	0.86	1.36	1.20	12.7
Greece	1.07	2.98	0.44	0.66	0.23	1.97	0.97	0.74	0.66	2.58	0.65	13.0
Ireland	0.69	1.02	1.35	0.53	0.48	1.05	1.15	0.69	1.01	2.31	1.01	4.9
Italy	0.99	3.71	0.30	0.63	0.50	1.40	1.01	0.86	0.87	1.88	0.93	9.9
Japan ^{c, e}	0.72	1.97	..	0.64	0.24	0.86	1.15	0.94	1.11	1.81	0.84	11.4
Luxembourg	0.56	2.16	..	0.41	0.00	0.75	1.12	0.83	1.11	1.53	1.21	3.3
Netherlands	0.71	1.86	0.45	0.73	0.55	0.39	0.89	0.79	0.85	2.38	0.67	12.0
Norway	0.71	1.64	0.34	0.63	0.91	0.69	1.09	0.61	0.73	1.43	1.41	10.6
Portugal	0.91	1.69	0.95	0.65	0.64	1.41	1.07	1.14	1.02	1.48	0.91	18.7
Spain	1.24	1.87	0.64	0.87	0.44	1.88	0.86	0.76	0.92	1.22	0.66	32.7
Sweden	0.57	1.28	0.26	0.52	0.15	0.74	1.16	0.86	0.84	1.96	1.30	13.9
Switzerland	0.85	1.97	..	0.61	0.99	1.34	1.06	0.84	0.84	1.48	1.21	11.7
United Kingdom	0.72	1.46	0.76	0.60	1.07	1.00	1.10	0.98	0.60	1.57	1.42	6.8
United States ^f	0.81	2.46	0.60	0.50	0.72	1.41	1.06	1.18	0.53	1.16	1.38	4.5
OECD average^g	0.84	1.96	0.62	0.66	0.55	1.15	1.06	0.85	0.84	1.68	1.10	12.2

.. Data not available.

a) The data refer to wage and salary workers only.

b) The data for the first row for Australia refer to workers who are not entitled to paid holiday leave and/or paid sick leave and who considered themselves to be casual workers. These data are not strictly comparable with the data for the other countries as they include a substantial proportion of workers who appear to be in an “ongoing” job with no fixed finishing date. The data for the second row refer to workers with a fixed-term contract. In both cases, the data refer to 2000.

c) 1998 instead of 1999.

d) The data refer to temporary work agency employment only.

e) Sanitation services and activities of membership organisations (ISIC-Rev. 3 sectors 90 and 91) are included in personal services instead of social services.

f) The data for the United State refer to “contingent” workers *i.e.* all workers who expect their work will end in the near future for economic (as opposed to personal) reasons.

g) Unweighted average of countries shown in table, including first row only for Australia and France.

Source: For Australia, ABS, *Employment Arrangements and Superannuation*, April to June 2000, Cat. No. 6361.0; EU countries, European Labour Force Survey (data supplied by EUROSTAT) and, for France (second row), “Le Travail Temporaire au Premier Semestre 2000 : Nouvelle Accélération”, *Premières Informations*, DARES, No. 08.1, February, 2001; for the United States, OECD estimates based on microdata from the “contingent workers” supplement to the Current Population Survey; and for the other countries, data supplied by national statistical authorities based on their national labour force surveys.

Table 3.B.3. Sectoral differences in average job tenure, 1999^a

	Ratio of average tenure for each sector to average tenure for all sectors										Level (years) All sectors	
	Goods-producing sector						Service sector					
	Total	Agriculture, hunting and forestry	Mining and quarrying	Manufac- turing	Electricity, gas and water supply	Construc- tion	Total	Producer services	Distributive services	Personal services		Social services
Australia ^b	1.22	1.72	1.20	1.11	1.66	1.10	0.92	0.80	0.87	0.78	1.16	6.9
Austria ^c	1.12	1.65	1.30	1.01	1.51	0.90	0.92	0.93	0.88	0.76	1.03	10.6
Belgium	1.02	1.27	1.04	1.04	1.37	0.83	0.99	0.88	0.97	0.80	1.09	11.7
Canada ^d	1.13	1.74	1.11	1.04	1.70	0.91	0.94	0.83	0.90	0.61	1.21	8.1
Denmark	1.07	1.54	0.97	1.01	1.54	0.97	0.97	1.00	0.94	0.71	1.02	8.5
Finland	1.13	1.53	1.16	1.09	1.71	0.77	0.93	0.85	0.95	0.69	1.01	10.1
France	1.09	1.33	1.35	1.09	1.44	0.90	0.96	0.87	0.92	0.63	1.12	11.2
Germany	1.07	1.33	1.61	1.11	1.38	0.83	0.96	0.88	0.94	0.69	1.08	10.3
Greece	1.28	1.84	0.90	0.83	1.13	0.92	0.81	0.76	0.82	0.56	0.95	13.3
Ireland	1.14	1.98	1.42	0.88	1.98	0.79	0.92	0.75	0.90	0.56	1.24	9.4
Italy	0.97	1.27	1.12	0.93	1.28	0.85	1.02	0.93	1.01	0.76	1.16	12.1
Luxembourg	1.16	1.65	1.43	1.37	1.40	0.74	0.95	0.82	0.93	0.73	1.10	10.9
Netherlands	1.20	1.62	1.39	1.12	1.73	1.11	0.93	0.81	0.86	0.74	1.10	9.6
Portugal	1.11	1.93	0.82	0.90	1.14	0.61	0.90	0.73	0.91	0.74	1.03	11.8
Spain	1.02	1.39	1.13	1.08	1.48	0.62	0.99	0.91	0.97	0.70	1.23	10.1
Sweden	1.11	1.48	1.48	1.06	1.47	1.04	0.96	0.79	0.92	0.61	1.10	11.5
Switzerland	1.25	1.88	1.49	1.14	1.04	1.06	0.90	0.84	0.96	0.81	0.92	9.4
United Kingdom	1.17	1.78	1.27	1.11	1.46	1.15	0.94	0.85	0.87	0.68	1.12	8.3
United States ^e	1.19	0.88	1.48	1.28	1.88	0.85	0.94	0.79	0.91	0.59	1.18	6.7
OECD average^f	1.13	1.57	1.25	1.06	1.49	0.89	0.94	0.84	0.92	0.69	1.10	10.0

