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3.1 Introduction

The debate on the structural evolution of the division of labour and its impact on job quality have been central in the Social Sciences for the last 200 years, and they remain so. The issue at stake is nothing less than the impact that technical and organizational change, the ultimate source of all economic progress, has on the condition of human beings as producers (homo faber). As we shall see in the next section, this debate was initiated in the late-18th century with a profound pessimism even amongst the most passionate defenders of the division of labour in industrial capitalism, such as Adam Smith; it later inclined towards a somewhat naïve optimism amongst the theorists of the post-industrial society; and recently, it resumed a more-pessimistic tone, although more nuanced this time, asserting that current technical and organizational change tends to generate polarization in employment structures.

In fact, it is a central issue not only in the scientific debate but also in the wider political or even social debate. In a context of globalization in which governments and international institutions favour a (fallacious) rhetoric of competition between countries or regions, the evaluation of the structural change in national productive systems becomes an evaluation of the success of the different countries in the Darwinian struggle for the highest value added activities (for an example of this kind of argument, see OECD 2007b: 19–23). In the European context, the long period of economic expansion initiated in the early 1990s (which coincides more or less with the period covered here) favoured a gradual shift in the emphasis of European employment policies, from an obsessive focus on quantity (see European Commission 1993) to a more balanced approach that, at least rhetorically, gave equal importance to the quantitative and qualitative aspects (as evidenced in the motto ‘more and better jobs’ of the Lisbon strategy; see European Council 2000).

In this chapter, we will try to evaluate from a qualitative perspective the transformation of the employment structures of 23 European countries between 1995 and 2007, linking this evaluation to the wider Social Sciences debate about the impact of structural change in the division of labour on job quality. To this end, as with the rest of contributions to this volume, we will use the ‘jobs approach’, a relatively new methodology which had never been applied to such a large sample of countries. This methodology was originally proposed by the economist Joseph E. Stiglitz when he was the Chief Economic Advisor to the US president in 1996 (US Council of Economic Advisors 1996), and was refined and consolidated by the sociologists Erik Olin Wright and Rachel Dwyer in two subsequent papers (Wright and Dwyer 2000, 2003). The main idea is simple, but very powerful analytically: it basically consists of shifting the unit of analysis of labour market from individuals to jobs, understanding jobs as specific occupations within specific sectors. The set of jobs defined in this way in an economy constitutes a jobs matrix, which can be understood as a stylized representation of the structure of the labour market, or in more general terms, as a structural snapshot of the state of the division of labour in a certain place and time. Using any data source which incorporates the variables of occupation and sector, we can add further information on each job, including ordinal measures of their quality. Drawing from such measures, the jobs are then regrouped in categories according to their quality, and the evolution in the number of workers in each category is used to evaluate the nature of structural change over a specific time period.

In this chapter, we will follow in general terms the approach proposed by Erik Olin Wright and Rachel Dwyer in their analysis of the US employment expansion of 1990s, covering 23 European countries, over a period of 13 years (1995–2007). In Section 3.2, we will discuss the theoretical foundations of this approach and the hypotheses that we will try to test in this chapter. In Section 3.3, we will evaluate the general patterns of structural change in European labour markets. In Section 3.4, we will compare our results to those of a recent similar study which reached rather different conclusions (Goos et al. 2009). In Section 3.5, we will analyse in some detail the sector dynamics which underlie the general patterns of structural change in employment, and we will relate them to the employment destandardization process which is taking place in some European countries.
3.2 Theoretical foundations and hypotheses

3.2.1 The jobs matrix as a structural representation of the division of labour

Previous studies using the same approach did not include much discussion of its theoretical foundations; these studies were more oriented by policy than theory (with the possible exception of Goos and Manning 2007) and carried out with the specific objective of evaluating the quality of jobs created (and destroyed) in specific periods of economic expansion. The use of jobs, defined by crossing the variables of occupation and sector, instead of individuals as unit of analysis was justified in these studies more as a heuristic convenience than as a substantially different way to analyse or conceptualize the labour market. But there must be some reason why using jobs rather than individuals as unit of analysis is heuristically convenient, and this reason must be related to the nature of the classifications of occupation and sector on which this approach is based.

The labour market is not an amorphous mass of individual agents who join and leave transactions depending on relative prices, but a relatively stable structure (though continuously changing) of relations between agents, formed by positions that transcend the individuals who occupy them. The principle which lies behind this structure is the division of labour: the subdivision of tasks and its allocation to specialized workers increase enormously the total productivity of labour, but it requires complex coordination mechanisms and stable labour positions, and hence a relatively stable structure of economic relations.

