

Chapter 4

NEW ENTERPRISE WORK PRACTICES AND THEIR LABOUR MARKET IMPLICATIONS

Summary

Over recent years, the environment in which companies operate has changed considerably. Firms are faced with a need to achieve greater economic efficiency, and to adapt faster to changing conditions. Many commentators have claimed that these pressures are being reflected in changes in work organisation, towards what are often called “new” or “flexible” or “high-performance” work practices. This involves changes in the design of jobs, towards greater complexity, higher skill levels and greater use of team-working, as well as increased delegation of responsibility to lower level staff and improved communications throughout the company.

The aim of this chapter is, first, to examine the evidence for changes in work organisation towards more flexible types of working, both in terms of job design and the delegation of responsibility. Second, it examines where flexible practices are most common, in terms of both countries and types of firms. Third, it attempts to evaluate to what extent changes in working practices have implications for the labour market. It draws on information developed as part of the recent OECD project on “flexible enterprises”, as well as the EPOC study of the European Foundation for the Improvement of Living and Working Conditions.

The evidence assembled indicates that many managers in all countries report a considerable degree of investment in flexible working practices. While there is comparatively little evidence about changes over time, what exists points to the extension of a number of forms of flexible working. Firms in different countries use flexible working practices to a significantly different extent. The patterns are not easily explained by differences in the types of firms in different countries, nor by other characteristics of different OECD countries, such as their industrial relations systems.

Within individual countries, two factors which seem to be linked with greater use of flexible working practices are higher training levels, and industrial relations systems which facilitate negotiations between managers and employees. The analysis in this chapter does not suggest that increased use of flexible working practices necessarily leads to a growing polarisation between “core” and “peripheral” workers.

Chapter 4

NEW ENTERPRISE WORK PRACTICES AND THEIR LABOUR MARKET IMPLICATIONS

Introduction

Over recent years, the environment in which companies operate has changed considerably. Firms are faced with a need to achieve greater economic efficiency, and to adapt more quickly to changing product market conditions. Many commentators have claimed that these pressures are being reflected in changes in work organisation, towards what are often called “new”, “innovative”, “high-performance” or “flexible” workplaces. This generally involves changes in the design of jobs, towards greater complexity, higher skill levels and greater use of team-working, as well as increased delegation of responsibility to lower level staff and improved communications throughout the company. The aim of this chapter is, first, to examine the evidence for changes in work organisation, both across countries and different types of firms and, second, to evaluate to what extent they are correlated with changes in employment practices likely to have implications for the labour market. The chapter draws, in particular, on information developed as part of the recent OECD project on “flexible enterprises”, as well as the EPOC study of the European Foundation for the Improvement of Living and Working Conditions.

Changes in the design of jobs and the way that responsibility is delegated are a crucial part of a company’s human resource policies, with implications for recruitment, training, compensation, and employee relations. For example, more job complexity, and a greater emphasis on team-working and information sharing, may give incentives to firms to recruit workers with higher levels of qualifications, and greater communications and social skills. The same factors, combined with technical change, are likely to lead to demands for higher levels of training. To the extent that the new forms of working are dependent upon higher levels of motivation, there will be implications for employee relations policies. Finally, compensation practices may be modified, both to encourage the process of change, and provide the best possible “fit” with the new working practices.

In addition, if changes of this kind are widespread they may have implications for the labour market and for

public policy. For example, Betcherman (1997) argues that education and training policies may need to be modified to develop the skills that the new methods of work organisation require. In addition, there have been concerns that moves to new working methods may lead to a polarisation in the work force within companies. Managers may judge that only some of their existing workers have the capacity to take part in more productive, but also more demanding, working methods and may employ the remainder on less advantageous conditions. Thus, changes in work organisation might be connected with labour market outcomes such as rises in part-time and temporary working and, in some countries, the rise in earnings inequality and the increasing labour market difficulties of lower-skilled workers.

The focus of this chapter is on the two broad areas of job design and delegation of responsibility. Supporting human resources practices, such as compensation, training and recruitment, and other areas of employee relations, are not covered directly. Training is the topic of Chapter 3 of this edition of the *Employment Outlook*, while profit-sharing, an element of compensation systems often associated with “high-performance” workplaces, was covered in the 1995 *Employment Outlook*. Other practices which have been excluded are downsizing and outsourcing, on the grounds that their main purposes are to change the type and quantity of work that is carried out by individual organisations and sometimes, in the former case, the pace of working, rather than the way in which work is organised. In acknowledgement of the fact that many of the job design and delegation practices under consideration in this chapter have a long history, they will be referred to as “flexible” rather than “new” work organisation practices.

Summarising broad changes over time in work organisation is difficult. The academic and management science literatures contain many concepts designed to describe, or prescribe developments. A brief review of some of the most important recent concepts is provided in Box 1, which ends with a list of the flexible working practices taken as the basis for the empirical evidence presented here. In addition, mention is made of quality circles (defined in the box), for which data are relatively plentiful.

Box 1. Flexible work organisation practices

While changes in work organisation over recent decades are impossible to summarise adequately, there is a good deal of agreement that one current of change has been a move away from mass-production in manufacturing, and bureaucratic control in all sectors, towards more flexible forms of work organisation. Part of the early moves away from conventional mass-production “Taylorist” techniques were spurred by technical advances in computer-controlled machinery which, according to Piore and Sabel (1984), led to the possibility of “flexible specialisation” – producing a wide range of different products from the same set of capital goods at low costs. A second factor was the success of “lean production” methods, which included the elimination of stockpiling of parts and unfinished goods through the “just-in-time” system. The advent of lean production provided striking evidence for the importance of work organisation methods. Japanese car-firms using lean production were found to achieve considerably higher productivity than American firms with more advanced technology using conventional “Fordist” production methods [Berggren (1993); Marsden (1996); Womack *et al.* (1990)].

Employee Involvement (EI), a term which became popular in the 1980s, represents a movement which continues earlier initiatives for worker participation and industrial democracy [Marchington (1995)]. The main principles, drawn particularly from the results of social science, include greater participation by lower level staff, job enrichment to improve motivation and commitment to the organisation, and willingness to share information with employees, who are counted among the firm’s stakeholders. It has considerable implications for change in work organisation. One current emphasis is on locating decisions lower down in the hierarchy, in order to take advantage of the detailed knowledge employees have about their own work processes. Management adopts an enabling rather than a controlling role. This tends to favour a flatter organisational structure, with considerable emphasis on lateral work and communication, often through teams [Lawler *et al.* (1998)].

The Socio-Technical movement, which has taken root particularly strongly in some of the Nordic countries, has a long history, linked to EI. As its name suggests, it seeks to harmonise the technical and social aspects of work. Beginning with research at the Tavistock Institute in the 1940s, it was developed in the 1960s in the Norwegian “Democracy at Work Project”. Recent applications were seen in two Volvo car plants in Sweden. The main principles include the use of stable, semi-autonomous work groups without status differences, in which tasks are interchangeable and interdependent, and workers’ needs for satisfying and challenging work are given a high level of consideration [Kelly (1978)].

Total Quality Management (TQM) has been a particularly influential management philosophy in many countries in the past two decades [Hackman and Wageman (1995)]. While originally based on concepts from quality engineering, it encompasses many of the ideas of both EI and lean production, with distinct emphases on improving quality, satisfying customers and reducing waste. As with EI, but unlike lean production, it has been applied to all sectors of the economy, notably services and the government sector. Two important features of TQM are team-working and decision-making at relatively low levels in the hierarchy. In North America and the United Kingdom, TQM has been regarded as the successor to the quality circle movement, which was modelled on developments in Japan (quality circles are groups of workers from the same work area who meet regularly on a voluntary basis to suggest ways of achieving higher productivity and quality). Compared with EI, there is more emphasis on the directing role of top management and there may be rather less emphasis on job enrichment, in the sense of changes in work design intended to increase the variety of tasks performed and the range of skills that are needed [Hill and Wilkinson (1995)].

Business process re-engineering (BPR) is based on ideas which rapidly achieved popularity after being developed by management consultants at the beginning of the 1990s [Hammer and Champy (1993)]. BPR makes use of many of the ideas of EI and TQM, but stresses the possibility of cost savings by improving or “re-engineering” the processes taking place in organisations. This applies particularly to routine transactions, which may be re-organised in order to exploit the possibilities afforded by micro-electronics. Further cost reductions are advocated by concentrating on the “core competencies” of organisations, and outsourcing goods and services that can be obtained more cheaply elsewhere. As with TQM and EI, BPR involves flatter management structures, partly through the use of modern communications systems – work is to be co-ordinated as far as possible by means of local area networks rather than middle managers. Job enrichment is not necessarily a primary aim, and the explicit emphasis on cost reduction is often associated with downsizing [Conti and Warner (1994)].

As is obvious from the above, contemporary management has a considerable range of philosophies. This wide choice is reflected in the somewhat general concepts of “high-performance workplaces”, and “flexible firms” [Kling (1995); OECD (1996b)]. These may be conceived as incorporating workplace practices from one or a range of management approaches, in a self-reinforcing way, so as to align the organisation of the workplace with its objectives.

Betcherman (1997) lists the following practices as being some of the main features of work organisation in “high-performance” workplaces. Each is a characteristic of one or several of the “models” mentioned above.

- Job design involving multi-skilling, or multi-tasking.
- Extensive use of team working.
- Reduced hierarchical levels.
- Delegation of responsibility to individuals and teams.

The focus of this chapter is on the spread and development of these broad types of work organisation practices. For convenience, they will be referred to generically as “flexible practices” and divided into two broad categories, job design and delegation of responsibility, corresponding to the first and second pairs of the four turrets above, respectively.

Structure of the chapter

The following sections provide empirical evidence to address the following questions:

- What is the incidence of flexible work organisation practices in different countries and what is the evidence for ongoing change?
- In what types of firms are flexible practices most common?
- What evidence is there that flexible practices tend to be found in combination and which combinations are most frequent?
- What are the implications of flexible practices, in terms of other types of employment practices? For example, is there any evidence that the development of flexible working practices tends to be associated with higher levels of training, or with a larger “peripheral” workforce?

Box 2 reviews the evidence that flexible working practices bring financial benefits to firms, especially when used in combination. This proposition is an important part of the argument that they are not simply “fads” and that more enterprises will find it expedient to use them, and to do so more intensively.

Main findings

National differences in patterns of flexible working

The following points summarise the evidence available about the incidence and change in flexible working practices in different countries. They refer to workplaces with 50 or more employees (unless otherwise stated).

- The incidence of job rotation appears to be high in Germany and Japan relative to France, the United Kingdom and the United States, and may be particularly high in Sweden and some other Nordic countries. Teamworking is again particularly high in Sweden. Measures to delegate responsibility to lower level employees appear to be relatively uncommon in the Southern European countries. In Northern Europe, the highest incidence is found in the Nordic countries and the Netherlands. In North America, the use of quality circles appears to be above the European average.
- In Sweden and Denmark, firms report a particularly high level of recent management initiatives to introduce or extend the use of job rotation. Figures for France, Germany, the Netherlands and Portugal are

considerably lower. There is comparatively little variation across European countries regarding recent management initiatives to promote team-working. Firms in Sweden, the Netherlands, France and the United Kingdom report the most recent management initiatives to increase employee involvement, while figures for Germany and Denmark are lower than average.

- In Australia, the proportion of workplaces with various forms of employee involvement practices rose substantially between 1990 and 1995. Quality circles were the exception. For Fortune 1000 companies in the United States, there is also evidence of declines in the use of quality circles from 1993 onwards but, steady increases since 1987 in other forms of employee participation including a very sharp increase in semi-autonomous work groups. In addition, there was an increase in the incidence of schemes for job enrichment and redesign.
- While most firms using flexible working practices appear to have introduced them only in a limited way, it appears from the American Society for Training and Development 1998 “benchmarking” survey that many large firms in North America, Europe, and Japan have adopted flexible working practices to a substantial (and, on average, roughly similar) extent.

Overall, the available data on flexible working practices reveal substantial variations between countries even where there are similarities between their national and workplace IR systems. None of the usual ways of classifying countries according to their IR systems are capable of explaining the pattern that emerges.

In what kinds of workplaces are the practices most common? What are their labour-market implications?

An examination of the incidence of practices across countries suggests that larger workplaces are more likely to have adopted the flexible practices than their smaller counterparts, though the relationship varies by country and by practice. Workplaces in manufacturing tend to have an above-average incidence rate. Establishments with other forms of worker representation, such as through trade unions and works councils, are more apt to have taken initiatives in the area of flexible work organisation practices. Moreover, employers with incentive compensation schemes, particularly profit sharing and pay linked to skill, tend to have higher incidence rates as well, consistent with the view that there are complementarities among such practices.

Box 2. Flexible work organisation practices – real and important changes or management “fads”?

Despite the substantial academic and management interest in flexible working practices, there are concerns that they represent, not the culmination of many decades of research and experimentation in search of improved economic performance but, rather, the influence of changing management fashion, driven by the pervasive influence of management literature. Some commentators have argued that it is not management practices and work organisation that have changed, but simply the words used to describe them. A variant of this argument is that, to the extent that there have been changes, they are no more than pendulum swings from management philosophies based on the idea of control to ones based on employee commitment, and back again [Ramsay (1996); Abrahamson (1996)].

These concerns are not entirely groundless. Quality circles were adopted by large numbers of firms in the 1980s without making changes in management structures to accommodate them. As a result, there was widespread disillusionment and many systems of quality circles were abandoned. The high figures reported for the existence of TQM (Total Quality Management) in several countries surely exaggerate the changes in work organisation that are taking place. United States surveys tend to find a higher reported incidence of TQM than the team working and quality circles which are generally considered to be an integral part of it [Osterman (1994); Gittleman *et al.* (1998); Hackman and Wageman (1995)].

On the other hand, there is now a certain amount of evidence to suggest that flexible working practices can improve firms' financial performance. This would be difficult to understand if reports of the adoption of flexible working practices were illusory or if the practices had been introduced in a capricious fashion. In addition, while managerial fashion might tend to swing to and fro over the medium-term, there can be no doubt about the influence of important long-term factors on managerial behaviour, such as those identified by Chandler (1962, 1990) and Porter (1980, 1985), factors which at least some commentators have suggested are leading firms in the direction of flexible working practices.

Flexible practices and firm performance

The question of whether flexible working practices tend to produce higher firm performance is not straightforward to answer. Formidable empirical questions need to be resolved [Ichniowski *et al.* (1996)]. For example, when studies are based purely on cross-sectional information, it is difficult to control for the reasons why the practices were introduced in the first place. If firms only began to experiment with new forms of working practices when they faced dire trouble, the existence of practices might be associated with poorer performance, at least over the short-term. On the other hand, if flexible practices were introduced mainly into firms with more highly skilled workforces, there is the danger that higher performance may be attributed to the working practices rather than the higher skills. Another difficulty is that many studies, such as the careful analysis of the effects of human resource management practices on the productivity of steel finishing lines by Ichniowski *et al.* (1997), cover only a small part of the economy.