a) The data refer to employees, except for Canada and Australia where they refer to all persons in employment.

b) The data refer to 2000 and are OECD estimates. The original data refer to the distribution of employed persons by tenure intervals. Average tenure has been calculated by using the mid-point of each closed interval and assuming a mid-point of 27.5 years for the group with tenure of 20 years and over.

c) The data refer to 1995.

d) The data refer to 1998.

e) The data refer to 2000.

f) Unweighted average of countries shown in table.

Source: For Australia, ABS, *Labour Mobility, Australia*, August 2000, Cat. No. 6209.0; EU countries, European Labour Force Survey (data supplied by EUROSTAT); for the United States, OECD estimates based on microdata from the "Job Tenure" supplement to the Current Population Survey; and for the other countries, data supplied by national statistical authorities based on their national labour force surveys.

Table 3.B.4. Relative importance of continuing vocational training by sector, 1997^a

	Ratio of incidence of training in each sector to average incidence for all sectors										Incidence in per cent All sectors	
	Goods-producing sector						Service sector					
	Total	Agriculture, hunting and forestry	Mining and quarrying	Manufac- turing	Electricity, gas and water supply	Construc- tion	Total	Producer services	Distributive services	Personal services ^b		Social services ^c
Austria	0.72	0.43	0.47	0.80	1.38	0.45	1.13	1.21	0.94	0.69	1.43	7.9
Belgium	0.58	0.38	1.80	0.55	1.69	0.44	1.19	1.48	0.75	0.90	1.38	3.4
Denmark	0.60	0.15	0.91	0.65	1.43	0.39	1.17	1.28	0.74	1.06	1.35	18.4
Finland	0.70	0.67	0.28	0.77	1.00	0.41	1.14	1.53	0.71	0.97	1.30	18.0
France ^d	0.49	0.24	0.84	0.57	0.75	0.22	1.21	1.11	0.58	0.86	1.74	1.9
Germany	0.71	0.47	0.50	0.73	1.40	0.62	1.18	1.27	0.62	0.93	1.64	4.2
Greece	0.68	0.00	0.34	0.63	1.25	0.00	1.21	1.69	0.71	0.42	1.63	0.7
Hungary	0.50	0.21	0.48	0.56	0.79	0.33	1.32	2.11	0.78	0.94	1.64	4.2
Iceland	0.62	0.32	0.00	0.62	1.72	0.77	1.17	1.25	0.80	0.83	1.42	14.0
Ireland	0.77	0.22	0.82	0.86	1.20	0.59	1.11	1.52	0.60	0.55	1.46	6.6
Italy	0.46	0.20	0.58	0.50	1.21	0.25	1.33	1.17	0.74	0.65	1.87	3.8
Luxembourg	0.63	0.00	0.00	1.02	0.00	0.07	1.16	1.84	0.72	0.43	1.21	2.5
Netherlands	0.88	0.59	1.62	0.91	1.26	0.77	1.05	1.40	0.83	0.89	1.07	14.9
Norway	0.82	0.19	1.21	0.83	1.32	0.74	1.06	1.12	0.81	0.66	1.27	11.7
Portugal	0.38	0.11	0.77	0.41	0.59	0.31	1.36	2.24	0.68	0.40	1.85	3.2
Spain	0.38	0.22	0.00	0.46	1.08	0.21	1.34	1.37	0.61	0.79	2.10	3.1
Sweden	0.92	0.77	0.61	0.93	1.61	0.75	1.03	1.14	0.82	0.76	1.14	18.3
United Kingdom	0.71	0.37	0.93	0.69	1.61	0.67	1.11	1.12	0.65	0.73	1.54	14.2
OECD average^e	0.65	0.31	0.66	0.70	1.21	0.46	1.18	1.46	0.74	0.74	1.49	8.8

.. Data not available.

a) The incidence of training refers to the proportion of employees aged 25 to 54 who had undertaken training in the past 4 weeks, where training refers to education or training for a reason other than secondary or initial vocational training.

b) Including sanitation services and activities of membership organisations (ISIC-Rev. 3 sectors 90 and 91).

c) Excluding sanitation services and activities of membership organisations (ISIC-Rev. 3 sectors 90 and 91).

d) The data refer to current training, while the reference period used by the other countries is any time during the previous 4 weeks.

e) Unweighted average of countries shown in table, excluding France.

Source: European Labour Force Survey (data supplied by EUROSTAT).

Annex 3.C

Employment by wage level: sources, methods and supplementary tables

This annex describes in more detail how the distribution of employment by wage level was calculated, and gives the sources and definitions for the underlying data. It also contains supplementary tables on the industry and occupational distribution of employment by wage level (corresponding to Table 3.7) and on the employment rate gap by wage level and industry between the United States and individual OECD countries (corresponding to Table 3.8 and Chart 3.5).