Adam Smith, who ‘discovered’ the principle of the division of labour for contemporary Social Sciences (Smith 1776: I.1.8), viewed all economic transactions from the perspective of the market, and hence spoke of a single principle of the division of labour (exemplified by his famous pin factory). It was Marx, in an explicit critique of Adam Smith, who argued that there were two radically different forms of the division of labour, with different subjects and coordination mechanisms. On the one hand, the market coordinates the division of labour between independent producers, or more in general, between independent producing units (firms): such division of labour corresponds to the different branches of industry, and Marx called it the ‘social division of labour’ (Marx 1867: 14.4). But within companies, the mechanism that assigns and coordinates labour is not the market, but the direct authority of the capitalist (or the manager): hence, it involves a different form of division of labour, which Marx called ‘manufacturing division of labour’, and which corresponds with the levels of skills and hierarchy within firms. A very similar distinction lies behind the institutionalist theory of the firm of Ronald Coase, which argues that firms exist at all (something which, strikingly, is at odds with the standard economic approach) because there are some types of transactions which are more efficient to coordinate by hierarchy than by markets (Coase 1996: 94). One implication is that there is a fundamental distinction between the mechanisms for coordinating labour within and between firms.

Our argument is that the variables of occupation and sector which define the jobs matrix provide the theoretical anchor for this approach, because these variables classify employment in terms of the two indicated dimensions of the division of labour. The jobs matrix, therefore, can be understood as a stylized representation of the labour market at a point in time, from the perspective of the division of labour along its horizontal and vertical dimensions. The ‘jobs’, defined as specific occupations within specific sectors, can be understood as the smallest unit in the division of labour from such a perspective. Our analysis in the following pages, then, is an evaluation of the transformations in the structure of the division of labour of several European countries over a specific period of time, from the perspective of job quality.1

3.2.2 Job quality, relative wages and education levels

In most previous studies using the same approach, the jobs were sorted and classified in terms of their quality, using as a basis their median hourly wages. Again, the justification was more practical than theoretical: without denying that job quality is about much more than just wages, the lack of more comprehensive statistics of job quality makes wages a reasonable proxy, or in any case a variable with sufficient interest in itself. In this chapter, we will follow this tradition and use median hourly wages as the basis for the sorting and classifying of jobs: but to add richness to our analysis, we will include a second ranking of jobs, based on the average educational level of workers.

The canonical theory of job quality in orthodox economics is the theory of compensating differentials, which was formulated by Adam Smith more than 200 years ago and which remains practically intact (which testifies to the lack of interest that this subject arouses in orthodox economics; see Smith 1776: I.10; Cahuc and Zylberberg 2004: 248). According to this theory, the utility that the worker derives from his or her employment depends, on the one hand, on the intrinsic unpleasantness of work (‘the ease or hardship, the cleanliness or dirtiness, the honourableness or dishonourableness of the employment’ Smith
1776: 1.10.5), and on the other, on the wage that the worker receives as compensation. Workers can have different preferences for money v. unpleasantness, which can lead to different levels of monetary compensation for the same level of total utility of employment. The wage in itself, therefore, would be a poor indicator of job quality from such perspective, because, ceteris paribus, it would move in the opposite direction to the rest of the attributes of employment (therefore, a high salary could be an indicator of a very unpleasant job). But as usually happens, the devil is in the ceteris paribus: both the wage and the unpleasantness of work are costs for the firm, and therefore the maximum possible combination of both elements which the worker can expect will be ultimately delimited by the productivity of his or her labour. Hence, from this perspective what really determines job quality (the utility derived from employment, defined by the specific combination of wage and unpleasantness to which the worker can aspire) is productivity, which would be determined by the skills and aptitude of each worker. In this sense, the average educational level of workers in each job, to the extent that it serves as an approximation to the skills and productivity associated to each job, could be a better indicator of job quality than the median hourly wages.  

The previous arguments illustrate why orthodox economic theory has never paid much attention to job quality: in a competitive labour market, wages would compensate perfectly for the unpleasantness of work (with all remaining differences resulting from different preferences) and the differences in the utility derived from each type of employment (the combination of wages and unpleasantness) simply reflect their different productivity. In stark contrast, most of the sociological approaches to job quality, as well as those of non-orthodox economics, are based on the premise that in most cases the compensation of labour does not reflect the unpleasantness of work or its productivity, because there are mechanisms such as exploitation or discrimination which lead the good or bad attributes of jobs to accumulate rather than to compensate for each other. The traditional sociological approach, derived from the Marxist concepts of exploitation and alienation, focuses on the mechanisms for which labour compensation remains below the contribution of labour to production (the conditions of exploitation, such as deskilling and power relations at the workplace; the classical study in this tradition is Braverman 1974), and in the importance of work as an element of identity, realization and social integration of human beings (alienation; the classical study is Blauner 1964). On the other hand, the segmentation approach of institutionalist economics and industrial sociology focuses on the mechanisms that break the unity of the labour market into different segments, governed by different rules and generating differential access to wages and employment conditions which do not result from differences in skill or aptitude as the market paradigm assumes (see Doeringer and Piore 1971; Peck 1996: 56–79 for a review of recent segmentation debates). Although the sociological/institutional approaches tend to emphasize that job quality cannot be reduced to wages (job quality is assumed to be a complex and multidimensional phenomenon), they often argue that wages and working conditions are more likely to go together rather than compensate each other: hence, from these perspectives, wages could be used as a reasonable proxy for job quality. The average educational level of workers can be also a good approximation from this perspective, because of the empirical association between formal education and wages and working conditions in general (for a European review, see Asplund and Barth 2005).