Despite these caveats, the recent reviews of Becker and Huselid (1998), Delery and Doty (1996), Ichniowski *et al.* (1996), Kling (1995) and Nordflex (forthcoming), even though based mainly on United States and Nordic analyses, provide substantial evidence that:

- Firms that report the use of “flexible working practices” tend to enjoy better financial performance and higher levels of productivity, than those that do not.
- This beneficial effect is stronger when flexible practices are used in combination both with each other and with support from other human resource practices, such as training and appropriate compensation policies.

It should be stressed that these broad conclusions do not apply to all of the studies reviewed, some of which produced mixed results, [this was also the case for the study of France carried out by Coutrot (1996a)]. In addition, many studies do not investigate the direction of causality, and are open to the objection that, rather than flexible practices being the cause of good firm performance, it is good firm performance which allows firms the luxury of introducing flexible working practices. However, at least three studies do address this issue on the basis of longitudinal information: Lawler *et al.* (1998); Nordflex (forthcoming) and Patterson *et al.* (1997). All find evidence of causality running from the introduction of flexible working practices to superior financial performance.

The association of flexible working practices with better economic performance may encourage more firms to use them. In addition, the fact that combinations of practices often yield stronger performance should provide reasons for using them more intensively. However, both these conclusions depend upon appropriate conditions being fulfilled [Ichniowski *et al.* (1996)]. It is not obvious that firms that have not yet introduced flexible working practices are as well placed as those that have already done so. This applies not only to existing types of enterprises, but also to some new developments, such as the rapid growth in call-centres. Here, Fernie (1999) has found, for the United Kingdom, that work organisation in the more successful centres involves

Box 2. Flexible work organisation practices – real and important changes or management “fads”? (cont.)

elements of both team-working and Taylorism. In addition, firms may experiment with the introduction of one or two flexible working practices, only to abandon them as unsatisfactory rather than introducing more [Kochan and Dyer (1995)]. Successful introduction may depend upon the presence of the specific management expertise required, or upon the workforce already possessing a certain level of skills or having the ability to acquire them relatively easily [Betcherman (1997)]. Worker attitudes, and the industrial relations framework in which the firm operates are also likely to be important [Levine (1995); Locke *et al.* (1995)].

Flexible practices and firm structure and strategy

Over the last century, the strategy and structure of firms in the industrialised world has changed substantially. Chandler (1962, 1990) describes how large businesses evolved from the typical owner-managed firm of the nineteenth century to more complex organisations, with professional managers, and a functional organisational structure (separate departments for production, sales, finance, and accounting, and so forth). As the twentieth century advanced, these companies found that their administrative complexity was incompatible with innovation and product diversification. One response was the evolution of the divisional structure, in which a number of divisions, linked together at the corporate level, are each made responsible for a particular market or product. While still successful, the divisional form is now being challenged by mixed organisational forms which embody less vertical integration, and looser coupling throughout the system, while retaining tight central financial control.

Miles and Snow (1984) argue that these changes have been reflected in human resource policies. Personnel departments first arose in functional organisations, where they developed a tradition of acquiring, training and maintaining the various types of specialists that functional organisations required. Within divisionalised companies, they found additional roles in devising more elaborate compensation packages, management development programmes, staffing plans and job rotation, as well as training plans, employee relations, and specialised, centralised recruitment centres. The most recent forms of work organisation require more advanced human resources practices, such as job enrichment, team building, and job rotation, in order to develop the necessary range of skills and functional flexibility.

Chandler’s account is complemented by Porter (1980, 1985), who identified three typical strategies that firms can use to gain competitive advantage: innovation through the development of new products or services, quality enhancement, and cost reduction. Over time, the competitive strategies of firms in OECD countries have tended to shift in the direction of quality enhancement and innovation. While the linkage between each of these types of strategy and human resource policies is not straightforward, Schuler and Jackson (1987) argue that the innovation strategy requires close interaction within groups of individuals, and a special emphasis on multi-skilling.

Despite assertions by some that flexible practices will vastly improve job quality and by others that they will serve to increase job instability for at least a portion of the workforce, it proves difficult to find evidence of strong links between the presence of the practices and labour market outcomes. The most robust finding is that employers with flexible practices in place are also more likely to provide job training. There is no clear relationship between the existence of the flexible practices and the use of various kinds of “contingent” workers.

ees to rotate between different jobs, may produce flexibility in a number of ways. By ensuring that all members of a work group can carry out a range of tasks, it can increase the flexibility of response to different and unpredictable demands. In addition, it may provide skill development for individual workers. Team working achieves flexibility partly by pooling the skills of a number of workers. It usually involves some change in job design as well as a delegation of responsibility to the team. The indicators of delegation of responsibility include information on the levels at which various types of responsibilities are discharged, as well as evidence of flattening of management structures. Data on quality circles will also be presented.

I. How common are flexible work organisation practices in OECD countries?

A. Indicators of work organisation

The main indicators of job design used in this chapter are the extent of job rotation and team working. Job rotation, defined as a work design system that allows employ-

Statistics on the incidence of flexible practices must be treated with considerable caution. Even for the same country, different surveys give widely differing estimates. For example, the nationally representative 1993 Survey of Employer-Provided Training (SEPT) carried out by the US Bureau of Labor Statistics by means of mailed questionnaires provides estimates, reported by Gittleman *et al.*

(1998), which are much lower than those found by a survey with many similar characteristics carried out by Osterman (1994). There are suggestions that, in some domains, interview surveys give higher estimates than postal surveys. One reason may be that interviews tend to focus managers' attention more closely on the questions, making it more likely that they will report practices which are present at low levels of intensity. In addition, faced with a human interlocutor, rather than a piece of paper, managers may feel more inducement to say they have adopted more "advanced" management techniques.

International comparisons based on survey data can, thus, only be made on the basis of identical or near-identical questions, administered as part of similar surveys, carried out in similar ways. The results must always be treated with considerable caution, as it is not possible to translate terms exactly from one country to another, owing to differences in national institutions and traditions. The evidence presented below is based partly on two international surveys: first, the survey of ten EU countries carried out by the EPOC Project (Employee Direct Participation in Organisational Change) of the European Foundation for the Improvement of Living and Working Conditions and, second, the similar, but not identical, surveys of four Nordic countries whose results have been brought together under the Nordflex project (see the Annex for descriptions of these surveys).¹ In addition, a number of countries have recently developed nationally representative workplace-based surveys. While these surveys are by no means identical, they do contain some common questions, allowing some cautious international comparisons. These surveys may be supplemented by two non-representative commercial surveys, designed to enable firms to "benchmark" their use of training and workplaces practices against those of other firms. Finally, reference is made to academic studies of particularly industries in pairs of countries. These are able to go into greater depth than surveys, and circumvent some of the problems that arise when terms that are current in one country have no exact equivalent in another.

As the incidence of practices is found to vary somewhat by size of workplace (see below), and the information is very sparse for small workplaces, the statistics presented in this section refer to those with 50 or more employees. It must be stressed that the data generally refer to the existence of practices in workplaces, rather than the intensity of their use.

B. Comparisons of indicators of work organisation

Job rotation

While there is no international survey of the incidence of job rotation, Marsden (forthcoming) deduces a

ranking of countries on the basis of a number of bilateral studies, including Maurice *et al.* (1986) for France and Germany; Sorge and Warner (1986) for Germany and the United Kingdom; Lam (1994 and 1997) and Whittaker (1993) for Japan and the United Kingdom; and Cole (1979), Koike and Inoki (1993) and Lincoln and Kalleberg (1990) for Japan and the United States.

The general conclusion is that the incidence of job rotation is higher in Japan and Germany than it is in the United States, the United Kingdom or France. In France and the United States, where work organisation is focused strongly on the job or the "work post", job rotation is seen as incompatible with the primary responsibility for one particular job. No information is available to compare the incidence of job rotation in Germany and Japan. However, Marsden (forthcoming) argues that it has a somewhat different function in the two countries. In both Japan and Germany, job rotation is seen as part of the process of on-the-job training. However, in Japan, the intention is to develop broad, enterprise-specific skills, while in Germany job rotation is seen as part of the process of skill enhancement and progression within an occupation. The occupational dimension is also seen as important in Britain, but job rotation is limited as compared with Germany, in order to respect occupational demarcations. Comparing job rotation practices for engineers in Japan and the United Kingdom, Lam (1994) suggests that in Britain there is a strong emphasis on building up the employee's own specific area of expertise, while in Japan the stress is on systematic sharing and diffusion of expertise.

Figures available from selected national surveys are consistent with these conclusions and suggest that some of the Nordic countries also have high levels of job rotation. For France, the 1992 REPOSE survey suggests that 24 per cent of workplaces use job rotation, the same figure as the 1993 SEPT survey for the United States [Coutrot (1996b); Gittleman *et al.* (1998)]. However, the 1996 Flexible Enterprise Survey of German workplaces carried out by the University of Kassel [data provided by Bernard (1998)] provides a considerably higher figure of around 50 per cent of workplaces, of which, roughly one-half reported that job rotation was used for personnel development. For the Nordic countries, the representative national surveys co-ordinated by the Nordflex group have produced estimates of the reported incidence of job rotation varying from 65 per cent for Sweden and 80 per cent for Finland, to 50 per cent for Denmark and 40 per cent for Norway Nordflex (forthcoming)]. A quarter of Swedish and a fifth of Finnish workplaces reported that over 50 per cent of

1. The EPOC results must be treated with some caution because a large portion of the sample did not return their questionnaires, with the size of this share varying across countries. Details on the response rates can be found in the Annex to this chapter.

their employees were involved in job-rotation, as opposed to a figure of under 10 per cent in Denmark.

Team working

Even more than job rotation, team working takes different forms in different countries. For example, Marsden (forthcoming) quotes Jürgens *et al.* (1993) as arguing that, in the automobile industry (one of the pioneers of team working) the United States tends to use relatively narrow, job-based teams, Japan uses homogeneous teams based on on-the-job training, the United Kingdom employs teams of similarly-skilled workers, developed around existing skills, while Germany uses mixed teams based on existing skills, but at different skill levels.

There is little comparative information on team working for the economy as a whole. However, Benders *et al.* (1998) present indicative data derived from the EPOC survey on the assumption that team working is likely to occur when managers report a high degree of delegation of responsibility for important issues to groups. More precisely, two conditions were applied – that groups were given rights to make decisions over at least one-half of a set of eight important issues relating to their work and working conditions, and that at least 70 per cent of the largest occupational group in the workforce was involved.² For the eight countries which could be covered, team working was found to be most prevalent in Sweden. The United Kingdom, France and the Netherlands were also above average, while Ireland, Germany, Denmark and Italy were below it.

The Nordflex co-ordinated surveys indicate that, within the four Nordic countries covered, Sweden has by far the highest proportion of employees working in teams. Ninety-one per cent of Swedish workplaces reported the use of team-working as opposed to 75, 74 and 69 per cent in Denmark, Finland and Norway, respectively. Fifty-eight per cent of Swedish workplaces reported that 60 per cent or more of the workforce were working in teams, while in Finland and Denmark the corresponding figures (but relating to 50 per cent or more of the workforce) were 30 and 10 per cent, respectively.

One of the more hotly debated issues in European works organisation is the extent to which team working corresponds to the “Scandinavian” model or the “Toyota”

model. According to Fröhlich and Pekruhl (1996), the Scandinavian model may be distinguished by voluntary (as opposed to compulsory) membership, group (as opposed to management) selection of the membership and the leader, mixed (as opposed to uniform) qualifications, skill dependent (as opposed to seniority dependent) rewards, relatively complex tasks, pace of work independent of technology, wide autonomy and voluntary internal division of labour. The opposite applies to the Toyota model. While the EPOC questionnaire was not designed to capture all of these characteristics, on the basis of the type of approach described above, Benders *et al.* (1998) concluded that the Scandinavian model was very rare. The majority of workplaces with team working tended to follow a model closer to the Toyota one. This is consistent with findings from the 1998 U.K. Workplace and Employee Relations Survey (WERS98), that 65 per cent of managers reported that most employees in the largest occupational group at their workplace worked in formally designated teams. However, out of this 65 per cent, only 5 per cent said that team members had to work together to the extent of being given responsibility for specific products or services, jointly deciding how work was to be done and appointing their own team leaders [Cully *et al.* (1998)].

Delegation of responsibility

Table 4.1 provides a number of indicators of the degree to which responsibility for a range of different tasks is delegated to individuals and groups within workplaces. The data are taken from the EPOC survey and the 1992 Price Waterhouse Cranfield survey [Brewster and Hegewisch (1994)]. They have been arranged in rough geographic groupings. The EPOC data are based on answers to questions which first ask managers if individuals and groups are given the right to make decisions on how their work is performed, and then, if the response is positive, ask which of a number of possible domains are covered. Delegation is taken to occur only if at least one domain is mentioned.³

As noted by EPOC (1997), there seems to be a distinct southern European pattern – the incidence of individual and group delegation is relatively low in Italy, Portugal and Spain. There is, however, no uniform “north-

2. The issues were allocation of work, scheduling of work, quality of work, time keeping, attendance and absence control, job rotation, co-ordination of work with other internal groups, and improving work processes. See Benders *et al.* (1998) for further details. The method ignores questions of co-operation and pooling of skills, generally considered to be essential features of team-working. However, the argument is presumably that it would be impossible for groups of workers to be responsible for important issues without them.

3. Without the application of this criterion, the results would be much higher. For individual delegation, the domains in question are: scheduling of work; quality of product or service; improving work processes; dealing with “internal” customers; dealing with external clients; time keeping; attendance; and working conditions. For group delegation, they are: allocation of work; scheduling of work; quality of work; time keeping; attendance and absence control; job rotation; co-ordination of work with other internal groups; and improving work processes.

Table 4.1. Indicators of delegation of responsibility

Percentage of workplaces reporting presence of practice

	Individual delegation, 1996	Group delegation, 1996	Quality circles, 1992
Sweden	69	56	9
Denmark	57	30	10
Netherlands	59	48	15
Germany	64	31	19
France	54	40	20
United Kingdom	53	37	18
Ireland	62	42	11
Italy ^a	44	28	..
Spain	40	10	17
Portugal	26	26	11
Unweighted average	55	36	14

.. Data not available.

a) Data for Italy from the EPOC survey refers to the three months prior to the survey in 1996 and for the other countries to the three years prior to the survey.

Sources: Data on individual and group delegation are from the EPOC survey. Data on quality circles are from the Price Waterhouse Cranfield survey.

ern” European pattern, nor indeed a uniform Nordic pattern. While Sweden is in first place, Denmark is relatively low for group delegation.⁴ Another interesting feature is the difference between the Netherlands and Germany, despite the fact that both countries have rather similar workplace industrial relations systems, and (according to the results of another question on the EPOC questionnaire) attach a similar level of priority to quality-of-working life issues. According to the Price Waterhouse Cranfield survey, which confirms indications from the Nordflex study, the influence of the “quality circle movement” in Sweden and Denmark has been limited, no doubt because quality circles are not a part of the Socio-technical approach which has been influential in the Nordic countries.