Methodology

The same methodology was used for all countries for which the distribution of employment by wage level was estimated.

First, the same 76 separate industry/occupation cells were identified for each country. These cells are based on ISIC and ISCO breakdowns at the one-digit level (see Table 3.C.1 for details). Some further aggregation of industries and occupations was required because of the relatively small sample size of the European Community Household Panel (used for EU countries), which meant that hourly earnings could not be calculated for some industry/occupation cells at the one-digit level.

For the analysis of the growth and distribution of employment by wage level, average hourly earnings were then calculated for each cell using hourly earnings data for each country for 1995. The analysis of the employment rate gap between the United States and other OECD countries uses the US wage structure to rank jobs by wage level and so hourly earnings data were calculated for 1999 for the United States only.

Finally, cells were assigned to one of three groups (low paid, medium paid and high paid) of roughly equal size in terms of employment shares. This was carried out by cumulating total employment in ascending order from low wage cells to high wage cells. A cell was assigned to a higher broad wage group if the difference between the cumulated running total and either one- or two-thirds of total employment accounted for more than half of the employment in that cell. Thus, employment at each broad wage level corresponds to roughly a third of total employment for the year used to rank cells by their average hourly earnings, but is greater or less than this in other years.

Sources and definitions

For the total employment data, the sources are the *European Labour Force Survey* for the EU countries (as provided by Eurostat), the *Current Population Survey* for the United States (as

estimated by the OECD based on microdata from the Outgoing Rotation Group file) and national labour force surveys for the other countries (as provided by the national authorities). For some countries and for some years, either the industry or occupation of a relatively small proportion of employed persons was unknown. In these cases, an iterative procedure was used to assign these persons to an industry/occupation cell based on the proportions of persons in each industry and occupation for which this information was known. In the case of Ireland, employment by industry was available for 1999 but not by occupation. Therefore, this split was estimated based on the industry/occupation split in 1997.

For the data on hourly earnings data, the sources are the *European Community Household Panel* (ECHP) for the EU countries (as estimated by the OECD based on microdata from the ECHP), the *Current Population Survey* for the United States (as estimated by the OECD based on microdata from the Outgoing Rotation Group file) and the Swiss Labour Force Survey for Switzerland (as provided by the Swiss national statistical office).

For the United States, hourly earnings refer either to hourly earnings of employees paid by the hour or to usual weekly earnings of employees divided by their usual weekly hours of work. In all cases, the data refer to gross earnings. A number of adjustments to the data were made as suggested by Mishel *et al.* (2001). Individual observations were discarded where hourly earnings were either below \$0.5 or above \$100 in terms of 1989 CPI-U-X1 dollars and where reported usual weekly hours of work were outside of the range 1-99. Earnings were also imputed for the relatively small number of observations affected by top coding.

For the EU countries, hourly earnings refer to net monthly earnings (net only of social security contributions in the case of France) divided by usual weekly hours of work. In order to partially correct for possible spurious earnings observations and because of small sample sizes, the earnings data were derived by averaging across the 1994, 1995 and 1996 waves of the ECHP. The 1994 and 1996 data were deflated to 1995 wage levels by dividing through by the overall growth in average hourly earnings between these years and 1995.

For Switzerland, hourly earnings are calculated by dividing gross annual earnings by 52 and then by usual weekly hours of work. Individual observations were discarded where hourly earnings were either below CHF 2 or above CHF 200.

Table 3.C.1. Employment shares by wage level in the European Union, 1999^a

Percentage of all jobs at each wage level (low/medium/high) in each industry/occupation cell