3.2.3 The debate on the impact of structural change on the quality of employment

The Social Sciences debate on the impact of structural change in the division of labour on the quality of employment has been dominated by three main visions, associated with three different periods of contemporary economic history: the first vision, profoundly pessimistic, is associated with the long period of development of the Industrial Revolution and to the predominance of the industrial sector; the second vision, of an almost evangelical optimism, is associated with the emergence of services as the predominant sector of employment and the development of the Welfare State after World War II; the third and most recent vision, which qualifies and synthesizes the previous two albeit with a generally pessimistic tone, is associated with the crisis of the Welfare State and the emergence of the new information technologies in the last two decades of the 20th century.

The pessimistic vision dominated the debate on the implications for the labour condition of technical and organizational change since the beginning of the Industrial Revolution until, at least, World War II (in fact, it had a revival in the 1970s, when the swansong of this vision, Harry Braverman’s Labour and Monopoly Capital, was published). It is interesting to note that this pessimistic vision was shared by the most disparate range of social commentators, from staunch supporters of capitalism and industrialism (such as Adam Smith and F.W. Taylor) to its fiercest critics (such as Marx and Gramsci). This pessimism derived from the recognition of the ambivalent nature of the technical and
organizational change associated with the Industrial Revolution: on the one hand, it boosted productivity and in general, the capacity of human society to survive and prosper; on the other, such progress was produced at the expense of a continuous degradation of the conditions of work. The proud pre-industrial independent producer is transformed into a kind of mechanical brainless beast, who only contributes with brute energy to the productive process without even understanding it (Smith 1776: V.1.178; Marx 1867; Taylor 1911). The increasing returns of mass production and ‘scientific’ management principles tend to shift downwards the employment structures of industrializing economies. In the 1970s, Braverman would update these arguments to the incipient service economy: ‘there has been therefore an immense shift of labour out of the traditional manufacturing, mining and construction, and transportation industries into the very rapidly growing areas of real estate, insurance, finance, services and wholesale and retail trade. But these rapidly growing fields of industry are precisely the low-wage portions of the economy, while the higher-wage sector is the stagnant or declining portion’ (Braverman 1974: 323).

Such pessimism was slowly dispelled while, after World War II, most advanced Western economies initiated a series of institutional reforms that transformed them into more egalitarian and inclusive social systems. In this context, a much-more optimistic vision about the impact of technical and organizational change starts to dominate the debate, a vision which is associated with the theories of post-industrialism. It is precisely the enormous leap in productive human capacity resulting from industrialization which had radically transformed the nature of labour, improving the conditions of work in two different ways. First, by reducing dramatically the amount of work necessary to produce the material goods required to support the population, which implies a gradual increase in the share of workers dedicated to the provision of immaterial services, leisure and well-being (see Fourastié 1963; also Baumol 1967); second, by the substitution of the most arduous industrial tasks by machines, and the transformation of the unskilled, mass-production worker into high-qualified engineering workers, whose main task is the design and supervision of machines (see Bell 1976). The most degraded and alienating jobs of the industrial age tend to disappear or be upskilled, and the faster-expanding segments of employment are in services, especially those with a higher-informational content, good wages and working conditions. The labour markets of post-industrial societies tend, according to these theories, to experience a continuous process of structural upgrading.³

But the pendulum swings again when, around the mid-1970s, most advanced countries entered a crisis which affected first the economy and then the identity of the state itself. The political consensus that had dominated the previous three decades and built the Welfare State started to deteriorate, slowly but steadily, until many of the previous social and labour policies were rolled back (in the 1980s in the UK and US, elsewhere in the 1990s). Social inequalities started growing again, and many argue that the conditions of work and employment deteriorated over this period as well (Doogan 2009: 194–206). Against this background, a more-pessimistic view about the implications of technical and organizational change returns to the forefront of Social Sciences. It is, nevertheless, a more nuanced view, which in some ways can be understood as a synthesis between the pessimistic and optimistic views. According to this view, the structural evolution of the division of labour in advanced capitalist societies since the 1970s is marked by polarization. The literature on this issue tends to focus on two explanatory factors: technology and international trade. On the one hand, the nature of technical change since the informational revolution tends to substitute workers who traditionally occupied intermediate positions (routine production and administrative tasks) while boosting the demand for labour at the two extremes of the skill-job quality hierarchy (knowledge-intensive tasks and manual non-routine tasks). These theories are in fact a derivation of the SBTC arguments (which predicted upgrading rather than polarization), which has been called Task-Based Technical Change (see Autor et al. 2003;Autor et al. 2006; Goos and Manning 2007). On the other hand, it is argued that the globalization of markets has also a destructive impact on the middle of the employment structure of developed economies, especially on unskilled and semiskilled industrial jobs that can be equally performed in developing economies at a fraction of the cost (see Bluestone and Harrison 1982; Kuttner 1983; Harrison and Bluestone 1988).