For Canada, data from the Pilot Workplace and Employment Survey (WES) supplied by Statistics Canada suggest a considerably higher incidence of quality circles than for European countries – 34 per cent of workplaces with 50 employees and over reported their presence (over the 12 months to April 1996), compared with only 14 per cent on average for the 10 EU countries in Table 4.1.⁵ United States data also suggest higher levels than the European average, though not necessarily higher than the European leaders – 16 per cent according to the 1993 SEPT survey [Gittleman *et al.* (1998)] and 27 per cent on the basis of the 1995 SEPT survey [Frazier *et al.* (1998)]. Data from the 1995 Australian Workplace Industrial Relations Survey (AWIRS95), on the other

hand, suggest figures very close to the European average shown above [Morehead *et al.* (1997)].

The Nordflex (forthcoming) project provides detailed data on delegation for the four Nordic countries covered. A substantial proportion of workplaces in Sweden, Denmark and Finland report the delegation of daily planning to individuals (57 per cent, 62 per cent and 40 per cent, respectively) as opposed to only 20 per cent in Norway. A roughly similar, though slightly lower, pattern of results was obtained for quality control. Sweden has the highest reported level of delegation of purchasing, at around 14 per cent.

Evidence from non-representative samples

A further source of information comes from surveys designed to allow firms to “benchmark” the incidence of their training, work organisation and other practices against the average for similar firms. Surveys of this kind, both with an international dimension, were carried out in 1998 by the American Society for Training and Development (ASTD) and the Centre for Effective Organizations (CEO).

The ASTD survey, described in Bassi and Van Buren (1999), provides information not only for US-based firms, but also for firms in Canada, Japan and Europe.⁶ The results shown in Table 4.2 apply only to those size categories for which relatively large numbers of firms were available. They are generally much higher than the nation-

4. It should be noted, however, that, although the overall level of delegation in Denmark is much lower than in Sweden, for those workplaces with delegation Denmark compares well in terms of the number of issues delegated to groups.

5. See Statistics Canada (1998) for a description of this survey and a review of its results.

6. The survey also covered a relatively small number of firms in Asia and the Pacific.

ally representative survey data reported above. Examination of the full range of figures available shows this is not simply because of the size of the firms shown in the table – high incidence of these work practices were also reported for smaller firms. Rather, it probably relates to the use of the survey for benchmarking. Firms responding are clearly interested in the topic and may well be concerned to ensure they score well against the average. However, the figures are internally consistent. They show the expected drop from the numbers of firms reporting that the practice is present at all, to the numbers indicating that at least 50 per cent of the workforce is affected.

Canada and the United States have very similar figures. The main differences relate to task forces, problem solving teams or quality circles and TQM, for which there is a suggestion of greater depth of use in Canada. For Japan, where comparisons have been confined to the 1 000 employees and over group, the reported incidence of practices is broadly similar to those for Canada and the United States. However, results for “job rotation or cross training” are comparatively low. This is in contradiction to the two-country study of Japan and the United States by Lincoln and Kalleberg (1990). However, as noted by Cole (1979), survey evidence of job rotation in Japan requires careful interpretation – job rotation is so much a part of Japanese employee management systems that some managers may not regard it as representing anything other than standard working practice.

The results available for Europe apply only to a tiny sample of firms, spread roughly evenly across the larger

European countries, with relatively high numbers in Ireland, Germany, Austria and Hungary. They cannot be regarded as in any sense representative of the population of large European firms. However, it is interesting to note the similarity in the pattern of results for Europe and those for the other countries. This suggests that there is a group of large firms in Europe which use flexible working practices to a roughly similar extent to large firms in North America.

The Center for Effective Organizations (CEO) study, reported by Lawler *et al.* (1998), provides information about Fortune 1 000 corporations in the United States (Table 4.3). Overall, bearing in mind the differences in question wording, and the larger average size of the Fortune 1 000 firms, the results for the United States appear broadly consistent with those provided by the ASTD for the 1 000+ category. In addition, the table shows similar results from Spain, where the bulk of the questionnaire was administered to larger industrial corporations. Overall, the United States firms report higher levels of use of the various practices than their Spanish counterparts (with the exception of quality circles). However, the differences are much less for firms reporting that 40 per cent or more of their workforce are covered by the practice. This latter result suggests that, while a smaller proportion of larger, industrial Spanish firms have introduced flexible working practices, many that have done so have moved to a similar intensity of use as large firms in the United States.

Table 4.2. Percentage of workplaces reporting the use of selected work organisation practices, by firm size, 1998

Firm size (number of employees)	Canada		Japan	United States		Europe	
	100-999	1 000+	1 000+	100-999	1 000+	100-999	1 000+
At least some workers involved in the practice							
Job rotation or cross-training ^a	92	88	70	85	89	95	97
Self-directed work teams ^b	48	54	..	43	56	67	72
Task forces, problem solving teams or quality circles	87	85	83	88	92	95	100
Employee involvement with management in business decisions	74	87	83	72	76	81	66
Total quality management	68	73	76	69	74	76	83
At least 50 per cent of workforce involved in the practice							
Job rotation or cross-training ^a	27	13	28	20	18	38	17
Self-directed work teams ^b	15	8	..	11	4	33	14
Task forces, problem solving teams or quality circles	31	13	37	16	20	29	10
Employee involvement with management in business decisions	19	10	13	20	17	33	7
Total quality management	39	25	24	27	31	38	21
<i>Number of firms in sample</i>	62	52	54	149	133	21	22

.. Data not available (the question was not asked in Japan).

a) Cross-training is defined as training workers for jobs other than those they are currently doing.

b) Self-directed work teams are small groups of workers whose members have the authority to handle a wide range of issues relating to the team as they see fit, in order to fulfil its objectives.

Source: Calculations by the Secretariat on the basis of data supplied by the American Society for Training and Development.

— Table 4.3. Incidence of selected workplace practices in the United States and Spain —

		Percentages			
		United States ^a		Spain ^b	
		At least some employees involved in the practice	At least 40% of employees involved in the practice	At least some employees involved in the practice	At least 40% of employees involved in the practice
Job enrichment or redesign	1987	61	11	..	..
	1990	75	9	..	..
	1993	83	18	..	..
	1996	87	25	..	..
	1997	..	..	70	27
Self-managing work teams	1987	27	1	..	..
	1990	47	1	..	..
	1993	69	5	..	..
	1996	78	9	..	..
	1997	..	..	30	8
Quality circles	1987	60	10	..	..
	1990	68	13	..	..
	1993	66	15	..	..
	1996	60	12	..	..
	1997	..	..	62	28
Employment participation groups other than quality circles	1987	69	15	..	..
	1990	87	22	..	..
	1993	92	35	..	..
	1996	94	38	..	..
	1997	..	..	74	27

.. Data not available.

a) Fortune 1 000 firms.

b) Large industrial companies.

Sources: United States: Lawler *et al.* (1998); Spain: data supplied by Professor Juan Antonio Marin Garcia, Universidad Polit cnica de Valencia.— Table 4.4. Percentage of workplaces in 1996 reporting selected management initiatives over the past three years^a —

	Job rotation	Installation of team-based work organisation	Greater involvement of lower level employees	Flattening of management structures
Sweden	38	29	60	46
Denmark	28	40	10	42
Netherlands	9	9	46	47
Germany	7	20	19	30
France	6	30	44	21
United Kingdom	13	33	48	45
Ireland	10	27	32	23
Italy	13	28	24	10
Spain	14	34	33	..
Portugal	9	22	9	3
Unweighted average	15	27	33	29

.. Data not available (question asked was different).

a) Data for Italy refer to the three months prior to the survey.

Source: Secretariat calculations based on data from the EPOC survey, referring to workplaces with 50 or more employees.

Table 4.5. **Methods of employee involvement, Australia^a**

Percentage of firms reporting existence of practices

	1990	1995
Quality circles	16	16
Joint consultative committees	20	44
Task forces or <i>ad hoc</i> joint committees	33	47
Employee representatives on board of managing directors	9	16

a) Data refer to workplaces with 50 or more employees.

Source: Morehead *et al.* (1997).

C. Comparisons of change

Information on the extent of recent initiatives to extend the use of flexible working practices is available from the EPOC survey, which asked managers to report initiatives undertaken over the previous three years (Table 4.4) in four areas, each of which corresponds fairly closely to the four categories of flexible working practices set out in the introduction to this chapter. It should be stressed that this information relates both to initiatives to introduce flexible working practices as well as to extend the use of already-existing practices.⁷

According to the EPOC data shown in Table 4.4, the highest figures for management initiatives in the area of job rotation are to be found in Sweden and Denmark. While Germany was assessed above as likely to display comparatively high rates of job rotation compared with France and the United Kingdom, this does not appear to be the case for initiatives to introduce or extend the practice. Here, both Germany and France, together with the Netherlands and Portugal, have figures well below those of the United Kingdom, which are close to the average for the 10 countries. Most countries show lower figures for the introduction or extension of job rotation than for team working, where there is also comparatively little variation overall.

Despite its already very high figures for individual and group delegation, Sweden reports the highest level of initiatives for the involvement of lower level employees, followed by France, the Netherlands and the United Kingdom. The countries with the lowest figures are Denmark and Portugal, with Germany also well below average. Recent initiatives to flatten management structures are reported comparatively

frequently in Denmark, Sweden and the United Kingdom. Figures for Italy and Portugal are a good deal lower.

For Australia, changes over time in the number of indicators related to the delegation of responsibility to lower level employees are available from comparisons of the Australian Workplace Industrial Relations Surveys of 1990 and 1995 (Table 4.5). Over this period, while there was no change for quality circles, there was a substantial rise in the proportion of Australian workplaces reporting three other forms of employee involvement: joint consultative committees; task forces or *ad hoc* joint committees; and employee representatives on board of managing directors. Increased use of a range of flexible working practices, again with the exception of quality circles, can be seen in Table 4.3, referring to Fortune 1 000 companies in the United States. The strongest increase is apparent for self-managing work teams, where the proportion of workforces reporting their use almost tripled between 1987 and 1996. However, the proportion of firms applying them to 40 per cent or more of their workforces remains small.

D. Summary of national patterns

There has been considerable debate as to the extent to which national systems of workplace industrial relations and corporate governance are conducive to the spread of flexible working practices. Regalia (1995) has argued that two important dimensions of workplace industrial relations are, first, whether there is a normative framework to support co-operative relationships between social partners in workplaces and, second, the source of any such framework. The source may be located within the enterprise itself, or it may flow from a higher level,

7. In addition to information on initiatives to extend the use of flexible working practices, it is important to consider to what extent practices are partially, or wholly abandoned. However, such information is sparse and must be treated with caution. Managers may be more reluctant to talk about initiatives which have failed. This might be why many studies which have investigated this issue by direct questioning, such as those reported by Wood and Albanese (1995), Storey (1995) and Bernard (1998), tend to find little evidence of the abandonment of most forms of flexible practices. However, there is evidence, in addition to that from the CEO study cited below, of the abandonment of many quality circle schemes [see for example, Boje and Winsor (1993); Hill (1995)]. It is possible that this issue will be clarified by means of the longitudinal workplace surveys which will soon be available for analysis in a number of countries, including France and the United Kingdom.

being based on legislation, general agreements between the social partners, or some combination of the two. A refinement of this classification is to consider whether or not there are institutional arrangements for works councils. In addition, aspects of corporate governance might be relevant. In some countries, such as Germany, worker representatives may have rights to board membership, as part of a “stakeholder” system of corporate governance. In other countries, such as the United Kingdom and the United States, which combine a “voluntarist” system of industrial relations with a “shareholder” approach to corporate governance, they have no such rights.

A close examination of the indicators used in this section suggests that none of these ways of classifying countries is capable of explaining the distribution of flexible working practices. For example, despite the similarities in the workplace industrial relations systems in Germany and the Netherlands (both of which are subject to statutory regulation, and have works councils with co-determination rights) the indicators show different patterns – Germany displays more evidence of job rotation and the Netherlands, team working. However, both of these countries along with France, report comparatively few management initiatives for either of these elements of job design.

A number of geographical patterns suggest themselves. There are some similarities in patterns within the Nordic countries and the Southern European countries, for example. However, these similarities are not very deep. In general, for the Nordic countries, reports of flexible working in Sweden and Finland are substantially higher than in Denmark and Norway. Again, despite the similarities in the results for the Southern European countries of Italy, Portugal and Spain, there are considerable differences, such as the comparatively high figures for management initiatives to introduce team working in Spain.

In order to take the analysis further, the next section examines the types of establishments in which initiatives for flexible working practices are most common.

II. In what types of workplaces are flexible work organisation practices most common?

A. Theory

Section I established the existence of substantial differences across countries in the incidence of flexible work organisation practices. The characteristics of the workplaces themselves – *e.g.* the size of the employer, the

industry, and whether or not a trade union is present – undoubtedly play a role in determining whether or not particular practices are adopted.

The type of characteristics that can be examined as potential correlates of flexible work organisation practices hinges on the research design. As Osterman (1995) has noted, studies of the prevalence of flexible workplace practices generally fall into one of three areas, depending on the main source of information. Case studies examining in great detail the work organisation of one or a handful of firms are at one end of the spectrum and, at the opposite end, are nationally representative surveys asking a relatively small number of questions that are straightforward enough for the answers to be easily converted into quantitative or qualitative variables. In between these two are studies examining a range of firms within a particular industry or industries.

It is evident that there are advantages and disadvantages to each type of research, with the ability to generalise the results to a large portion of the economy coming at the cost of richness of detail. As nationally representative datasets are the main sources used in this section to assess the characteristics of establishments with flexible work practices in place, the focus will be primarily on the kinds of variables that are available in such sources and these factors are discussed below.

Size of the workplace

The size of a workplace is a dimension that has received considerable attention in the economics and management literature. It is likely to play a role in the adoption of flexible practices, though the direction of the effect is not clear, *a priori*. If there are economies of scale involved in implementing and maintaining the new practices, larger firms will be more likely to employ them. Larger employers may also possess advantages in terms of having the resources available to make costly organisational changes or in gathering information about the latest developments in management philosophy. Many of the flexible practices stress the importance of improving communication among employees. Such concerns may be less pressing at smaller workplaces, where informal contact among employees may be more frequent. Relatedly, (very) small employers are almost necessarily less hierarchical than larger ones, lessening the need to take measures to “flatten” the organisational structure.

Industry and ownership

The industry of a workplace may have an important relationship to human resources practices. Certain products and services may be better suited than others to the

production styles to which the newer practices are complementary. Similarly, the technology in use and capital intensity are also apt to be linked to human resources management.

Whether or not a workplace is privately-owned and whether or not it operates for profit also may influence the types of work practices in place. As with size, however, it is difficult to predict in advance the direction of these relationships. While the private sector is presumably the driving force in OECD economies, not all private firms are on the cutting edge. Private firms have pressure to improve their performance to maintain profitability, but public entities can face such pressures as well [Marsden (1996)]. For state-owned companies, moreover, additional resources may be available to invest in the workforce. Such firms, government agencies, and, perhaps, non-profit firms as well, may be more apt to take measures that improve the work environment for their employees, rather than only taking measures thought to improve performance directly.