Industries (ISIC-Rev. 3)	Occupations (ISCO-88 codes)	Managers and professionals (1 + 2)	Technicians and assoc. prof. (3)	Clerks (4)	Service and sales workers (5)	Craft and trade workers (6 + 7)	Plant and machine operators (8)	Elementary occupations (9)	Clerks and service workers (4 + 5)	Manual workers (6 + 7 + 8 + 9)	Plant and elementary (8 + 9)	Total
Low-paid jobs												
Agriculture (A + B)		0.2	0.2						0.3	10.7		11.3
Mining and utilities (C + E)		0.0	0.0			0.0			0.0		0.0	0.0
Manufacturing (D)		0.0	0.0	0.0	0.8	5.1	0.0	4.4				10.4
Construction (F)		0.1	0.4			0.9	0.9	1.7	0.6			4.6
Wholesale and retail (G)		0.0	1.9	5.7	14.4	4.0	1.6	2.9				30.6
Hotels and restaurants (H)		0.8	0.1	0.2	7.5					1.6		10.2
Transport and communications (I)		0.0	0.0	0.1	0.2	0.0	2.7	0.5				3.5
Financial intermediation (J)		0.0	0.0						0.0	0.1		0.1
Real estate and business activities (K)		0.0	0.0	1.1	0.7	0.3	0.4	3.7				6.1
Public administration (L)		0.0	0.0	0.6	0.1	0.3	0.1	1.1				2.1
Education (M)		0.0	0.0	0.3	1.2					1.8		3.3
Health and social work (N)		0.0	0.0	1.2	4.9					1.5		7.5
Community, social and personal (O + P + Q)		0.0	0.7	0.3	4.2	0.6	0.5	3.8				10.2
Total		1.0	3.2	9.5	33.9	11.3	6.2	18.3	0.9	15.7	0.0	100.0
Medium-paid jobs												
Agriculture (A + B)		0.1	0.0						0.1	2.0		2.3
Mining and utilities (C + E)		0.0	0.2			0.4			0.2		0.4	1.2
Manufacturing (D)		0.0	0.4	4.1	0.8	15.2	14.1	0.0				34.6
Construction (F)		0.0	0.6			13.6	0.6	0.3	0.9			15.9
Wholesale and retail (G)		0.0	2.6	1.1	0.5	2.1	0.1	0.1				6.4
Hotels and restaurants (H)		0.4	0.1	0.2	0.0					0.1		0.8
Transport and communications (I)		0.0	0.0	3.6	0.4	0.5	1.4	0.6				6.4
Financial intermediation (J)		0.0	0.0						3.6	0.1		3.7
Real estate and business activities (K)		0.0	2.2	3.6	0.1	0.9	0.0	0.0				6.8
Public administration (L)		0.0	0.1	2.6	1.8	0.8	0.3	0.7				6.2
Education (M)		0.0	1.4	0.8	0.1					0.3		2.5
Health and social work (N)		0.0	5.9	1.2	2.7					1.0		10.8
Community, social and personal (O + P + Q)		0.0	0.2	1.2	0.1	0.3	0.1	0.5				2.4
Total		0.5	13.6	18.5	6.3	33.7	16.6	2.2	4.8	3.5	0.4	100.0
High-paid jobs												
Agriculture (A + B)		0.4	0.0						0.0	0.0		0.4
Mining and utilities (C + E)		0.5	0.4			0.7			0.3		0.2	2.2
Manufacturing (D)		8.0	6.4	1.8	0.0	0.0	0.0	0.0				16.2
Construction (F)		2.2	0.2			0.6	0.0	0.0	0.0			3.1
Wholesale and retail (G)		8.3	0.8	0.0	0.0	0.0	0.0	0.0				9.1
Hotels and restaurants (H)		1.4	0.1	0.0	0.0					0.0		1.5
Transport and communications (I)		2.0	1.9	1.3	0.1	0.5	2.1	0.0				8.0
Financial intermediation (J)		2.2	2.7						1.3	0.0		6.3
Real estate and business activities (K)		8.9	3.1	0.0	0.0	0.0	0.0	0.0				12.0
Public administration (L)		4.3	4.4	1.8	1.3	0.1	0.1	0.0				12.1
Education (M)		12.6	1.5	0.2	0.0					0.0		14.3
Health and social work (N)		6.8	2.8	0.1	0.0					0.0		9.7
Community, social and personal (O + P + Q)		3.4	1.3	0.4	0.0	0.0	0.1	0.0				5.1
Total		61.2	25.8	5.5	1.4	1.9	2.3	0.1	1.6	0.0	0.2	100.0

a) For each country, jobs (*i.e.* employment in 76 industry/occupation cells) are ranked on the basis of average hourly earnings in 1995 and then placed into three groups of equal size in terms of employment shares. The data are weighted averages of all EU countries except Luxembourg and Sweden.