Each of these three visions implies a specific image of change in the structure of employment in terms of job quality: the pessimistic view implies an image of degradation and downward bias in the transformation of employment structures; the optimistic, an image of continuous upgrading; and the most recent nuanced view, an image of polarization in labour markets. In this chapter, using the jobs approach which was described earlier, we will construct an empirical snapshot of change in the structure of employment of 23 European countries and contrast it with the theoretical predictions based on each of these three visions of structural change in the Social Sciences literature.
3.3 General patterns of job expansion in Europe, 1995–2007

Figure 3.1 shows, for each of the 23 European countries for which we have data, the absolute change in the number of workers by quintile between 1995 and 2007. The dark grey bars represent the wage quintiles. For instance, the chart in the upper-left corner shows the Dutch figures: the quintile holding the lowest paid jobs (1st) expanded by roughly half a million in this period, almost the same growth as the highest (5th) quintile; the 2nd and 4th quintiles also expanded similarly, between 250,000 and 300,000 workers each; and the quintile with wages around the median (the 3rd) grew much less, around 50,000 workers in total. Overall, the pattern of job expansion was very polarized and notably symmetrical for the Netherlands. The light grey bars, on the other hand, show the change in the educational quintiles, whose main purpose is to support and contrast the results of the wage quintiles: in the case of the Netherlands, they show a very similar polarization pattern, though clearly more biased towards the top of the educational hierarchy. In most cases, the educational quintiles show a pattern which is very similar to the wage quintiles, but often more biased towards the top.

The first and maybe most important observation we can make looking at the national patterns shown in Figure 3.1 is that there is no single pattern that can characterize the change in the structure of the labour market of the 23 countries shown, not even approximately. There is instead a considerable plurality in these patterns of job expansion, which suggests that there is no single explanation valid for all of Europe, but a plurality of factors and diverging developments. This may seem obvious (after all, we are dealing with 23 countries which are rather different in many ways), but it can also be seen as contradicting the three hypotheses outlined earlier, each of which is presented, more or less explicitly, as a univocal explanation applicable in general to economies at a similar level of development. In fact, this plurality of patterns directly contradicts the results of a recent study based on a very similar approach, which argued that the employment structures of the old EU15 member states (except Portugal) suffered a similar process of polarization over the last decade and a half (see Goos et al. 2009). Such inconsistency of findings between two very similar studies, for the same period and the same countries, is quite striking, so we will return to this issue in the following section to try to identify the origins of the inconsistency.
Our first important finding is that there was a plurality of patterns of job expansion in Europe between 1995 and 2007: once this is assumed, we can try and classify each national pattern according to its similarity with the images of change proposed by the hypotheses discussed earlier. In Figure 1.1, the individual country charts have been organized according to such a classification, by columns (drawing primarily on the wage quintiles). The first column (to the left) shows the five countries whose pattern of job expansion is more clearly polarized: the Netherlands, France, Cyprus, Slovakia and Hungary. The second column incorporates five countries whose pattern is simultaneously polarized and upwards biased: Germany, Belgium, Ireland, the UK and Slovenia. The third column shows the five countries characterized by a clear and unambiguous structural upgrading: Finland, Luxembourg, Sweden, Denmark and Italy. The fourth column shows four cases of very mild structural upgrading, in which the quintiles grew rather evenly or the expansion was bigger in the middle quintiles (in fact, in three of these four countries the upgrading is only the result of a strong destruction of employment in the first quintile): Spain, Portugal, Greece and the Czech Republic. Finally, in the last column we have put the Baltic States and Austria, which do not fit clearly into any category and which show a clear inconsistency in the two indicators of job quality, suggesting that their results may be less reliable (in the other countries, the two indicators are generally consistent).

Therefore, in terms of the three hypotheses discussed earlier, our results imply a complete rejection of the structural degradation hypothesis, a limited support for the hypothesis of polarization and a wider (though not complete) support for the structural upgrading hypothesis. Across most of Europe, the jobs with higher relative wages and higher average educational levels experienced the biggest expansion. Even most of the cases of polarization (with only the exception of the Netherlands and Slovakia) were clearly biased upwards. There are only two cases that could more or less fit the structural degradation image, and only for the wages indicator: Slovakia and Estonia.