Competition

A number of facets of the competition a workplace faces are also likely to influence the human resources practices in place. Many of the innovative practices are often viewed as less compatible with businesses that compete to provide a simple product at the lowest possible cost and more compatible with competition on the basis of quality or variety, where businesses must differentiate their products and modify them to meet specific customer needs. It is frequently assumed that stiff product market competition raises the rate of innovation, as managers and workers are forced to work harder and smarter in order to stay in business. But, for taking initiatives with respect to work organisation practices as with any innovations, significant resources are required for successful implementation, suggesting that firms with above-average profits will find it easier to finance these types of organisational changes. Companies that have recently lost ground to their competitors may also consider adjustments to work

organisation, though this may be more likely when the source of the problem is considered to be internal [Pil and MacDuffie (1996)]. Finally, the extent of foreign competition may have an effect distinct from that of domestic competition, as the process of selling goods or services abroad may increase the company's exposure to innovations abroad, including those in the human resources arena. But, as Osterman (1994) notes, the causality may run in the opposite direction, with an improved performance made possible by the new practices now enabling a firm to compete internationally.

Industrial relations

Human resource practices cannot be considered independently of the state of industrial relations in the workplace. The presence of works councils and trade unions can foster or impede the likelihood of taking initiatives. For some employees, a works council may be viewed as a substitute for increased direct participation [Addison *et al.* (1997)]. In addition, in an atmosphere where workers are highly suspicious of the motives of managers, unions may consider as threatening mechanisms that encourage communication between managers and employees while bypassing the unions. In North America, where unions have been intertwined with an internal labour market system under which the wage scale is closely tied to a specific, narrowly-defined job rather than to a worker's skills and qualifications and where progression up the job ladder is often tied to seniority, a movement toward more flexible ways of assigning workers requires, at a minimum, a major reorientation of union thinking [Bélanger and Dumas (1998)]. In a climate of trust between labour and management, however, trade unions may help rally workers to co-operate with management's efforts to improve the productivity of the workplace. In fact, there are examples, such as in the steel and textile industries in the United States, where unions have taken a proactive approach to the reorganisation of work [Appelbaum and Berg (1997)].

Characteristics of work

Bailey (1993) states three conditions that must hold in order for alternative work practices to be able to improve the performance of the establishment: employees should possess knowledge or skills that the managers do not have; employees are motivated to apply this skill and knowledge through what he terms “discretionary effort”; and the organisation is structured in such a way that this discretionary effort can be used in order to bring about better performance. These considerations argue that, if the work is more complex, more variable and requires higher levels of skill, the innovative practices are more likely to be adopted.⁸ Some care must be taken, however, in examining this relationship, as the requirements of jobs may not be something dictated by the technology or product market conditions, but by a conscious human resource strategy, of which the innovative work organisation practices may be a part.⁹

Supporting human resource management practices

The conditions laid out by Bailey (1993) also suggest that firms with human resource practices in place that serve to recruit highly-skilled workers, ensure that such workers continue to develop their skills via training and contribute to the motivation of these workers, will also be more likely to have adopted the innovative work organisation practices. For flexible work organisation practices to have a positive impact on firm performance, a “bundle” of complementary practices may need to be in place, which will include both those practices that directly affect how work is carried out, as well as supporting practices such as the existence of training, selective recruiting procedures, and contingent compensation practices (*e.g.* profit-sharing and skill-based pay) that serve to motivate workers [MacDuffie (1995)]. It is also important to bear in mind that firms who have made substantial investments in their workers and are looking for a strong commitment from them, are likely to take steps to encourage a long-term employment relationship. Here, too, caution must be exercised in inferring that the pre-existence of complementary resource practices facilitated adoption of new work organisation practices, rather than vice versa.

Barriers to adoption

The discussion above suggests that whether and how much flexible work organisation practices improve the performance of a firm depend on various characteristics of the employer as well as the business environment. One explanation for why the use of these practices is not more widespread, therefore, is that any benefits are highly dependent on particular market and product characteristics and thus in a substantial number of cases the gains will be small or non-existent [Bailey (1993)]. There is, however, a belief among some observers, particularly of the American scene, that the rate of adoption is lower than what would be predicted on the basis of where such practices are likely to be profitable. This perceived failure to change organisationally when it would be beneficial to do so has given rise to a literature seeking to explain this behaviour [Levine and Tyson (1990); Appelbaum and Batt (1994); Levine (1995)]. One explanation focuses on the reluctance on the part of managers to cede control and responsibility to lower-level workers. Another, only applicable in countries where equity markets play a dominant role and have a short-term focus, is that the financial markets tend to view more favourably investments in physical capital than harder-to-monitor, less tangible investments in human capital required to implement flexible workplace practices.

These arguments have been taken a step further to suggest that, owing to various market failures, the level of adoption that would result if all firms chose the practices that maximise profits is still below that which is optimal for society as a whole. For instance, it may be the case that a traditionally-managed firm has lower productivity than its more flexible counterpart but may still earn higher profits because its workers are in a weaker bargaining position and thus earn less. As a result, managers have an incentive to resist adoption, even though the combined gains to the firm and the workers would be greater with flexible practices in place. Another argument concerns the possibility of market failure related to employee training, which many have argued causes firms in countries such as the United States and the United Kingdom to train their workers too little [Lynch (1994)]. Assuming that

8. The research of Finegold and Wagner (1997), comparing the United States and Germany pump industries, provides an example of how the influence of the skill levels of jobs on the move toward work reorganisation may be mediated by a range of labour market institutions. Skilled American workers were found to be less likely than their German counterparts to resist the movement toward teams, as most of the former did not come through an apprenticeship programme and, partly as a result, identified themselves less with a particular craft and the accompanying specialised set of skills.

9. As the relationship between skill requirements of jobs and work organisation indicates, difficult issues are raised in terms of which variables should be treated as exogenous and which as endogenous. The practice used here is to regard as exogenous those characteristics that are presumably beyond the control – at least over the short-term – of the managers who decide on human resources practices. These variables include the industry and size of employer, the presence of trade unions and work councils, and whether or not a workplace is for-profit or state-owned. Characteristics that measure some of the dimensions of work and human resource practices other than those of work organisation, though they will be used as independent variables, will be considered separately.

Table 4.6. Flexible work organisation practices by workplace size

Percentages

A. EPOC: initiatives taken in the three years prior to the 1996 survey ^a						
Workplace size (number of employees)	Flattening of management structures	Greater involvement of lower level employees	Installation of team-based work organisation	Job rotation	At least one of the four initiatives	Average number of initiatives (not percentage)
All	26.5	30.9	25.4	10.8	56.3	0.94
1-49	24.7	25.4	19.5	12.3	50.9	0.82
50-99	23.6	29.3	24.8	9.3	54.0	0.87
100-499	28.3	34.9	29.0	10.0	60.3	1.03
500-999	39.8	37.7	28.5	13.1	67.4	1.19
1 000+	40.9	39.0	33.4	12.9	66.5	1.26
B. Australia: presence of practices, 1995						
Workplace size (number of employees)	Autonomous work groups	Quality circles	Team building	Total quality management		
All	43.0	13.2	47.2	36.6		
20-49	41.5	10.6	43.3	30.5		
50-99	45.4	13.7	45.8	37.2		
100-199	41.2	18.4	55.4	44.0		
200-499	47.1	16.4	60.9	53.5		
500+	48.2	22.4	61.7	69.2		
C. Sweden: presence of practices, 1994						
Workplace size (number of employees)	Job rotation	Teams ^b				
All	65.8	91.3				
1-49	58.6	90.8				
50-99	62.0	88.4				
100-199	64.6	90.4				
200-499	75.1	96.3				
500+	85.8	100.0				

a) For Italy, the three months prior to the survey in 1996.

b) The question pertains to whether any employees involved in direct production are organised in work teams. See Annex 4.A for the definition of direct production.

Source: See Annex 4.A.

employers with the flexible practices need workers with higher levels of problem-solving and interpersonal skills, such firms may be put at a competitive disadvantage by the need to devote substantial resources to recruitment and skill development to redress the “under-training” that has occurred [Levine and Tyson (1990); Levine (1995)].

B. Empirical evidence

The new evidence presented in this subsection derives from an analysis of the EPOC survey of 10 European nations as well as of data from national surveys of Australia and Sweden (see Annex 4.A). As noted above, it is important to keep in mind the caveat that the EPOC survey measures whether initiatives have been recently taken in the area of flexible work organisation practices, while other surveys note whether or not a practice is currently in use. Of those workplaces with any such practice in place at the time the questionnaire was filled out, the EPOC sur-

vey will pick up those who have either recently introduced a practice or have made changes in the way this practice is implemented, but may miss cases where a long-standing practice has not changed recently.

Size and industry

Table 4.6 shows by establishment size the tendency of initiatives in the area of flexible workplace practices to have been recently taken in the ten EU countries and, for Australia and Sweden, the prevalence of these practices. Among the EU countries overall, it is apparent that the odds of having taken at least one initiative as well as the average number of initiatives tends to increase with size, though not dramatically so. For instance, the proportion of establishments with at least one of the four practices being considered here, ranges from 51 per cent for establishments with fewer than 50 employees to 67 per cent for those with 1 000 or more workers. The likelihood of

having each of the four individual practices tends to rise with size class, though, in the case of job rotation, the relationship is quite weak. For Australia and Sweden, the likelihood of a practice already being in place tends to rise with size, though the strength of this relationship varies with the practice.

Table 4.7 indicates that there is not much variation across sectors in the EPOC countries in terms of the average number of initiatives taken, with the exception of construction (see Annex 4.A for definitions of sectors). Though flexible practices tend to be more strongly associated in the business press with manufacturing than with other industries, only for job rotation is the sector containing manufacturing the one that has most frequently taken initiatives.¹⁰ For Sweden, manufacturing is the clear leader in the prevalence of job rotation and construction lags furthest behind, while for teams, construction is actually in the forefront, while the incidence rate for manufacturing is about average for the economy as a whole. For Australia, manufacturing has an above average prevalence rate in three out of four cases, while construction is actually the leader in terms of the incidence of quality circles and TQM.

Multivariate analysis

In order to incorporate the effects of more than one set of independent variables at a time, logit analysis is used to assess which factors are correlates of having taken initiatives with respect to work practices in the past three years. A standard dichotomous logit is run for each of the four practices and for any of the practices, while an ordered logit is used in the case where the dependent variable is the number of practices where initiatives have been taken. Logit analysis is used in cases where the dependent variable can take on only a small number of values. In the dichotomous logit used in this section, the value is 0 when no practice is in place and 1 when it is. For the ordered logit, the values range from 0 to 4, representing the number of practices in place. The coefficients for the dichotomous logit indicate, all else equal, how a change in one of the independent variables affects the likelihood of a practice being observed, with a positive coefficient indicating that those workplaces with a higher value of the

independent variable tend to be more likely to have a particular practice in place. The situation is analogous for the ordered logit, though, in that case, one can calculate the impact of an independent variable with respect to the probability of having each possible number of practices. The EPOC data for all countries are pooled together for this analysis.

Table 4.8 shows the results for the “structural” characteristics, which here include those relating to country, size, industry, the existence of a collective bargaining agreement, the presence of a works council, ownership, profit status, and the presence of foreign competition (see Annex 4.A for a definition of these variables). Certain aspects of the industrial relations system in place are significantly associated with whether or not initiatives have recently been taken. Establishments with works councils – more precisely, those employers who have representatives of the employees in the largest occupation group recognised for consultation or joint decision-making at the workplace – are more likely to have taken initiatives in all practice areas, except for teams. These relationships lead to a similarly positive relationship with the variables for “any initiative” and the average number of initiatives. The presence of a collective bargaining agreement also has a significant relationship with these two summary variables, with unionised workplaces more likely to have flattened their management structure and to have installed teams.¹¹

The existence of foreign competition does not always have a significant positive relationship with the taking of initiatives; it is associated with a greater likelihood of having taken measures to flatten management structures and to enhance the involvement of non-supervisory employees, but the relationships with the other two initiatives are insignificant. Overall, though, establishments with foreign competitors were more likely to have taken any one initiative as well as to have taken a greater number of initiatives, a finding that is consistent with that of Osterman (1994).

Whether or not a workplace is private or state-owned does not appear to have a strong effect on the existence of any of the four individual initiatives, though it does have a significant positive relationship with whether or not any initiative occurred.¹² Workplaces in the for-

10. Given that retail trade has a reputation for being behind in terms of innovative practices, it may seem surprising that the industry grouping including it has an above-average rate for taking initiatives. This grouping does, however, include other industries such as wholesale trade, which past research has shown has a relatively high incidence rate for the presence of these practices [Gittleman *et al.* (1998)].

11. The results are in contrast to those from the United States, with both Osterman (1994) and Gittleman *et al.* (1998) having found no evidence of a significant overall relationship between trade union presence and whether or not an employer had at least one of the practices under consideration, though the latter did find that the presence of a labour union was positively related to some of the individual practices. One explanation for why the American results differ is that American managers may employ certain human resource strategies in order to lessen the attraction of unions [Kochan *et al.* (1986)].

12. This is driven by the fact that the variable for whether a workplace is a private one has a positive, though not statistically significant, relationship with whether or not there is a greater involvement of lower level employees, which is the most prevalent of all the initiatives.

Table 4.7. Flexible work organisation practices by industry

Percentages

A. EPOC: initiatives taken in the three years prior to the 1996 survey ^a						
Industry ^b	Flattening of management structures	Greater involvement of lower level employees	Installation of team-based work organisation	Job rotation	At least one of the four initiatives	Average number of initiatives (not percentage)
All	26.5	30.9	25.4	10.8	56.3	0.94
Mining and quarrying; manufacturing	27.3	33.0	24.9	13.8	57.5	0.99
Transport, storage and communication; electricity, gas and water	31.3	29.1	21.8	12.4	62.2	0.95
Finance, insurance, real estate and business services	22.5	29.1	26.4	7.6	56.3	0.86
Community, social and personal services	21.3	30.7	25.5	7.8	55.6	0.85
Wholesale and retail trade, restaurants and hotels	31.6	33.9	30.0	11.4	58.6	1.07
Construction	19.8	15.1	15.5	3.6	38.9	0.54
B. Australia: presence of practices, 1995						
	Autonomous work groups	Quality circles	Team building	Total quality management		
All	43	13	47	37		
Mining; manufacturing	47	21	40	39		
Transport and storage; communication services; electricity, gas and water supply	40	18	51	44		
Finance and insurance; property and business services	49	16	48	45		
Health and community services; education; cultural and recreational services; personal and other services; government administration	51	9	49	33		
Wholesale and retail trade; accommodation, cafes, restaurants	28	9	49	32		
Construction	45	25	41	55		
C. Sweden: presence of practices, 1994						
	Job rotation	Teams ^c				
All	66.0	90.8				
Manufacturing	79.9	90.5				
Communication	53.1	89.5				
Finance	47.7	91.0				
Trade	61.5	88.4				
Construction	43.5	97.6				

a) For Italy, the three *months* prior to the survey in 1996.

b) Differences in terminology are due to differences in national classifications.

c) The question pertains to whether any employees involved in direct production are organised in work teams. See Annex 4.A for the definition of direct production.