Sources: OECD estimates based on data from the European Community Household Panel Survey and the European Labour Force Survey.

Table 3.C.2. Location of jobs by wage level in the European Union, 1995

Number of countries (out of a maximum of 13) in each industry/occupation cell by wage level

Industries (ISIC-Rev. 3)	Occupations (ISCO-88 codes)	Managers and professionals (1 + 2)	Technicians and assoc. prof. (3)	Clerks (4)	Service and sales workers (5)	Craft and trade workers (6 + 7)	Plant and machine operators (8)	Elementary occupations (9)	Clerks and service workers (4 + 5)	Manual workers (6 + 7 + 8 + 9)	Plant and elementary (8+9)	Total	As a % of max. possible cases
Low-paid jobs													
Agriculture (A + B)		3	4						9	12		28	54
Mining and utilities (C + E)		0	0			0			0		1	1	2
Manufacturing (D)		0	0	1	8	2	0	12				23	25
Construction (F)		1	1			2	4	9	5			22	28
Wholesale and retail (G)		0	1	8	12	9	10	12				52	57
Hotels and restaurants (H)		5	4	8	13					12		42	66
Transport and communications (I)		0	0	1	3	1	5	6				16	18
Financial intermediation (J)		0	0							5		5	10
Real estate and business activities (K)		0	0	4	10	5	6	13				38	42
Public administration (L)		0	0	2	1	2	3	6				14	15
Education (M)		0	1	3	10					9		23	35
Health and social work (N)		0	0	2	9					7		18	28
Community, social and personal (O + P + Q)		0	1	2	12	6	6	11				38	42
Total		9	12	31	78	27	34	69	14	45	1	320	32
As a per cent of maximum possible cases		5	7	26	67	26	37	76	27	69	8	32	
Medium-paid jobs													
Agriculture (A + B)		4	5						4	1		14	27
Mining and utilities (C + E)		0	1			6			5		5	17	26
Manufacturing (D)		0	2	10	5	11	13	1				42	46
Construction (F)		0	4			9	9	3	8			33	42
Wholesale and retail (G)		0	6	5	1	4	3	1				20	22
Hotels and restaurants (H)		4	7	4						1		16	25
Transport and communications (I)		0	0	6	6	6	6	6				30	33
Financial intermediation (J)		0	1						8	5		14	27
Real estate and business activities (K)		0	6	9	2	7	3					27	30
Public administration (L)		0	2	6	6	9	7	5				35	38
Education (M)		0	5	9	3					4		21	32
Health and social work (N)		0	7	10	4					6		27	42
Community, social and personal (O + P + Q)		0	2	9	1	7	5	2				26	29
Total		8	48	68	28	59	46	18	25	17	5	322	33
As a per cent of maximum possible cases		5	28	58	24	57	51	20	48	26	38	33	
High-paid jobs													
Agriculture (A + B)		6	4						0	0		10	19
Mining and utilities (C + E)		13	12			7			8		7	47	72
Manufacturing (D)		13	11	2	0	0	0	0				26	29
Construction (F)		12	8			2	0	1	0			23	29
Wholesale and retail (G)		13	6	0	0	0	0	0				19	21
Hotels and restaurants (H)		4	2	1	0					0		7	11
Transport and communications (I)		13	13	6	4	6	2	1				45	49
Financial intermediation (J)		13	12						5	3		33	63
Real estate and business activities (K)		13	7	0	1	1	4					26	29
Public administration (L)		13	11	5	6	2	3	2				42	46
Education (M)		13	7	1	0					0		21	32
Health and social work (N)		13	6	1	0					0		20	31
Community, social and personal (O + P + Q)		13	10	2	0	0	2	0				27	30
Total		152	109	18	11	18	11	4	13	3	7	346	35
As a per cent of maximum possible cases		90	64	15	9	17	12	4	25	5	54	35	