An interesting question is to what extent the classification shown in Figure 3.1 coincides with the European institutional families that recurrently appear in the economic and sociological literature (Esping-Andersen 1990; Ferrera 1996; Fenger 2007). With different names (welfare models, institutional typologies or varieties or capitalism) these institutional families refer to groups of countries with similar and related institutional structures (because of geographic proximity, historical and cultural affinity). In Europe, these are usually associated with the big geographic regions of the North (Nordic countries), Isles (the UK and Ireland), Continental Europe (Germany, France, Belgium, the Netherlands, Luxembourg and Austria), South (Portugal, Spain, Italy, Greece and Cyprus) and East (the Baltic States, Czech Republic, Slovakia and Slovenia). To the extent that the institutional context affects job-creation patterns, some type of association between the classification shown in Figure 1.1 and these institutional families could be expected. The results suggest that such a relation exists, but it is weakened by some important exceptions. The polarization pattern seems to be associated with Continental Europe, including the Netherlands, France, Germany and Belgium. There are two Continental countries that do not fit this pattern, but they seem reasonable exceptions: Luxembourg is an exception in itself, a very small country with a very special economic structure; and there seems to be some problem with the Austrian data, highlighted by the (unexpected) discrepancy between the results of the wage and the educational rankings. (In fact, if we take the educational ranking, Austria becomes a case of polarization, similar to the rest of Continental Europe, which suggests that the problem may lie in the wage ranking.) The UK and Ireland, often put together within a ‘Liberal’ country cluster, also display a very similar pattern of hybrid polarization/upgrading. The three Nordic countries for which we have data experienced a similar pattern of unambiguous upgrading. All Southern European countries followed a characteristic pattern of upgrading with a differential expansion of the middle tiers of the employment structure. Finally, the six Eastern European countries for which we have data are dispersed across categories, without a clear, shared pattern. Overall, the association between the patterns of structural employment change and European institutional clusters seems significant but not perfect: this suggests that the diversity of institutional frameworks in Europe is a determinant of the plurality of patterns discussed earlier, but that there are other confounding factors at work. In the following pages, we will hint at some of those factors, but the reader must be aware that our goal in this chapter is to identify the main patterns of structural change and explore some of its underlying trends: the task of specifying an explanatory model of structural change is left for further research.

3.4 Job polarization in Europe?

In a recent article based on a very similar methodological approach, for almost the same period (1993–2006) and a similar sample of countries
(EU15 plus Norway), Goos, Manning and Salomons (GMS from now on) conclude that all countries except Portugal experienced a polarization process in their employment structures. This is obviously in contradiction with the results that we have just discussed, which is striking considering the similarities mentioned between the two studies. It is therefore worth considering in detail the reasons behind such inconsistency.

It is important to note that we are confident that the differences between the GMS results and ours do not stem from differences in the data used or from errors in the analysis of either party. We exchanged data and could broadly replicate our respective results with the approach of the other party. The differences, therefore, are the result of a different analytic strategy, and to a lesser extent, of a different emphasis in the interpretation.

The first important difference concerns the ranking used for characterizing the quality of jobs. We use nationally specific wage rankings—in fact, we use two-nationally specific rankings: by wages and education—while GMS use a single ranking for all countries, based on wage data for the UK. The latter implies assuming that the wage structure is very similar in all countries, so that using one particular ranking for all does not affect the national results: we believe this is clearly not the case and, therefore, that our approach is better. Although it is true that there is an important degree of correlation between the wage rankings of the different countries, such correlation is far from perfect: and small differences in the rankings can generate very important differences in the patterns of job expansion (see, for example, Fernández-Macías 2010: 157–174 and 205–215).

The second important difference lies in the criteria used for the construction of the segments of job quality whose evolution is studied to evaluate the nature of the employment expansion. In this study, following Wright and Dwyer (2003), we have constructed five segments, each holding the same number of workers in the year 2000, with jobs ranked by their quality: such grouping of jobs in quintiles is, in our view, not only useful but also transparent, because it constitutes a kind of tabula rasa from which the change in the structure of employment in the 23 countries can be studied. GMS, on their paper, divide all jobs into three segments (bad, middling and good jobs), also according to their median wages, but the size of each of these three segments varies without any clear explanation as to why this is the case. (At the EU level, the share of employment in each segment in the initial year studied is 22% for bad, 49% for middling and 29% for good jobs.) This may seem unimportant, but it is not: in fact, the size of the segments can change considerably the growth rates of each job-quality tier. This is why it is so important to apply a consistent logic to the construction of the job-quality segments, and to provide a clear justification of this logic. For instance, if we take the GMS figures for the EU and regroup the jobs so that the three job-quality segments are more even in the first year of the period (making them fifths of employment), the degree of polarization is considerably reduced, and the structural upgrading increased.7

Finally, even if we accept their results as presented, GMS seem to emphasize too much the polarization pattern, ignoring the simultaneous stronger structural upgrading. At the EU level, according to their own figures (GMS 2009: 59), the bad jobs expanded by 1.6 per cent, the middling jobs contracted by 7.8 per cent and the good jobs expanded by almost 8 per cent. There is no doubt that these figures involve some degree of polarization, but there is no doubt either that they involve a strong structural upgrading which is largely ignored in the paper.