Source: See Annex 4.A.

Table 4.8. Correlates of initiatives in flexible work organisation practices^a

Structural variables

	Flexible work organisation practice					
	Flattening of management structures ^b	Greater involvement of lower level employees	Installation of team-based work organisation	Job rotation	At least one practice	Number of practices
Private company	0.028 <i>0.148</i>	0.096 <i>0.127</i>	-0.169 <i>0.127</i>	-0.125 <i>0.185</i>	0.258** <i>0.118</i>	0.012 <i>0.105</i>
Workplace active in the profit sector	0.164 <i>0.151</i>	-0.092 <i>0.133</i>	-0.387*** <i>0.136</i>	0.269 <i>0.194</i>	0.108 <i>0.125</i>	-0.069 <i>0.109</i>
Collective labour agreement binding in the workplace	0.228** <i>0.101</i>	0.167 <i>0.102</i>	0.269** <i>0.107</i>	-0.039 <i>0.146</i>	0.170* <i>0.094</i>	0.185** <i>0.082</i>
Foreign competition for workplace products	0.572*** <i>0.089</i>	0.281*** <i>0.082</i>	0.005 <i>0.083</i>	0.181 <i>0.116</i>	0.183** <i>0.075</i>	0.299*** <i>0.067</i>
Works council representation	0.179** <i>0.086</i>	0.319*** <i>0.078</i>	0.021 <i>0.080</i>	0.355*** <i>0.112</i>	0.195*** <i>0.071</i>	0.240*** <i>0.064</i>
Number of observations ^c	4 244	4 640	4 640	4 640	4 640	4 640

a) Estimates in the last column are based on the ordered logit model and in the other columns, on a standard dichotomous logit model.

Structural variables also include controls for country, establishment size and economic sector.

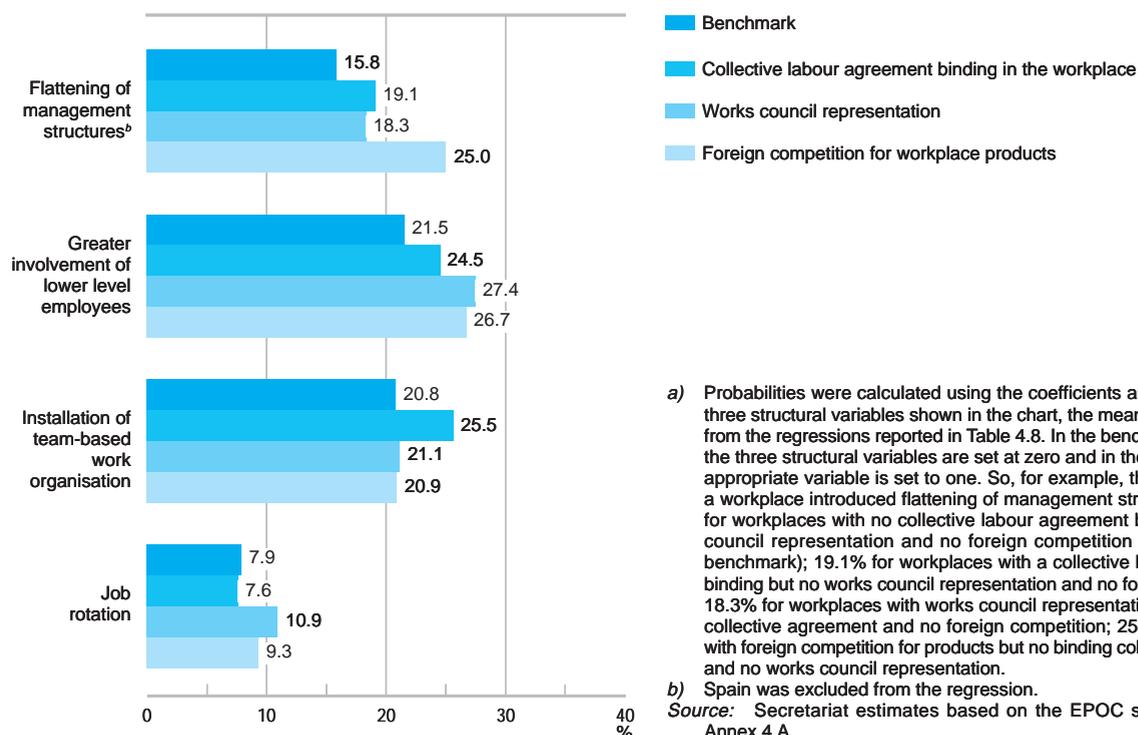
***, ** and * indicate significance at the 1%, 5% and 10% levels respectively, asymptotic standard errors are in italics.

For each model, the likelihood ratio test indicated that the explanatory variables are jointly significant at the 1% level.

b) Spain was excluded from the regression.

c) Because of non-responses to some questions, the number of observations varies and is less than the sample size of 5 786.

Source: Secretariat estimates based on the EPOC survey 1996, see Annex 4.A.

Chart 4.1. Effect of changes in structural variables on the probability of having taken initiatives in flexible work organisation practices^a

a) Probabilities were calculated using the coefficients and, except for the three structural variables shown in the chart, the means of the variables from the regressions reported in Table 4.8. In the benchmark probability, the three structural variables are set at zero and in the other cases, the appropriate variable is set to one. So, for example, the probability that a workplace introduced flattening of management structures is: 15.8% for workplaces with no collective labour agreement binding, no works council representation and no foreign competition for products (the benchmark); 19.1% for workplaces with a collective labour agreement binding but no works council representation and no foreign competition; 18.3% for workplaces with works council representation but no binding collective agreement and no foreign competition; 25% for workplaces with foreign competition for products but no binding collective agreement and no works council representation.

b) Spain was excluded from the regression.

Source: Secretariat estimates based on the EPOC survey 1996, see Annex 4.A.

profit sector do not appear to be significantly different than their non-profit counterparts in taking initiatives in work practices. This finding is also apparent from a more detailed investigation of the ASTD data presented in Table 4.2.

Chart 4.1 illustrates the quantitative relationship between the probability of having taken an initiative and the three structural variables found to be most important in the regressions of Table 4.8, those relating to trade unions, works councils and foreign competition. For each initiative, the chart shows, as a benchmark, the predicted probability for a hypothetical workplace that has average values for all characteristics other than these three variables, but is not bound by a collective labour agreement, has no works council representation and faces no foreign competition. This probability is then recalculated three times, in each case changing one of these three dichotomous variables to its opposite, but leaving the others unchanged.

As an example, the chart indicates that the probability that this hypothetical employer will have taken an initiative to flatten the management structure is 0.16. The corresponding probability for a workplace with the same characteristics except that a collective labour agreement is in effect is 0.19.

A key issue is whether the influence of these structural characteristics is important in explaining the observed differences in the prevalence of initiatives across countries discussed in Section I. Table 4.9 shows for each of the four initiatives, the probability for workplaces in each country of having taken an initiative, before and after the inclusion of the other structural variables. In other words, the first column of each pair shows the “raw” probability of having taken an initiative, while the second estimates what these probabilities would be if the characteristics of the workplaces for each country were the same as the average for all countries combined. What is striking is that the structural variables, even though in many cases important predictors of the initiatives, explain very little with respect to the cross-country differences. Owing in part to a broad similarity in the distribution of workplace characteristics across nations, the probabilities change very slightly and there are few changes in rank. In general, despite the presence of a number of significant relationships, the explanatory power of the regressions in these sections are very low, indicating the potential importance of factors not measured in the data, *e.g.* a workplace’s business strategy or the type of technology in place, in

explaining the adoption of flexible practices.¹³ It is evident as well, given the large variation across countries, that a range of nation-wide factors also play a major role, such as differences in management culture, industrial relations systems, labour law and public policy.

Does the kind of work being performed affect the likelihood of observing recent initiatives? To test this notion, the specifications summarised in Table 4.8 are augmented by a set of variables describing the characteristics of work. The results are shown in Table 4.10 (see also Chart 4.2 for an indication of the quantitative impact of these variables). When the largest group of non-managerial employees is production employees, the workplace is more likely to have taken initiatives to flatten the hierarchical structure and to enhance lower level involvement, but this is not the case for measures related to teams and job rotation. This finding is slightly at odds with that of Osterman (1994) for the United States, who found that in workplaces where “blue-collar” employees are the “core” employee group, establishments were less likely to have teams in place, but more likely to have job rotation.

One of the conditions noted above for innovative work practices to be effective – that workers should have knowledge and skills that managers do not have – suggests that the practices are more likely to be in place when the work is complex. Some support for this notion is found. Two variables that are suggestive of the complexity of a job – whether work involves a range of different tasks and whether recruits need to be trained – have significant associations with both the number of initiatives and whether or not any initiatives at all have been taken. Both are important predictors of whether workplaces have recently taken initiatives to flatten the management structure and to involve lower level employees to a greater extent. Consistent with this, workplaces where few or no qualifications are required are less likely to have flattened their management structure and to have installed team-based work organisation. In a related finding, Osterman (1994) concluded that the skill levels of jobs were positively related to the presence of the innovative practices.

Finally, it is of interest to examine the relationship between various supporting human resources practices and the initiatives concerning work organisation. EPOC asks a number of questions about the availability for the largest occupational group of incentive compensation schemes that are thought to motivate workers: whether components of pay reflect skill; whether bonuses are related to individual attitude; whether bonuses are related

13. As an example, using a linear probability model, where the measure of fit is more easily interpretable than for the logit models, the adjusted R-squared for the probability of having taken an initiative to flatten the management structure rises from 0.065 with country dummies being the only explanatory variables to 0.105, when controls for size, sector, private ownership, for profit, works councils and trade unions are included.

Table 4.9. **Cross-country differences in the probability of having taken an initiative in flexible work organisation practices^a**

Percentages

	Flexible work organisation practice							
	Flattening of management structures ^b		Greater involvement of lower level employees		Installation of team-based work organisation		Job rotation	
	Country only ^c	Structural variables ^d	Country only ^c	Structural variables ^d	Country only ^c	Structural variables ^d	Country only ^c	Structural variables ^d
Denmark	44	45	10	11	43	45	24	23
France	20	19	40	39	26	24	6	6
Germany	31	30	18	17	18	17	7	6
Ireland	18	18	31	36	22	25	7	7
Italy	9	7	25	22	29	28	13	12
Netherlands	38	40	46	52	8	8	7	7
Portugal	3	3	10	12	22	23	11	11
Spain	..	..	35	31	40	38	17	15
Sweden	41	41	58	62	24	24	34	33
United Kingdom	48	51	51	54	39	42	16	16
Number of observations ^e	4 244	4 244	4 640	4 640	4 640	4 640	4 640	4 640

.. Data not available.

a) Probabilities have been calculated using the estimated coefficients from the dichotomous logit model and the means of the explanatory variables, other than the country dummies. Italy was included in the regressions but results are not presented since the time frame was only three months instead of three years.

b) Spain was excluded from the regressions.

c) Explanatory variables are country dummies only.

d) Explanatory variables are those in Table 4.8.

e) Because of non-responses to some questions, the number of observations varies and is less than the sample size of 5 786.

Source: Secretariat estimates based on the EPOC survey 1996, see Annex 4.A.

to individual volume of output; whether bonuses are related to team volume of output; whether profit-sharing schemes are available; and whether share-ownership schemes exist. To examine these relationships, variables summarising compensation schemes are added to the specifications and the set describing characteristics of work is removed. Though the cross-sectional data do not allow inferences about causation, a finding that the presence of incentive compensation practices is correlated with the presence of flexible work organisation practices would be consistent with the notion that the two are complementary.

In general, this hypothesis is supported by the EPOC data (see Table 4.11 and Chart 4.3). The compensation practices that have the most consistent relationship to work practice initiatives are profit-sharing and the linkage of pay to skills. The variable for team bonuses is positively related to initiatives for teams and employee involvement. Perhaps reflecting that bonuses for individual output may not be consistent with the more cooperative atmosphere desired under the new practices, however, the coefficient for the existence of such bonuses is not significant in any of the regressions for the individual initiatives. Finally, the results for employee share ownership are mixed, having a significant positive rela-

tionship with flattening, but a negative one with job rotation. In general, the results for large-scale surveys from the United States are consistent with these results. Both Osterman (1994) and Gittleman *et al.* (1998) found a positive relationship between pay for skill and profit-sharing with the presence of flexible workplace practices.

In sum, the results of this section suggest that size, industry and the kind of industrial relations system present in the workplace all are related to whether or not an employer will adopt particular work organisation practices. In addition, those workplaces with certain types of incentive compensation schemes in place also tend to have higher incidence rates. Much remains unexplained, however, suggesting the need to supplement the examination of nationally-representative datasets with that of more narrowly focused, but more detailed industry and case studies.

III. Do flexible work organisation practices tend to cluster?

Are there certain combinations of flexible work practices that are frequently observed or do they tend to be implemented in isolation? Two variants of this question

Table 4.10. Correlates of initiatives in flexible work organisation practices^a

Structural variables and characteristics of work

	Flexible work organisation practice					
	Flattening of management structures ^b	Greater involvement of lower level employees	Installation of team-based work organisation	Job rotation	At least one practice	Number of practices
Production workers	0.284** <i>0.139</i>	0.305** <i>0.129</i>	-0.010 <i>0.134</i>	0.250 <i>0.185</i>	0.082 <i>0.118</i>	0.210** <i>0.104</i>
Range of tasks	0.567*** <i>0.106</i>	0.293*** <i>0.099</i>	0.082 <i>0.102</i>	-0.121 <i>0.135</i>	0.273*** <i>0.090</i>	0.316*** <i>0.080</i>
Technology independent	-0.082 <i>0.096</i>	0.079 <i>0.087</i>	0.239*** <i>0.090</i>	-0.117 <i>0.124</i>	-0.124 <i>0.081</i>	0.007 <i>0.072</i>
Team activity	0.041 <i>0.094</i>	0.172** <i>0.086</i>	0.463*** <i>0.090</i>	0.273** <i>0.123</i>	0.290*** <i>0.081</i>	0.318*** <i>0.071</i>
Low qualifications	-0.278** <i>0.120</i>	-0.111 <i>0.107</i>	-0.340*** <i>0.114</i>	-0.067 <i>0.153</i>	-0.141 <i>0.098</i>	-0.255*** <i>0.087</i>
Recruits need training	0.196** <i>0.096</i>	0.511*** <i>0.092</i>	0.154 <i>0.094</i>	0.141 <i>0.131</i>	0.173** <i>0.082</i>	0.319*** <i>0.073</i>
Number of observations ^c	2 977	3 190	3 190	3 190	3 190	3 190

a) Estimates in the last column are based on the ordered logit model and in the other columns, on the dichotomous logit model.