Notes and sources: See Table 3.C.1.

Table 3.C.3. Employment share by wage level in the United States, 1999^a

Percentage of all jobs at each wage level (low/medium/high) in each industry/occupation cell

Industries (ISIC-Rev. 3)	Occupations (ISCO-88 codes)	Managers and professionals (1 + 2)	Technicians and assoc. prof. (3)	Clerks (4)	Service and sales workers (5)	Craft and trade workers (6 + 7)	Plant and machine operators (8)	Elementary occupations (9)	Clerks and service workers (4 + 5)	Manual workers (6 + 7 + 8 + 9)	Plant and elementary (8 + 9)	Total
Low-paid jobs												
Agriculture (A + B)	0.0	0.2							0.4	6.4		6.9
Mining and utilities (C + E)	0.0	0.0			0.0				0.0		0.0	0.0
Manufacturing (D)	0.0	0.0	0.0	0.0	0.0	14.8	2.7					17.5
Construction (F)	0.0	0.0			0.0	0.0	2.2		0.0			2.2
Wholesale and retail (G)	0.0	0.0	9.7	0.0	0.0	3.2	5.1					17.9
Hotels and restaurants (H)	0.0	0.0	1.8	11.0						1.8		14.6
Transport and communications (I)	0.0	0.0	0.0	0.0	0.0	0.0	0.0					0.0
Financial intermediation (J)	0.0	0.0							0.0	0.0		0.0
Real estate and business activities (K)	0.0	0.0	5.2	1.8	0.0	1.1	2.5					10.6
Public administration (L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0					0.0
Education (M)	0.0	0.0	4.0	1.6						2.0		7.6
Health and social work (N)	0.0	0.0	4.8	8.6						1.9		15.3
Community, social and personal (O + P + Q)	0.0	0.0	4.0	0.0	0.0	0.8	2.6					7.3
Total	0.0	0.2	29.4	22.9	0.0	19.9	15.1	0.4	12.2	0.0	100.0	
Medium-paid jobs												
Agriculture (A + B)	0.0	0.0							0.0	0.0		0.0
Mining and utilities (C + E)	0.0	0.0			0.0				0.7		1.0	1.8
Manufacturing (D)	0.0	0.0	4.2	0.5	9.6	0.0	0.0					14.3
Construction (F)	0.0	0.3			12.5	1.6	0.0		1.0			15.4
Wholesale and retail (G)	0.0	3.4	0.0	19.9	5.5	0.0	0.0					28.8
Hotels and restaurants (H)	3.9	0.1	0.0	0.0						0.0		4.0
Transport and communications (I)	0.0	0.0	3.3	0.0	0.0	5.5	1.3					10.1
Financial intermediation (J)	0.0	0.0							6.5	0.2		6.7
Real estate and business activities (K)	0.0	0.0	0.0	0.0	2.2	0.0	0.0					2.2
Public administration (L)	0.0	0.0	2.4	0.2	0.0	0.1	0.3					3.0
Education (M)	0.0	0.4	0.0	0.0						0.0		0.4
Health and social work (N)	0.0	3.6	0.0	0.0						0.0		3.6
Community, social and personal (O + P + Q)	0.0	0.0	0.0	8.5	1.1	0.0	0.0					9.6
Total	3.9	7.8	9.9	29.2	30.9	7.2	1.6	8.3	0.2	1.0	100.0	
High-paid jobs												
Agriculture (A + B)	0.5	0.0							0.0	0.0		0.5
Mining and utilities (C + E)	1.2	0.2			1.4				0.0		0.0	2.8
Manufacturing (D)	10.5	3.0	0.0	0.0	0.0	0.0	0.0					13.5
Construction (F)	3.2	0.0			0.0	0.0	0.0		0.0			3.2
Wholesale and retail (G)	4.5	0.0	0.0	0.0	0.0	0.0	0.0					4.5
Hotels and restaurants (H)	0.0	0.0	0.0	0.0						0.0		0.0
Transport and communications (I)	3.0	1.2	0.0	0.4	1.9	0.0	0.0					6.6
Financial intermediation (J)	4.8	3.1							0.0	0.0		7.9
Real estate and business activities (K)	15.1	4.7	0.0	0.0	0.0	0.0	0.0					19.7
Public administration (L)	1.7	0.3	0.0	0.0	0.4	0.0	0.0					2.4
Education (M)	15.2	0.0	0.0	0.0						0.0		15.2
Health and social work (N)	14.1	0.0	0.0	0.0						0.0		14.1
Community, social and personal (O + P + Q)	8.7	0.8	0.0	0.0	0.0	0.0	0.0					9.5
Total	82.5	13.4	0.0	0.4	3.7	0.0	0.0	0.0	0.0	0.0	0.0	100.0

a) Jobs (i.e. employment in 76 industry/occupation cells) are ranked on the basis of average hourly earnings in 1995 and then placed into three groups of equal size in terms of employment shares.