Anyway, what is crucial is not so much the differences in the interpretation (which are always debatable), but the two earlier points made about differences in the analytic strategy. The use of a single ordinal measure of job quality drawn from a single country and the unexplained aggregation of jobs into uneven quality tiers are the main reasons for the differences between our results and the results of GMS. In both cases, the GMS approach tends to accentuate, somewhat artificially in our view, the polarization story.

3.5 Decomposing the patterns of job creation by sector and type of employment relation

As the jobs matrix is defined by a combination of the variables of sector and occupation at the two-digit level, it is possible to decompose the patterns of job expansion discussed in the previous pages for any reclassification of sector or occupation which is constructed at an aggregation level which is higher than the two-digit. In this section, we will take advantage of this possibility to decompose the patterns of job expansion at the national level for nine broad categories of sector (constructed taking into account the arguments of the theoretical debate discussed earlier). This shall return us to the sphere of the division of labour explicitly (which we never actually abandoned, but it was largely concealed behind the quintile picture), because it will uncover some of the sector dynamics that underlie the patterns described in previous sections. It shall also help us to
evaluate in more detail the three hypotheses described in the second section of this chapter, because each of these hypotheses postulates a specific type of sector dynamic behind its image of change: the degradation hypothesis emphasizes the shifts in employment from mid-paid industrial jobs to low-paid industrial and service occupations (Braverman 1974: 323); the upgrading hypothesis, a gradual disappearance of low-paid industrial jobs, and a constant expansion of good jobs in services, especially in high-technology and information-related activities (Bell 1976); and the polarization hypothesis, a reduction of mid-paid routine jobs in services and industry, an expansion of non-routine low-paid jobs in services (personal services) and also of non-routine high-paid jobs in managerial and technical service occupations (Goos and Manning 2007).

Continuing a process that goes back to the Industrial Revolution (or earlier), the primary sector contributed negatively to employment in all countries, but especially in those where it still retains some importance (in the South and East of Europe, mainly). In terms of job quality, in most cases the primary sector contributed to the contraction of employment in the lowest quintiles (not only because this is where primary-sector jobs tend to concentrate, but also because these are the primary-sector jobs that are more likely to disappear).

The evolution of construction was rather diverse across Europe between 1995 and 2007, experiencing a strong expansion in some countries – most importantly in Spain and Ireland, but also in other Southern European and some Eastern European countries, a strong contraction in Germany, and hardly anything elsewhere. Employment in construction tends to concentrate in the middle-wage quintiles, and because as we will see later, the other sectors did not contribute much to the expansion of these segments of employment, this sector was (surprisingly) the one that determined most directly the dynamics of middling jobs. Construction is one of the most cyclical sectors, which is another way of saying that its impact is likely to be the most ephemeral in structural terms: those countries that created more construction jobs before 2007 (as shown in Figure 3.2) are right now destroying those same jobs at even faster rates, so the impact of this sector on the structure of job quality shown in Figure 3.2 has reversed in the last three years. For instance, the recent dramatic collapse of construction in Spain is undoubtedly having a polarizing effect, because as Figure 3.2 shows, this sector contributed mostly to the expansion of middle-paid jobs in this country up to 2007 (for more details, see Chapter 10).
Figure 3.3 shows the industrial sector divided in two subsectors, according to the technological intensity of the productive process, following an OECD breakdown (see Hatzichronoglou 1997). Between 1995 and 2007, both types of industry remained basically stagnant across most of Europe. Low-technology industries (which includes subsectors such as manufacture of food, textiles, furniture) had a negative contribution to employment almost everywhere (destroying employment in net terms in the lowest quintiles, most notably in Germany, Austria, Denmark, Italy, Portugal and Belgium, as well as most of Eastern Europe). High-technology industries (which includes subsectors such as production of chemicals, cars, electrical equipment or computers) had a small contribution to the expansion of the highest layers of employment in some EU15 countries (especially in Germany, France, Ireland, Austria and Finland), and an important contribution to the expansion of the middle layers in the three Visegrad countries available in our sample (Czech Republic, Hungary and Slovakia). Although in absolute terms the contribution of both types of industry was rather small (in positive or negative terms), it must be noted that this actually means a significant reduction of this sector in relative terms, because the period 1995–2007 was one of generalized employment expansion. In previous historical periods, the industrial sector was the driver of the middle (and mid-low) segments of employment: the inexorable decline of industry in terms of employment is one of the main reasons behind the stagnation of the middle layers of employment in most countries. Only in three of the New Member States of our sample (the Central-Eastern bloc of the Visegrad countries) was there a significant positive development in the industrial sector, and only in high-technology industries (these countries, as all New Member States, experienced a massive process of industrial restructuring that mostly affected employment in old and inefficient low-technology industries: Figure 3.3 shows that such restructuring destroyed large numbers of low-paid jobs): as expected, such development contributed to the expansion of the middle layers of employment in these countries.