All regressions include the structural variables in Table 4.8.

***, ** and * indicate significance at the 1%, 5% and 10% levels respectively, asymptotic standard errors are in italics.

For each model, the likelihood ratio test indicated that the explanatory variables are jointly significant at the 1% level.

b) Spain was excluded from the regression.

c) Because of non-responses to some questions, the number of observations varies and is less than the sample size of 5 786.

Source: Secretariat estimates based on the EPOC survey 1996, see Annex 4.A.

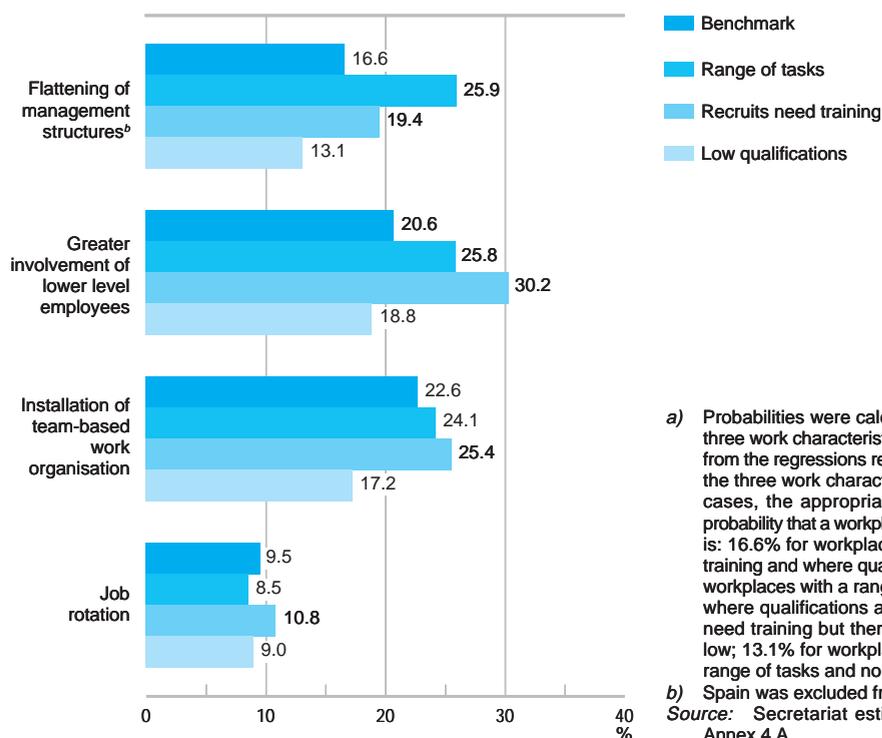
have been addressed in the literature. The first considers work organisation practices separately from other human resource management practices and is motivated in part by an attempt to make more precise the definition of a “transformed” or “high-performance” workplace [Osterman (1994)]. That is, is the presence of a single alternative practice sufficient to be considered a member of these categories, or are a certain number or combination of practices required?

The second takes a more comprehensive look at human resource management systems, examining not only combinations of work organisation practices, but also how these fit with related policies for compensation, recruitment, training and job security. Analysts have sought to determine whether employers can be grouped based on whether these work systems as a whole are in accord with the stylised models found in the literature. For instance, Appelbaum and Batt (1994) enumerate the sets of workplace policies that correspond to the “American Human Resource, the Swedish Sociotechnical Systems, the Japanese Lean Production, the Italian Flexible Specialization and the German Diversified Quality Production Models”.

This search for combinations is also motivated by the view in the management literature that the “organisational logic” of a firm and, thus, its optimal “bundle” of human resource practices will depend on the type of production system in place (*e.g.* mass versus flexible production in manufacturing), and by a theoretical literature in economics on the complementarities that may result when certain practices are used in combination [MacDuffie (1995); Ichniowski *et al.* (1997)]. Similar notions are sometimes expressed in terms of the importance of both “internal fit”, where various elements of the HRM system reinforce each other, and “external fit”, where the HRM system is appropriate for a firm’s overall strategy [Becker and Huselid (1998)]. As a simple example of a case where complementarities do not exist or where there is poor “internal fit”, Becker and Huselid (1998) offer the case where job structures are based on teams, but incentive systems and career opportunities are linked solely to individual performance.

An examination of Table 4.12 provides some evidence relating to the first variant of the question, whether certain combinations of work organisation practices are dominant. While the idea that there may be complementarities among such policies is implicit in some of the literature, this notion probably is more meaningful when

Chart 4.2. Effect of changes in characteristics of work on the probability of having taken initiatives in flexible work organisation practices^a



a) Probabilities were calculated using the coefficients and, except for the three work characteristics shown in the chart, the means of the variables from the regressions reported in Table 4.10. In the benchmark probability, the three work characteristics variables are set at zero and in the other cases, the appropriate variable is set to one. So, for example, the probability that a workplace introduced flattening of management structures is: 16.6% for workplaces with no range of tasks, no recruits who need training and where qualifications are not low (the benchmark); 25.9% for workplaces with a range of tasks, but no recruits who need training and where qualifications are not low; 19.4% for workplaces where recruits need training but there is no range of tasks and qualifications are not low; 13.1% for workplaces where qualifications are low but there is no range of tasks and no recruits who need training.

b) Spain was excluded from the regression.

Source: Secretariat estimates based on the EPOC survey 1996, see Annex 4.A.

considering human resource systems as a whole, where complementarities may exist both among the various component HRM practices and between the system as a whole and the firm's business strategy. Though certain work organisation practices may be complements in some settings, they may be substitutes in others. For instance, if employees work together in teams, there may be little need to exchange ideas via quality circles.

The second column of Table 4.12 making use of EPOC data, indicates that, if establishments have taken recent initiatives in the area of work organisation, it is likely that they have done so in only one or at most two areas. That is, of the 56 per cent of workplaces that had taken any initiative at all in the past three years, 46 per cent took only one or two initiatives, while only about 2 per cent took steps in all four areas. Partly as a result, an examination of the prevalence of different combinations of practices reveals no obvious patterns.

The data for Australia, in the third column of Table 4.12, focus on combinations of practices in place, rather than on initiatives recently taken. In part because nearly three-quarters of the sample had at least one practice in place, it is easier to find significant numbers of workplaces with particular combinations of practices. For

instance, it is more common to have a two-practice combination of TQM and teams and a three-practice combination of TQM, teams and autonomous work groups than it is to have TQM by itself. And even though quality circles appear in only 13 per cent of the workplaces, they too are more likely to be present in various combinations than by themselves. Even so, as the most prevalent "combinations of practices" are work groups and teams on their own, and neither is present in more than 13 per cent of the establishments, one would be hard-pressed to speak of a particular set of practices as being characteristic of the "transformed" workplace. Osterman (1994) and Gittleman *et al.* (1998) found a similar lack of dominant combinations in their examination of flexible work practices used by American employers.

IV. What are the labour market correlates of flexible work practices?

A thorough-going reorganisation of work can lead to widespread changes affecting numerous dimensions of work – *e.g.* compensation, skill requirements, degree of autonomy, the pace of work, and the extent of job

Table 4.11. Correlates of initiatives in flexible work organisation practices^a

Structural and compensation variables

	Flexible work organisation practice					
	Flattening of management structures ^b	Greater involvement of lower level employees	Installation of team-based work organisation	Job rotation	At least one practice	Number of practices
Pay for skill	0.203** <i>0.086</i>	0.134* <i>0.079</i>	0.260*** <i>0.082</i>	0.434*** <i>0.112</i>	0.207*** <i>0.075</i>	0.327*** <i>0.065</i>
Attitude bonus	0.145 <i>0.103</i>	0.186* <i>0.100</i>	0.066 <i>0.103</i>	0.423*** <i>0.134</i>	0.195** <i>0.094</i>	0.244*** <i>0.081</i>
Individual volume bonus	0.145 <i>0.097</i>	-0.069 <i>0.093</i>	0.053 <i>0.093</i>	-0.144 <i>0.131</i>	0.164* <i>0.086</i>	0.067 <i>0.074</i>
Team volume bonus	0.003 <i>0.103</i>	0.356*** <i>0.093</i>	0.424*** <i>0.093</i>	0.204 <i>0.125</i>	0.457*** <i>0.093</i>	0.370*** <i>0.077</i>
Profit sharing	0.237** <i>0.102</i>	0.656*** <i>0.096</i>	0.435*** <i>0.101</i>	0.266* <i>0.138</i>	0.367*** <i>0.099</i>	0.561*** <i>0.083</i>
Share ownership	0.377*** <i>0.141</i>	0.208 <i>0.132</i>	0.090 <i>0.134</i>	-0.410** <i>0.198</i>	0.218 <i>0.144</i>	0.257** <i>0.113</i>
Number of observations ^c	3 826	4 182	4 182	4 182	4 182	4 182

a) Estimates in the last column are based on the ordered logit model and in the other columns, on the dichotomous logit model. All regressions include the structural variables in Table 4.8 and control for whether production workers are the largest occupational group. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively, asymptotic standard errors are in italics. For each model, the likelihood ratio test indicated that the explanatory variables are jointly significant at the 1% level.

b) Spain was excluded from the regression.

c) Because of non-responses to some questions, the number of observations varies and is less than the sample size of 5 786.

Source: Secretariat estimates based on the EPOC survey 1996, see Annex 4.A.

security – which may cause changes in job satisfaction, the rate of absenteeism, the extent of friction between managers and workers, the rate of job turnover and the like. On balance, the evidence suggests that firms can improve their performance with the introduction of flexible work organisation practices, though the question of whether workers also benefit has been little studied. The need for more evidence on this issue is all the more pressing in light of the divergent views on the impact that these practices will have on the workforce. In this section, hypotheses about the potential impacts of these practices on workers are discussed and then the empirical evidence is examined.

A. Theory

Compensation

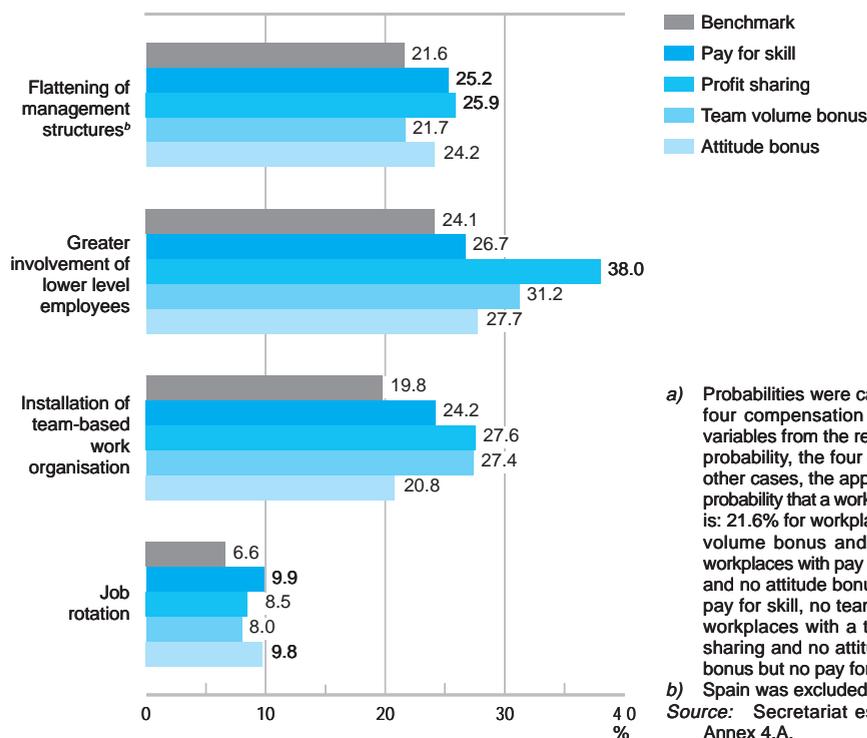
Do workers benefit financially from the presence of innovative human resource practices? If these practices actually raise the productivity of a firm and if this improvement is not matched by its competitors, the productivity gains will be translated into higher profits and higher employee compensation, with the share going to each depending in part on the bargaining power of the

workers. Other rationales for paying higher wages in the presence of flexible work organisation practices are closely linked to those stressed in the “efficiency wage” literature, where wage premia are justified in terms of boosting worker effort, reducing turnover, attracting the best workers and improving morale [Groschen (1991)].

Skill requirements of jobs

Another channel through which compensation may be affected by flexible work practices is through the influence of the latter on the skills required of workers. If the introduction of new practices increases the skills demanded, this may lead to higher productivity and higher wages. The new work systems are also predicted by many to lead to jobs with a greater variety of tasks; greater individual autonomy; and jobs with higher levels of empowerment as non-managerial employees make decisions which were previously the prerogative of managers [Handel (1998); Cappelli and Rogovsky (1994)]. In order to raise the level of skills, additional training is thought to be needed, an example of a supporting human resource practice. It is, of course, possible that significant numbers of the new, more highly skilled jobs will go to workers who

Chart 4.3. Effect of changes in compensation variables on the probability of having taken initiatives in flexible work organisation practices^a



a) Probabilities were calculated using the coefficients and, except for the four compensation variables shown in the chart, the means of the variables from the regressions reported in Table 4.11. In the benchmark probability, the four compensation variables are set at zero and in the other cases, the appropriate variable is set to one. So, for example, the probability that a workplace introduced flattening of management structures is: 21.6% for workplaces with no pay for skill, no profit sharing, no team volume bonus and no attitude bonus (the benchmark); 25.2% for workplaces with pay for skill, but no profit sharing, no team volume bonus and no attitude bonus; 25.9% for workplaces with profit sharing but no pay for skill, no team volume bonus and no attitude bonus; 21.7% for workplaces with a team volume bonus but no pay for skill, no profit sharing and no attitude bonus; 24.2% for workplaces with an attitude bonus but no pay for skill, no profit sharing and no team volume bonus.

b) Spain was excluded from the regression.

Source: Secretariat estimates based on the EPOC survey 1996, see Annex 4.A.

had been employed elsewhere rather than to retrained incumbent workers.