Source: OECD estimates based on data from the Current Population Survey (Outgoing Rotation Group file).

Table 3.C.4. Employment rate gap between the United States and other OECD countries
by wage level and sector, 1999^a

	Percentage points																			
	Australia	Austria	Belgium	Czech Republic	Denmark	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Luxembourg	Netherlands	New Zealand	Portugal	Spain	Sweden	Switzerland	United Kingdom
Low paid																				
Goods-producing sector	-0.1	-1.3	1.5	-2.9	-1.6	-1.5	-0.1	1.2	-4.9	-0.5	-3.1	-0.1	2.7	2.3	-3.7	-7.7	-1.8	-0.7	0.5	1.7
Agriculture (A + B)	-1.4	-2.4	0.5	-1.7	-0.6	-2.4	-0.8	0.0	-7.8	-2.0	-3.6	-1.0	0.6	0.7	-3.7	-7.1	-2.0	-0.3	-2.2	0.9
Mining and utilities (C + E)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Manufacturing (D)	1.4	0.9	0.6	-1.4	-0.9	0.5	0.2	0.9	2.6	1.2	1.4	0.7	2.0	1.3	0.2	0.1	0.7	-0.9	2.3	0.6
Construction (F)	0.0	0.2	0.4	0.1	-0.1	0.3	0.5	0.3	0.3	0.2	-0.8	0.2	0.1	0.4	-0.2	-0.6	-0.4	0.5	0.3	0.1
Service sector	4.9	6.7	9.1	10.6	2.2	8.1	6.7	8.5	10.7	11.4	7.2	11.2	8.2	6.1	6.5	4.9	8.3	1.9	5.6	4.0
Wholesale and retail (G)	0.5	1.9	2.5	3.1	2.0	3.5	2.4	2.2	3.2	3.5	2.4	3.3	2.5	1.3	1.4	2.1	2.5	2.6	1.8	1.6
Hotels and restaurants (H)	1.5	0.6	2.8	1.8	2.4	1.9	2.4	2.2	1.2	2.4	0.9	2.0	2.1	2.0	1.4	0.9	1.4	2.1	1.8	1.4
Transport and communications (I)	-0.1	0.0	-0.1	-0.1	-0.2	-0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.0	0.0	-0.9	0.2	0.1	0.0	-0.3	0.0
Financial intermediation (J)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Real estate and business activities (K)	0.0	0.2	0.6	0.9	0.2	-0.1	0.1	0.5	1.1	0.9	0.7	0.9	0.5	0.0	0.2	0.6	0.2	0.3	0.2	0.2
Public administration (L)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Education (M)	0.7	1.4	1.2	0.8	0.8	0.9	0.8	1.4	1.6	0.7	0.9	1.3	1.5	1.4	1.0	0.4	1.5	0.6	1.2	0.1
Health and social work (N)	1.9	1.8	1.4	3.1	-3.5	1.0	0.4	1.5	2.9	2.7	1.9	3.0	1.8	0.5	2.8	1.9	2.6	-4.8	0.5	0.3
Community, social and personal (O + P + Q)	0.2	0.6	0.8	0.9	0.5	0.9	0.6	0.7	0.6	1.2	0.4	0.6	-0.2	1.0	0.7	-1.1	0.0	1.1	0.3	0.5
Total	4.8	5.4	10.6	7.6	0.5	6.5	6.7	9.7	5.8	10.9	4.1	11.1	10.9	8.5	2.8	-2.7	6.5	1.2	6.0	5.7
Medium paid																				
Goods-producing sector	-0.3	-5.2	0.4	-7.4	-2.5	-1.4	-0.4	-5.4	-1.4	-3.6	-2.2	-3.0	-0.8	-0.5	-0.5	-9.0	-1.3	-0.1	-4.6	-1.5
Agriculture (A + B)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mining and utilities (C + E)	-0.1	0.1	0.2	-0.4	0.2	0.1	0.2	0.1	0.1	-0.3	0.1	0.2	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.1
Manufacturing (D)	0.2	-4.0	-0.3	-5.1	-2.0	-1.7	-0.7	-4.3	-1.7	-4.1	-2.4	-3.4	0.0	-0.7	-0.6	-6.8	-1.1	-0.4	-3.5	-1.4
Construction (F)	-0.4	-1.3	0.5	-1.9	-0.7	0.1	0.0	-1.3	0.2	0.8	0.1	0.3	-1.0	-0.1	0.0	-2.4	-0.5	0.1	-1.4	-0.2
Service sector	-2.9	-2.2	2.0	1.0	-1.8	1.5	-0.1	0.0	3.7	3.7	1.7	1.4	-1.6	-1.3	0.2	3.5	5.3	0.1	-8.7	-0.7
Wholesale and retail (G)	-0.5	0.5	2.7	1.5	0.7	1.5	2.7	1.3	2.1	1.9	1.4	0.0	2.5	1.2	1.4	1.3	2.3	1.0	-1.5	1.4
Hotels and restaurants (H)	0.0	0.2	0.1	0.6	0.5	0.5	0.3	0.4	-0.1	0.7	-0.3	0.9	0.4	0.2	0.0	0.2	0.1	0.7	0.5	0.2
Transport and communications (I)	-0.5	-1.0	-0.2	-1.1	-0.4	-0.3	0.1	0.2	-0.1	-0.6	-0.5	0.5	-0.3	-0.5	1.1	0.9	0.3	-0.8	-0.6	-0.7
Financial intermediation (J)	0.3	-0.5	0.1	1.1	0.6	0.9	0.7	0.2	0.8	1.3	0.1	0.8	-0.9	0.9	0.5	0.9	0.8	1.4	-0.1	0.1
Real estate and business activities (K)	0.1	0.6	1.1	1.3	0.9	1.1	0.5	0.7	1.3	1.3	0.3	1.0	1.1	0.3	0.2	1.1	1.2	0.3	-0.4	-0.2
Public administration (L)	-1.3	-0.9	-2.7	-0.9	-1.2	-0.7	-2.4	-1.0	-1.7	-1.0	-1.1	-2.1	-2.8	-1.2	-1.0	-1.9	-1.2	-0.4	-1.4	-1.6
Education (M)	-0.1	-0.8	-0.3	-0.6	-0.5	-0.2	-1.2	-0.7	-0.1	-0.3	0.0	-0.2	-0.6	-0.3	-0.8	-0.8	-0.1	-0.6	-1.7	-0.4
Health and social work (N)	0.4	-1.6	-0.1	-0.9	-3.6	-1.9	-1.1	-2.0	0.1	-0.7	0.8	-0.6	-1.0	-3.0	0.2	0.4	0.6	-2.1	-3.0	-0.6
Community, social and personal (O + P + Q)	-1.3	1.2	1.4	0.1	1.3	0.7	0.4	0.9	1.4	1.2	1.1	1.2	0.1	1.0	-1.4	1.2	1.2	0.7	-0.6	1.0
Total	-3.2	-7.4	2.4	-6.5	-4.3	0.1	-0.5	-5.4	2.3	0.1	-0.5	-1.5	-2.4	-1.9	-0.3	-5.5	3.9	0.0	-13.3	-2.2