Because of its large share of overall employment, we have split the service sector in five categories, two private (knowledge-intensive services and the rest, using the Eurostat classification; see Felix 2006) and three usually public (public administration, health and education). Private services, as Figure 3.4 shows, were responsible for most of the employment expansion between 1995 and 2007. The relevance of the distinction between knowledge-intensive services (which includes financial and business services, communications and non-land transport, research
and development among other activities) and the rest (which includes retail, hotels and restaurants and land transport among other activities) is illustrated in Figure 3.4: knowledge-intensive services are strongly biased upwards, explaining in all countries more than half of the expansion of employment in the highest quintiles, whereas less knowledge-intensive services show the opposite image, strongly biased downwards and determining directly most of the expansion of the two lowest quintiles. It is interesting to note that private services hardly contributed at all to the middle segments of employment, despite the fact that they do account for a significant share of such segments (especially, in administrative services). Private services tend to have a polarizing effect because it is those services on the extremes which are expanding faster. But this centripetal effect is uneven in different countries. Whereas knowledge-intensive services expanded very rapidly in all countries, which partly explain the near universal structural upgrading throughout this period, less knowledge-intensive services expanded significantly in just a few cases. Wherever the latter type of services grew, the bottom of the employment structure grew as well, and if there was no simultaneous expansion of the middle layers (generally driven by construction), this led to polarization.

Finally, Figure 3.5 shows the typically, though not necessarily, public-service sectors. Their contribution to employment was generally positive, but more moderate than that of private services, and more clearly biased towards the highest quintiles. The biggest and most generalized expansion was that of health, which contributed strongly to the expansion of the top-two quintiles in many countries; public administration and education had a more uneven contribution, both in terms of size and in terms of quality position (though in most cases biased upwards).

These sector dynamics facilitate a better understanding of what is general and what is specific in the patterns of job expansion discussed in Section 3.3. It seems clear that if most countries experienced a bigger expansion of their higher job-quality segments of employment, it was the result of a generalized expansion of knowledge-intensive private services, and the health sector; that the sectors that had traditionally propped up the middling segments of employment (industry and administrative services) remained stagnant, so that the evolution of these middling segments depended mainly of the fluctuations of the construction sector; and that wherever the lower quintiles grew, such growth was associated with personal services (or less knowledge-intensive services). But why did such expansion of personal services happen in some countries and not in others?
Figure 3.5  Contribution to job growth of public services

Figure 3.6  A decomposition of the patterns of job growth by employment status
Figure 3.6 suggests a possible answer to this question, which goes in the same line as the inference made earlier about the possible relationship between the different patterns of job expansion and different proposed European institutional ‘families’ or clusters. The decomposition shown in Figure 3.6 is based on the type of employment relation, differentiating between workers with a standard employment relation (full-time and indefinite contract) and workers without (i.e. workers with part-time or non-indefinite contracts, or self-employed). Figure 3.6 can be linked to the argument of the destandardization of employment made, among others, by Ulrich Beck (1992: chapter 6), putting it in the context of our analysis of the transformations of the employment structure.

This approach seems, at first sight, quite fruitful: there is an obvious relationship between the destandardization of employment and the expansion of low-paid jobs in recent years, a relationship which is stronger in Continental European countries – that is, precisely in the group of countries most clearly linked to the pattern of polarization. In the countries of the upper-left quadrant, there was between 1995 and 2007 a very strong process of destandardization of employment (all or most of the expansion of employment in net terms was non-standard, with net destruction of standard employment in the lowest quintiles), that affected all the employment structure but was strongly biased towards the lowest segments of employment. In other European countries, either there was no destandardization (as in Finland, Denmark or the UK), or such destandardization was not so strongly biased downwards, and therefore it could not generate polarization (as in Sweden or Italy). Nevertheless, there are important exceptions to such a general pattern (e.g. Cyprus, Ireland or Austria, for different reasons), so this idea must remain at the level of a line of orientation for further research but one which seems rather plausible: the de-standardization of employment illustrated in Figure 3.6 would be capturing a series of changes in employment regulation that purposely facilitate the creation of low-paid, low-quality jobs. It should be no surprise if such changes would contribute to a polarization of employment.

3.6 Conclusions

In this chapter, we have studied the patterns of change in European employment structures from the perspective of job quality, using a relatively new methodology (the jobs approach) and applying it to a big sample of countries. Our results show that, between 1995 and 2007, there was a considerable diversity in the patterns of job expansion in Europe: some countries experienced a polarization, others a clear structural upgrading, yet others a relatively flat expansion tilted towards the mid-high layers of employment. Such national diversity has important implications for the debate on the impact of technical and organizational change on the nature of work, because it undermines the case for a single dominant or universal driver of changes in the employment structure, suggesting that such impact is subject to a fundamental indeterminacy that is often absent in the literature. Although not in a totally conclusive manner, our results suggest that the existing institutional diversity within Europe (an expression of conscious human agency) is one of the key determinants of such plurality of patterns of job expansion.