As is the case with predicting the impacts of the introduction of new technologies, however, there is ample reason to be cautious about predicting that the adoption of the flexible practices will raise skill levels across the board and that most or all workers will benefit. Cappelli (1996) suggests that the expectations that skill demands will be increased may be more appropriate for production workers than for their supervisors. Supervisors may serve as teachers and monitors of employees, on the one hand, and also as “lead workers”, functioning alongside production workers. If the new practices raise the skill levels of production workers, supervisors will face fewer demands for monitoring, but may find themselves facing increased demands in their function as lead workers, as the skills and abilities of the workers being supervised increase. For other supervisors, the shifting of additional tasks to lower-

level workers – either individually or as teams – implies that their jobs may be lost or their status downgraded.¹⁴

Job satisfaction

Proponents of flexible workplace practices assert that workers will achieve greater satisfaction on the job, and that this will help to reduce absenteeism and turnover. One prominent model speaks of five core task attributes that are linked to job satisfaction: that the job requires a variety of skills; that the job involves completion of an identifiable piece of work; that the job has a significant impact on others; that the job provides the worker with autonomy; and that the worker receives feedback about performance [Appelbaum and Berg (1997)]. Increased flexibility of work organisation has the potential to move the worker towards greater satisfaction along many, if not all, of these dimensions. There are reasons to suspect, however, that the changes in work life resulting from

14. Cappelli and Rogovsky (1994) offer a concrete example for scepticism about the extent to which the skill requirements of jobs are raised by changes in work organisation. In the New United Motors (NUMMI) joint venture between Toyota and General Motors, some of the tasks previously performed by industrial engineers were relegated to production teams. But, using the example of statistical process control techniques, these authors argue that it is not necessary for every worker to understand every aspect of the technique: “If one person understands the notion of confidence limits in making statistical inferences, another can read the charts, and a third knows the machine tools well enough to troubleshoot when the problems have been identified, together they have a team that can make the technique work” (pp. 212-213).

— Table 4.12. Percentage distribution of number of flexible work organisation practices —

Number of practices	Initiatives taken in the 3 years prior to the 1996 survey, EPOC countries ^a	Practices present, Australia, 1995 ^b
0	43.6	24.3
1	29.4	32.8
2	16.5	25.5
3	8.5	13.4
4	1.9	4.0

a) Spain is excluded because of a mistranslation in the question about flattening of management structures. Italy is excluded because the time frame is three months rather than three years. Initiatives under consideration are those relating to a flattening of management structures, greater involvement of lower level employees, installing of team-based work organisation and job rotation.

b) Practices under consideration are autonomous work groups, quality circles, team building and total quality management.

Source: See Annex 4.A.

these practices may not be universally positive. For some workers, the increased responsibility may be unwanted. In addition, some of the innovations connected with “lean production”, such as “just-in-time” inventory systems, which are designed to eliminate the buffers or intermediate products between work groups, may also lead to increased stress and faster work pace as work groups seek to ensure that their performance does not delay the work of other groups downstream [Cappelli and Rogovsky (1994); Parker and Slaughter (1993)].

Functional and numerical flexibility

In a number of OECD countries, there has been much discussion about the extent to which firms have shifted away from reliance on permanent workers and moved in the direction of part-time, temporary, contingent and contract workers [see Chapter 1; OECD (1996a)]. In the United States, analysis has centred around the question of whether internal labour markets¹⁵ are in decline and being replaced by market-mediated arrangements with workers outside the firm [Abraham (1990)]. In Britain, there has been an active debate about the extent to which a “core-periphery” model of employment is relevant [Atkinson and Meager (1986)].

Though the question of movement toward a more contingent and insecure workforce is hotly debated, it is also of considerable interest to examine the controversial question of what, if any, influence a movement to more flexible workplace practices might have on the stability of employment relationships. It should be noted that hypotheses in these areas tend to have a weaker theoretical foundation than those connecting profit-sharing to employment stability, for instance, where the structure of the compensation package itself may affect hiring and fir-

ing considerations [Kruse (1998)]. One hypothesis is that flexible workplace practices will help slow any movement towards a “contingent” workforce, as the increased “functional flexibility” implied by teams, job rotation, flexible job design and other practices, enables workers to shift into different tasks and lessens reliance on “numerical” flexibility, *i.e.* changes in the numbers of employees (including sub-contracted and temporary workers) and their hours.

However, there may be little reason to expect that the need for increased employment stability will encompass all workers. Instead, this relationship may only be important for a group of selected workers, suggesting that innovative practices may not reduce the need for reliance on “numerical” flexibility or, in fact, could increase it, as firms seek to protect the core group of workers in whom they have made large investments [Marsden (1996)].

B. Empirical evidence

Here, new evidence on the relationship between flexible work practices and selected labour market outcomes is presented, using the EPOC survey as well as data from surveys representative of single nations. Among the latter, the 1995 Australian Workplace Industrial Relations Survey (AWIRS95) and the US Survey of Employer-Provided Training (SEPT95) contain components addressed both to employers and to employees (see Annex 4.A). The results derived from the employer and employee surveys are presented separately in Tables 4.13 and 4.14.

Compensation

As a first cut, mean earnings were calculated by workplace (Australia and the United States) and by

15. Groshen and Levine (1998) define internal labour markets as being characterised by: “long-term commitments between employers and employees, defined career paths, limited ports of entry for each career path, wages tied to job (rather than personal) characteristics, and pay structures that exhibit rigidities across occupations and time”.

Table 4.13. Mean values for labour market outcomes by presence of flexible work organisation practices

Australia, 1995

	Autonomous work groups		Quality circles		Team building		Total quality management		Any practices	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Workplace survey										
Full-time average workplace weekly earnings (A\$)	650*	682	665	655	659	668	665	660	646	669
Voluntary labour turnover (%)	21*	15	20	13	18	20	17	21	19	19
Absenteeism (%)	2.6	2.6	2.6	2.5	2.6	2.6	2.6	2.6	2.5	2.6
Formal training provided (%)	62**	75	66**	79	62**	75	62**	78	55**	72
Employment growth (%)	5.1	3.8	4.7	3.6	3.8	5.4	4.0	5.5	1.1	5.7
Part-time employees (%)	31**	21	29**	21	28	29	30	26	32*	27
Non-core workers (%)	25**	20	24*	18	23	23	24*	21	27**	22
Dismissals (%)	2.4*	1.7	2.1	2.3	2.2	2.0	2.0	2.3	1.8	2.2
Employee survey										
Job is satisfying ^a	1.51	1.49	1.50**	1.54	1.50	1.51	1.50	1.51	1.52	1.50
Lot of effort required ^a	1.86**	1.88	1.87	1.87	1.87	1.87	1.87	1.87	1.86	1.87
Job is stressful ^a	1.14**	1.17	1.15	1.18	1.16	1.14	1.14	1.17	1.11**	1.16
Post-secondary education (%)	48**	54	50*	53	52*	50	50**	52	46**	52
Received job training over last 12 months (%)	64**	67	65*	67	61**	68	63**	67	59**	66
Do different tasks ^a	1.75**	1.78	1.76*	1.78	1.76	1.76	1.76	1.77	1.74*	1.77
Feel insecure about job ^a	0.86*	0.89	0.86**	0.91	0.87	0.87	0.85**	0.89	0.84*	0.88
Job tenure (years)	6.0	6.1	6.0**	6.1	6.0	6.1	5.6**	6.5	5.9	6.1
Part-time (%)	25**	20	24**	20	23	23	26**	19	27**	22

* Differences are significant at the 5 per cent level.

** Differences are significant at the 1 per cent level.

a) Theoretically, scores may range from 0 to 2, with 0 meaning that all respondents disagreed with the statement and 2 meaning that all respondents agreed.

Source and definitions of labour market outcomes: See Annex 4.A.

worker (United States only), by whether or not the workplace has adopted a particular work practice. In Australia, average weekly earnings for full-time employees are not significantly different depending on whether or not a practice is in place, except in the case of autonomous work groups. In the United States, average establishment monthly wages are significantly different for five of the seven practices. Of the former, the wages are higher in all cases, except for that of job rotation. The American results from Table 4.14 also suggest that hourly wages for workers tend to be higher in establishments where flexible practices are in place.¹⁶

On the other hand, Handel and Gittleman (forthcoming) have examined the relationship between practices and wages of American employers using this SEPT95 database and find, after controlling for other factors that may influence wages, that very few significant differences remain. That is, neither average wages by establishment nor hourly wages for individuals are consistently higher

when one of the flexible work organisation practices is in place than when it is not.

Two studies by Cappelli (1996, 1998) also consider the implications of the use of innovative work practices on wages. His analysis make use of a representative sample of the United States' establishments with 20 or more employees, which contains several measures of work organisation (the percentage of non-managerial and non-supervisory employees in self-managed teams, the number of levels between a first-line supervisor and the top official, the presence of a formal TQM program and the employee/supervisor ratio or span of control). After controlling for industry, size and other firm characteristics, employee attributes, and the importance of various traits in hiring, Cappelli (1998) finds that TQM is associated with higher average annual salaries for supervisors, production workers, managers, and technicians, though not for clerical workers. Self-managed teams is the only other work organisation variable to have a significant rela-

16. As with any cross-sectional relationship, the finding of a significant correlation is consistent with the practices having raised wages, higher wages having encouraged the adoption of the practices, or both the practices and wages being correlated with a third factor. Perhaps even more important, many other factors influence wages on both the establishment side (e.g. the size and industry of the workplace) and the individual side (e.g. schooling and job tenure) and these variables have not been taken into account.

Table 4.14. Mean values for labour market outcomes by presence of flexible work organisation practices

United States, 1995

	Practice is present?	Formal training provided in last 12 months (%)	Share of workforce which is part-time (%)	Share of workforce which is contract/temporary (%)	Average monthly establishment wage, 4th quarter 1993 (\$)	
Workplace survey						
Employee involvement in firm's technology and equipment decisions	No	87.7**	26.9**	25.2*	2 007**	
	Yes	98.6	16.8	32.2	2 393	
Job redesign or re-engineering	No	89.6**	25.1**	23.9**	2 102*	
	Yes	98.8	16.7	38.0	2 342	
Job rotation	No	90.4**	21.4	29.1	2 259*	
	Yes	96.5	24.4	26.8	2 020	
Co-worker review of employee performance	No	91.2**	22.5	27.6	2 101**	
	Yes	98.7	22.2	31.6	2 526	
Quality circles	No	90.5**	23.4	27.4	2 163	
	Yes	98.1	19.8	30.8	2 217	
Total quality management	No	89.4**	22.6	22.8**	2 080*	
	Yes	96.5	22.2	35.3	2 302	
Self-directed work teams	No	90.6**	23.6**	26.3**	2 127	
	Yes	100.0	17.8	36.4	2 377	
At least one of the above practices	No	80.3**	25.2	22.5*	1 993*	
	Yes	96.4	21.6	30.1	2 237	
	Practice is present?	Formal training provided in last 12 months (%)	Share of workforce which is part-time (%)	Tenure with current employer (years)	With post-secondary education (%)	Average hourly wage (\$)
Employee survey						
Employee involvement in firm's technology and equipment decisions	No	68.9	18.3**	7.3*	56.9*	12.35**
	Yes	70.5	6.6	8.4	63.8	14.50
Job redesign or re-engineering	No	62.5**	16.4**	6.4**	58.3	12.58**
	Yes	78.3	6.5	9.6	63.5	14.65
Job rotation	No	73.7**	10.0	8.1	65.4**	13.54
	Yes	65.6	13.8	7.7	55.7	13.52
Co-worker review of employee performance	No	66.0**	13.6**	7.3**	57.6**	12.83**
	Yes	83.5	5.4	9.9	71.9	16.10
Quality circles	No	65.8**	13.5*	7.4*	57.0**	12.20**
	Yes	75.6	9.4	8.5	66.1	15.50
Total quality management	No	61.4**	14.1*	6.3**	58.5	13.03*
	Yes	75.9	10.2	9.0	62.2	13.89
Self-directed work teams	No	64.8**	14.1**	7.0**	56.6**	12.45**
	Yes	81.5	6.5	10.0	70.4	16.07
At least one of the above practices	No	58.6**	13.0	5.6**	53.8	12.19*
	Yes	71.5	11.7	8.2	61.7	13.74

* Differences are significant at the 5 per cent level.

** Differences are significant at the 1 per cent level.

Source: See Annex 4.A.

Table 4.15. Mean percentages for labour market outcomes by presence of flexible work organisation practices

Sweden, 1994

	Job rotation		Teams ^a	
	No	Yes	No	Yes
Workers with above median level of post-secondary schooling ^b	62.2	44.7	56.9	47.7
Staff turnover ^c	34.1	41.5	47.0	39.3
Time in skill development for direct production workers ^d	6.0	8.0	7.0	7.6

a) The question pertains to whether any employees involved in direct production are organised in work teams.

b) Workplaces were ranked in terms of the proportion of the workforce with education beyond secondary school.

c) Turnover rate is defined as $[2(\text{hires} + \text{quits}) / (\text{employment in 1993} + \text{employment in 1994})]$.

d) Respondents were asked to provide the "percentage of the work task [that] can be regarded as organised skill improvement".

Source: See Annex 4.A.

relationship with salaries, having a positive relationship for supervisors, production workers and clerical workers. Cappelli concludes that the higher wages are paid not because workers in establishments with TQM or that make greater use of teams actually have greater levels of human capital, but because they are being paid an "efficiency-wage-type premium" to compensate them for the increased effort that these practices require.

Osterman (1998) examines the links between innovative work practices and compensation gains. He is unable to detect a significant relationship between whether an establishment was a "high performance work organisation" in 1992 and whether its workers received a wage increase five years later.¹⁷ Bailey and Bernhardt (1997) conclude from their case studies of retail firms that workplace innovations have done little in this sector to raise wages or improve benefits. Osterman (1994), moreover, did not find any significant differences, on the basis of the presence of flexible work practices, as to whether or not workplaces operated an "efficiency wage" policy, *i.e.* the payment of higher wages than in other establishments for comparable workers in the same industry and geographic area.

Skill requirements of jobs

Does the presence of flexible practices affect the skill requirements of jobs? Examining Tables 4.13, 4.14, and 4.15, one can see whether workplaces with the practices have more educated workforces than those without them. In Australia, the percentage of the workplace with a

post-secondary education is significantly higher for three of the practices, but is significantly lower in the case of team building. In the United States, the differences are statistically significant in five out of seven cases. Job rotation stands out, as it did in the case of wages, as the only practice where education levels are significantly lower when the practice is not in place than otherwise. In Sweden, however, the results of Table 4.15 suggest, for job rotation and teams, that the proportion of the workforce with post-secondary schooling is higher at workplaces without the practice than at their counterparts with the practice.¹⁸

These results contrast the average educational attainments of workers at establishments with and without the practices, but reveal less about how skill levels of workers actually participating in a practice compare with those who do not, a distinction not possible with these data. Freeman, Kleiner and Ostroff's (1997) study of US private-sector firms contains information on both the presence of a practice, as well as on whether a given employee actually participates. They find not only that the likelihood of being at a firm with employee involvement¹⁹ increases with education, but also that the probability of participating in such a program does as well.

Cappelli and Rogovsky (1994) report the result of their study of the connection between the practices and skill requirements themselves (rather than between the former and the educational attainment of the workforce), using a sample of 561 workers employed in ten US public utilities and holding 15 common job titles covering jobs

17. An establishment was considered to be a "high establishment work organisation" if it had two or more practices in place (among quality circles, job rotations, teams and TQM) affecting 50 per cent or more of "core" employees.

18. As with compensation, however, caution is warranted in interpreting the relationships, as other factors that may influence skill requirements, such as the kind of technology in use, are not taken into account in these comparisons.