Table 3.C.4. **Employment rate gap between the United States and other OECD countries by wage level and sector, 1999^a (cont.)**

	Percentage points																			
	Australia	Austria	Belgium	Czech Republic	Denmark	Finland	France	Germany	Greece	Hungary	Ireland	Italy	Luxembourg	Netherlands	New Zealand	Portugal	Spain	Sweden	Switzerland	United Kingdom
High paid																				
Goods-producing sector	2.2	1.4	1.0	-1.5	0.6	-0.5	1.6	-0.1	3.3	1.4	1.2	2.5	2.9	-0.4	1.6	2.1	2.7	0.4	-0.3	-0.4
Agriculture (A + B)	0.1	0.0	0.0	-0.1	0.0	0.0	0.1	0.1	0.1	-0.2	0.1	0.0	0.1	-1.0	-0.1	0.0	0.0	0.1	0.0	-0.1
Mining and utilities (C + E)	0.2	0.2	0.3	-0.9	0.3	0.3	0.3	0.1	0.2	-0.3	0.4	0.4	0.4	0.4	0.5	0.2	0.4	0.3	0.2	0.3
Manufacturing (D)	1.6	0.6	0.3	-0.6	-0.2	-1.0	0.5	-0.6	2.4	1.3	0.7	1.6	2.0	0.1	0.6	1.7	1.8	-0.6	-1.1	-0.6
Construction (F)	0.4	0.6	0.4	0.1	0.5	0.2	0.7	0.3	0.6	0.5	0.0	0.5	0.4	0.2	0.5	0.2	0.5	0.6	0.5	0.0
Service sector	3.8	8.0	3.3	8.2	2.9	2.5	8.5	6.9	8.4	10.0	7.4	11.2	3.0	-1.1	1.7	11.5	10.5	3.2	1.4	1.1
Wholesale and retail (G)	0.0	-1.0	-1.3	-0.2	-0.9	-0.9	-0.5	-0.2	-2.4	0.2	-0.2	0.9	-0.4	-1.2	-1.7	-1.0	-0.9	-0.2	-0.7	-1.6
Hotels and restaurants (H)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Transport and communications (I)	0.2	0.4	-0.2	-0.1	-0.4	-0.4	0.0	0.3	0.5	0.2	0.7	0.6	-0.2	0.2	-0.4	0.6	0.6	0.2	-0.1	0.0
Financial intermediation (J)	0.8	1.5	1.1	1.2	0.7	1.5	1.1	1.1	1.5	1.1	1.2	1.2	-1.9	0.1	1.0	1.6	1.5	0.8	-0.4	0.5
Real estate and business activities (K)	0.8	3.2	2.6	2.7	0.6	1.2	2.3	2.4	3.3	3.8	2.2	3.1	2.4	-0.3	0.7	3.7	3.6	0.3	0.2	0.6
Public administration (L)	-0.8	-1.9	-0.9	-1.6	-1.4	-1.1	-1.1	-2.7	-0.4	-1.1	-0.5	-0.6	-1.4	-2.4	-1.6	-0.7	-0.6	-1.5	-1.6	-1.1
Education (M)	0.5	1.3	-0.2	1.7	0.4	0.9	2.0	1.9	1.1	1.1	1.1	1.2	1.0	0.1	0.5	2.3	1.6	0.6	1.2	0.6
Health and social work (N)	1.3	2.9	0.6	3.0	2.3	0.0	2.9	2.6	2.9	3.1	1.1	2.8	2.7	1.1	2.1	2.9	2.6	1.6	1.9	1.0
Community, social and personal (O + P + Q)	0.8	1.5	1.5	1.5	1.5	1.2	1.7	1.4	1.9	1.7	1.8	2.1	0.7	1.2	1.1	2.0	2.0	1.4	0.9	1.0
Total	6.0	9.4	4.3	6.7	3.5	2.0	10.1	6.8	11.7	11.3	8.6	13.7	5.9	-1.4	3.3	13.6	13.2	3.6	1.1	0.7
All wage levels																				
Goods-producing sector	1.8	-5.1	2.9	-11.9	-3.6	-3.5	1.1	-4.3	-3.0	-2.7	-4.0	-0.5	4.9	1.4	-2.6	-14.5	-0.4	-0.4	-4.5	-0.3
Agriculture (A + B)	-1.4	-2.4	0.5	-1.8	-0.6	-2.4	-0.6	0.1	-7.7	-2.1	-3.6	-1.0	0.7	-0.4	-3.8	-7.1	-2.0	-0.2	-2.2	0.8
Mining and utilities (C + E)	0.1	0.4	0.6	-1.3	0.5	0.4	0.5	0.3	0.3	-0.6	0.5	0.5	0.6	0.7	0.6	0.4	0.6	0.5	0.5	0.4
Manufacturing (D)	3.1	-2.6	0.5	-7.1	-3.1	-2.2	0.1	-4.0	3.3	-1.6	-0.2	-1.1	4.0	0.6	0.2	-5.0	1.5	-1.8	-2.3	-1.4
Construction (F)	0.0	-0.5	1.4	-1.7	-0.4	0.7	1.2	-0.6	1.1	1.5	-0.7	1.0	-0.5	0.5	0.3	-2.8	-0.4	1.1	-0.6	0.0
Service sector	5.7	12.4	14.4	19.7	3.3	12.1	15.1	15.5	22.8	25.0	16.3	23.8	9.6	3.7	8.5	19.9	24.0	5.2	-1.7	4.5
Wholesale and retail (G)	0.0	1.4	3.9	4.4	1.8	4.2	4.5	3.3	2.9	5.6	3.6	4.1	4.6	1.3	1.1	2.5	4.0	3.4	-0.4	1.4
Hotels and restaurants (H)	1.6	0.8	2.8	2.4	2.9	2.5	2.7	2.6	1.1	3.0	0.6	2.8	2.5	2.2	1.4	1.0	1.5	2.8	2.3	1.7
Transport and communications (I)	-0.3	-0.5	-0.5	-1.3	-0.9	-0.8	0.2	0.5	0.5	-0.4	0.3	1.2	-0.5	-0.2	-0.1	1.7	1.1	-0.6	-1.0	-0.7
Financial intermediation (J)	1.1	1.0	1.3	2.2	1.3	2.4	1.8	1.3	2.3	2.4	1.2	2.0	-2.8	1.0	1.5	2.5	2.3	2.2	-0.5	0.6
Real estate and business activities (K)	0.9	4.0	4.3	4.9	1.7	2.2	3.0	3.6	5.7	6.0	3.1	5.0	4.0	0.0	1.1	5.4	5.0	0.9	0.0	0.6
Public administration (L)	-2.1	-2.8	-3.5	-2.6	-2.6	-1.8	-3.5	-3.7	-2.1	-2.2	-1.6	-2.8	-4.3	-3.6	-2.6	-2.5	-1.8	-2.0	-2.9	-2.7
Education (M)	1.2	2.0	0.7	1.9	0.8	1.7	1.5	2.6	2.6	1.4	2.1	2.3	2.0	1.2	0.7	1.9	3.0	0.6	0.8	0.4
Health and social work (N)	3.7	3.1	1.9	5.3	-4.9	-1.0	2.2	2.2	5.9	5.0	3.7	5.2	3.6	-1.4	5.1	5.3	5.8	-5.3	-0.6	0.7
Community, social and personal (O + P + Q)	-0.3	3.3	3.7	2.5	3.4	2.8	2.7	3.0	3.9	4.1	3.4	3.9	0.6	3.2	0.4	2.1	3.2	3.2	0.6	2.5
Total	7.5	7.4	17.3	7.8	-0.3	8.6	16.2	11.1	19.8	22.3	12.3	23.3	14.5	5.2	5.8	5.4	23.7	4.8	-6.2	4.2

.. Not applicable (*i.e.* no broad occupations in the US for the given industry have average earnings at the given wage level).

a) For each country, jobs (*i.e.* employment in 76 industry/occupation cells) are assigned to the same broad wage groups as the equivalent job in the United States. US jobs are first ranked on the basis of average hourly earnings in 1999 and then placed in one of three wage groups (low, medium, high) of equal size in terms of employment shares. The data refer to 1998 for Australia, the Czech Republic, Hungary and New Zealand.

Source: OECD estimates based on data from the European Labour Force Survey for the EU countries, the Current Population Survey (Outgoing Rotation Group file) for the United States and national labour force surveys for the other countries.

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