Assuming this fundamental diversity, we tried to evaluate empirically the predictive success of each of the three hypotheses of change that have dominated the Social Sciences debate on this issue. The most successful is, without any doubt, the structural upgrading hypothesis posited by the theories of post-industrialism and skill-biased technical change. In almost all countries, including some which experienced a simultaneous polarization, the highest quality segments grew more strongly than the rest of the employment structure. Although in this sense the structural upgrading was nearly universal, its actual form varied in crucial ways: there were some important cases of simultaneous polarization, while in other cases the upgrading took place together with an expansion of middling jobs.

Still, the more or less generalized trend towards a structural upgrading in employment is an important finding, with interesting implications. Similar research in the US shows that such structural upgrading was a constant in the US labour market over the last four decades at least (see Wright and Dwyer 2003), though with an increasing level of simultaneous polarization over the years. It may be that the natural development of employment structures in capitalist economies is a continuous structural upgrading, as long as there is productivity growth (after all, both phenomena are related). If that is the case, it could be argued that this pattern should be taken as a given, and our focus should shift towards deviations from it (e.g. cases of polarization) or towards differences in the degree or type of upgrading. (We have seen a wide variety in this chapter.) But for the time being, these cannot be more than more or less informed speculations: future similar studies should provide more evidence on the nature of structural change in employment in the long run.
Structural upgrading in the employment structure, even in terms of job quality, should not be naively equated with social progress: they are totally different things, which can move in opposite directions. In fact, the type of structural upgrading analysed in this chapter has been often associated with increasing social inequalities and/or social exclusion (it is, in fact, one well-noted consequence of the skill-biased technical change argument). If low- and mid-paid jobs are stagnant or even contracting, workers with low qualifications will have a hard time finding employment, and their wages and conditions of employment may deteriorate because of the competition of more people for fewer jobs. If simultaneously the higher layers of employment are expanding faster, wage inequality between high- and low-qualified workers is likely to grow. In fact, there is abundant evidence that this kind of process is one of the most important drivers of the current trend of increasing income inequalities in most developed economies (for a review, see Acemoglu 2002).

While there is no inexorable social progress in the type of structural upgrading discussed in this chapter, equally there is no inexorable social deterioration. The wider social implications of technical and organizational change depend, in the last instance, on how society decides (in one way or another) to distribute the benefits of such change. There is nothing inevitable, good or bad, in this respect.

Notes

1. Wright and Dwyer (2003: 205) provide an apparently different justification of this approach: 'jobs are not just employment contracts to "work" at a given earnings level: they are contracts to perform sets of tasks to produce specific outputs'; 'a job type..., can be thought of as demarcating labour market opportunities for a particular kind of employment with a particular earnings potential'. In fact, what lies behind the task dimension of jobs and the opportunities associated with jobs is the same principle of the division of labour discussed above.

2. These arguments are a bit forced in this context, because orthodox economics always refers to individuals and not jobs: such an approach is probably incompatible with our structural approach to labour market analysis. But if it was not, it could be argued that beyond endogenous factors which are not of interest here, most of the differences in wage levels within a job would derive from the preferences of each worker for wage or unpleasuness: hence, as long as there is no bias in the preferences of workers across different jobs, the median wage level could be a good approximation to overall job quality at the job level. The differences in median salaries across jobs would reflect indirectly their differences in productivity, as would (even more directly) the average educational level of job-holders.

3. Similar arguments are advanced by proponents of the theory of skill-biased technical change (SBTC), but with a rather different tone: these theories try to explain why after the 1970s there was an important expansion of inequalities in most of the industrialized world. SBTC theories argue that around the 1970s there was a technological revolution that increased the demand of skilled labour and depressed the demand of unskilled labour, thus increasing the wage differential between skilled and unskilled workers (for a review, see Acemoglu 2002; also, Violante 2008).

4. This exchange took place in the meeting of the JOBS project in Salamanca in July of 2009 (see Fernández-Macías 2009; Goos 2009).

5. In the GMS paper, the use of a single ranking is not defended as a best option, but just as a necessity because of lack of data (Goos et al. 2009: 59).

6. It is also not clear in the paper whether the grouping of jobs is only based on occupations (which is apparently the case, but then, why is employment broken down by occupation and sector, as it says in p. 59?) or on the combination of occupation and sector (as we do in this chapter).

7. The original (uneven) segments produce the following growth rates: 1.23 per cent for bad jobs, -2.9 per cent for middling jobs and 7.75 per cent for good jobs. Regrouping the jobs so that they are approximately equal in the first year (using the data from GMS 2009: 59; the new shares would be 32% bad, 34% middling and 34% good jobs), we would get the following growth rates: -2.15 per cent for bad jobs, -5.43 per cent for middling jobs and +7.58 per cent for good jobs.