19. The definition of employee involvement (EI) used in this study encompasses a broader range of practices than considered in the chapter. It includes self-managed work teams, worker involvement in the design of EI programs, TQM, committees on productivity, worker involvement in work processes, formal suggestion systems, formal information-sharing with employees and surveys of workers regarding their satisfaction.

ranging from production to managerial work. The design of the study allows a comparison of the demand for skills between establishments that are divided into two groups on the basis of the extent to which they used work practices associated with high-performance work systems. Skills are divided into three areas: foundation skills (basic reading and mathematical skills, communication and thinking skills, responsibility and management), interpersonal skills and various workplace competencies. Generally, the skills demanded in the groups employing the new practices more intensively are greater in all three areas, though the differences are not large.

Cappelli (1996) tests the proposition that innovative practices have changed skill requirements in the United States. Establishments were asked whether skill requirements for production jobs have risen in the past three years, and this measure is correlated with the four measures of work organisation noted above. The analysis also controls for other factors that might also affect skill requirements, such as capital intensity, research and development, the use of computers, the education and experience of the employees, and the presence of a union. The results suggest that the presence of TQM, team-working and a flatter organisation are associated to some extent with a greater likelihood of rising skill requirements.

As noted above, the new practices may change the variety of tasks in which skills are used. Table 4.13 shows that, in Australia, workers are significantly more likely to agree with a statement that they perform different tasks if they are in a workplace with autonomous work groups or with quality circles than otherwise, though, even for these two cases, the differences are not large.

There does appear to be a strong relation between training and the presence of flexible work practices. For both the United States and Australia (Tables 4.13 and 4.14), almost without exception, workplaces with one of the practices are more likely to have a formal training programme in place and workers at such establishments are more likely to receive training. In Sweden (Table 4.15), the portion of time spent in skill development is higher in workplaces with the practices in place than in those without. These results tend to be consistent with those elsewhere in the literature [Lund and Gjerding (1996); Osterman (1995); Lynch and Black (1998); Frazis *et al.* (1998)].²⁰

Job satisfaction

Some of the information about Australian workplaces in Table 4.13 provides direct and indirect evidence about whether workers are more satisfied with their jobs when flexible work organisation practices have been introduced. When questioned directly, only in the case of quality circles were workers significantly more likely to agree that they were satisfied, but the size of the difference is quite small. Only in the case of autonomous work groups did workers in establishments with the flexible practices face somewhat higher requirements for effort and greater levels of stress. Surprisingly, however, and reflecting that these factors did not have a large impact on work satisfaction, this is the only case as well where workers were significantly less likely to leave their jobs. Indicating that employee involvement improves satisfaction, Freeman, Kleiner and Ostroff (1997) found in their survey of American workers that elimination of the EI program would have “bad” or “very bad” effects on them. A review by Appelbaum and Berg (1997), however, finds that, historically, the evidence in this area has been mixed.

Functional and numerical flexibility

Hypotheses about the impact of flexible work organisation suggest effects, often contradictory, on many measures of the employment relationship, including the share of part-time workers, the use of temporary help and the extent of sub-contracting. Table 4.16 shows the results of a regression analysis on the relationship between the measures related to numerical flexibility that can be observed in the EPOC data and having recently taken the four initiatives that have been discussed throughout the chapter. Evidence on these relationships is also available from cross-tabulations derived from the individual national surveys of Australia, Sweden and the United States (Tables 4.13, 4.14 and 4.15).

In the analysis of the EPOC data, the “structural” characteristics discussed in Section III are included as independent variables to take into account other factors that may influence these relationships. The country of the establishment is included in light of cross-national differences that may affect the various dependent variables such as the stage of the business cycle, rates of gross job creation and job destruction, the tendency to adjust for changes in demand via changes in employment levels and changes in hours, and in the use of “flexible” working arrangements.

20. Interestingly, Coutrot (1996b) finds a negative relationship between training and just-in-time inventory in establishments in France, though a positive association with other forms of organisational innovation.

Table 4.16. Labour market outcomes and initiatives in flexible work organisation practices^a

	Dependent variable							
	Working time reduction	Working time flexibility	Downsizing ^b	Outsourcing ^c	Rise in proportion working part-time	Rise in proportion of temporary contracts	Rise in sub-contracting	Change in employment ^d
Flattening of management structures^e	0.165	0.260***	0.760***	0.704***	0.318***	0.253**	0.295***	-0.386***
	<i>0.116</i>	<i>0.080</i>	<i>0.084</i>	<i>0.104</i>	<i>0.108</i>	<i>0.103</i>	<i>0.112</i>	<i>0.072</i>
Number of observations ^f	4 431	4 431	4 055	3 790	3 234	3 321	4 431	4 326
Greater involvement of lower level employees	-0.022	0.530***	0.176**	0.230**	0.196**	0.006	0.042	0.305***
	<i>0.111</i>	<i>0.075</i>	<i>0.084</i>	<i>0.103</i>	<i>0.099</i>	<i>0.089</i>	<i>0.106</i>	<i>0.065</i>
Number of observations ^f	4 431	4 431	4 055	3 790	3 234	3 321	4 431	4 326
Installation of team-based work organisation	0.167	0.592***	0.326***	0.509***	0.217**	0.083	-0.074	0.129*
	<i>0.111</i>	<i>0.077</i>	<i>0.086</i>	<i>0.104</i>	<i>0.103</i>	<i>0.092</i>	<i>0.110</i>	<i>0.067</i>
Number of observations ^f	4 431	4 431	4 055	3 790	3 234	3 321	4 431	4 326
Job rotation	0.816***	0.595***	0.060	0.474***	0.382***	0.593***	0.089	-0.192**
	<i>0.135</i>	<i>0.104</i>	<i>0.120</i>	<i>0.139</i>	<i>0.143</i>	<i>0.124</i>	<i>0.145</i>	<i>0.091</i>
Number of observations ^f	4 431	4 431	4 055	3 790	3 234	3 321	4 431	4 326
At least one practice	0.353***	0.398***	0.449***	0.593***	0.348***	0.131	-0.038	0.031
	<i>0.104</i>	<i>0.072</i>	<i>0.082</i>	<i>0.102</i>	<i>0.100</i>	<i>0.087</i>	<i>0.097</i>	<i>0.060</i>
Number of observations ^f	4 431	4 431	4 055	3 790	3 234	3 321	4 431	4 326
One practice	0.406***	0.106	0.299***	0.484***	0.305***	0.075	-0.119	-0.075
	<i>0.117</i>	<i>0.083</i>	<i>0.093</i>	<i>0.115</i>	<i>0.113</i>	<i>0.100</i>	<i>0.113</i>	<i>0.069</i>
Two practices	0.226	0.446***	0.556***	0.570***	0.286**	0.165	-0.043	0.384***
	<i>0.145</i>	<i>0.099</i>	<i>0.111</i>	<i>0.137</i>	<i>0.135</i>	<i>0.115</i>	<i>0.138</i>	<i>0.085</i>
Three practices	0.214	1.602***	0.791***	0.811***	0.653***	0.071	0.178	-0.200*
	<i>0.201</i>	<i>0.136</i>	<i>0.141</i>	<i>0.178</i>	<i>0.172</i>	<i>0.173</i>	<i>0.184</i>	<i>0.117</i>
Four practices	1.004***	0.569**	0.751***	1.818***	0.489	0.914***	0.566**	-0.534**
	<i>0.291</i>	<i>0.233</i>	<i>0.242</i>	<i>0.271</i>	<i>0.321</i>	<i>0.266</i>	<i>0.278</i>	<i>0.208</i>
Number of observations ^f	4 431	4 431	4 055	3 790	3 234	3 321	4 431	4 326

a) Estimates in the last column are based on the ordered logit model and in the other columns, on a standard dichotomous logit model. All regressions include the structural variables in Table 4.8 and control for whether production workers are the largest occupational group. ***, ** and * indicate significance at the 1%, 5% and 10% levels respectively, asymptotic standard errors are in italics. For each model, the likelihood ratio test indicated that the explanatory variables are jointly significant at the 1% level.

b) Spain was excluded from the regressions.

c) Sweden was excluded from the regressions.

d) Change in employment comprises the three groups: an increase, about the same and a reduction.

e) This variable takes the value one if the response was flattening, in any country other than Spain, and zero otherwise.

f) Because of non-responses to some questions, the number of observations varies and is less than the sample size of 5 786.

Source: Secretariat estimates based on the EPOC survey 1996, see Annex 4.A.

An increase in working-time flexibility is consistently associated with the presence of the different work organisation initiatives that have been taken in the past three years. Working-time flexibility evidently complements a less rigid functional use of the workforce. Initiatives in the areas of outsourcing and downsizing are also consistently associated with the work organisation initiatives as well. Further research is needed to see if the forces that have led to a downsizing cause firms to move to a more participatory workplace – either because they

have rethought their business philosophy or to improve the morale of the remaining workers.²¹

Is there evidence of any relationship between the flexible work practices and the use of contingent workers? For the EPOC countries, having taken one of the four work organisation initiatives does not tend to have an important impact on the probability of a rise in the proportion of temporary contracts nor a rise in the use of subcontracting (Table 4.16). In Australia, the use of non-core workers tends to be higher where the practices are not

21. Some evidence on this score is provided by Osterman (1998). He finds that restructuring, as measured by layoffs, does not significantly affect the likelihood of adopting innovative practices nor of abandoning those already in place. However, those with flexible practices in place in 1992 were more likely to have layoffs in subsequent years.

present, whereas in the United States, the situation is the opposite. The evidence on the use of part-time workers, another aspect of numerical flexibility, is mixed as well. In the EPOC data, those workplaces taking initiatives in the area of work organisation were also more likely to have increased the proportion working part-time. For Australia and the United States, however, the bulk of the evidence suggests that workplaces with the practices have a higher proportion of full-timers.

Do establishments with flexible organisation practices in place have a better record in terms of job creation than their counterparts? Some have speculated that employers may introduce flexible practices at a time of worsening economic conditions and layoffs, partly as an effort to improve morale among the remaining workers. Such a relationship could make it more likely that workplaces taking initiatives have experienced employment declines in the recent past. Somewhat strangely, however, the establishments that recently took initiatives with regard to flattening the management structure and job rotation are more likely to have increased employment in the largest occupation, while for the other two initiatives, the opposite is true. For Australia, the differences in net employment growth rates are never statistically significant.

Finally, the data from individual countries can be used to shed some light on whether employment relationships are, indeed, more stable in workplaces where the flexible practices are in place. In Australia, as shown in Table 4.13, the dismissal rate is significantly lower at workplaces with autonomous work groups (1.7 per cent) than at those without (2.4 per cent), but this is not the case with the other practices. In three out of four cases, however, employees at workplaces with the practices in place feel more insecure about their jobs. In Sweden, the turnover rate, which includes all categories of workers joining and leaving a firm, is higher among establishments making use of job rotation and lower where teams are in use, relative to their counterparts without these practices. Though it is difficult to draw inferences about job stability from tabulations of average tenure, it is of interest to know that in the United States and to a lesser extent in Australia, average tenure tends to be greater at firms where the practices are in place.

Conclusions

This chapter has provided an assessment of the current state of evidence about the incidence of “flexible working practices” across countries. It has also attempted to uncover relationships between flexible working practices in firms and the wider labour market.

In response to most workplace surveys, managers tend to report quite high levels of initiatives in favour of flexible working. For example, in response to the 1996 EPOC survey, covering ten European countries, on average 27 per cent of managers reported initiatives in favour of the introduction or extension of team working in their workplaces in the previous three years, with virtually all countries in the range from 20 to 40 per cent (these figures refer to workplaces with 50 or more employees). Figures relating to already-existing schemes to encourage employment involvement are even higher. Overall, managers appear to be reporting a considerable degree of investment in flexible working practices. However, it must be acknowledged that there is almost no evidence on the rate at which flexible working practices are being abandoned, and little about the intensity of use of such practices.

The limited evidence pertaining to changes over time in the incidence of flexible working practices tends to indicate an increase. This applies to a number of employee involvement practices in Australia over the period 1990 to 1995, and to a wide range of flexible working practices in Fortune 1000 companies in the United States from 1987 to 1998 (in both cases, quality circles were an exception).

It appears that both the reported incidence of flexible working practices and the indications of change differ considerably from country to country. These national differences persist even where there are similarities between their national and workplace industrial relations systems. None of the usual ways of classifying countries, for example, according to their industrial relations systems, seem capable of explaining the patterns that are observed. There are some similarities between neighbouring countries, such as the Nordic countries and the southern European countries. However, they are matched by significant differences.

The differences by type of firm are much less clear-cut than the differences by country. Indeed, the currently available data show only a limited indication of patterns. Larger establishments are generally more likely than smaller ones to have adopted flexible practices, though the strength of this relationship seems to differ by country and by practice. Manufacturing workplaces tend to have above-average prevalence rates, but despite the strong association many of the practices have with this sector, it does not always appear to be the leading sector in this respect. Another finding is that, in general, the existence of various incentive compensation schemes, particularly profit-sharing and pay linked to skills, are positively correlated with the presence of (or initiatives towards) flexible practices. Initiatives to promote flexibility in working-

time practices tend to be associated with all of the flexible working practices discussed here.

Recent years have seen a good deal of interest in the interaction between the rate of introduction of flexible working practices and workplace industrial relations systems. For example, it has been argued that initiatives for teamworking might be less frequent in countries with well-established systems of works councils, for two reasons. First, they might not be perceived to be necessary, if co-operative working is indeed assured by the works councils. Second, they might not be as easy to introduce, to the extent that these same bodies have to give their approval.

The evidence available suggests that managers do indeed tend to report fewer initiatives on average for job rotation and team working in two countries, Germany and the Netherlands, where workplace industrial relations systems are particularly well-developed, and where employees have the right to works councils with co-determination powers. This is not the end of the story, however. As noted, overall, establishments with works council representation are more likely to have flattened management structures, enhanced the involvement of lower-level employees, and introduced or extended job rotation. The seeming contradiction is resolved by the fact that, within countries, those firms with works councils have a higher rate of taking initiatives than their counterparts. The chapter also presented evidence of a positive correlation between the presence of trade unions and both the flattening of management structures and the installation of teams. Here, the explanation seems to involve “between-country” effects. That is, countries such as Sweden that have higher rates of unionisation also have higher incidence rates for the initiatives under consideration.

Few strong relationships could be found between flexible working practices in firms and variables likely to be associated with conditions in the wider labour market. Admittedly, this result could well be a function of the weaknesses inherent in this type of data. In addition, in some cases, such as the relationship between numerical and functional flexibility, the absence of a consistent association may not be surprising, given that arguments can be adduced for both a positive and negative correlation. In light of the tendency noted in the literature for the innovative practices to raise productivity and profits, however, it is harder to explain the absence of solid evidence that they are associated with higher wages as well. There are numerous plausible explanations for this, including that many of the workplaces with innovative work organisation practices do not have adequate supporting human

resource practices, that the performance of more “flexible” firms hinges substantially on the technology in use and product market conditions, and that workers do not receive a large share of any gains that do accrue to the firm. It is not possible, however, to distinguish among the competing explanations with the data at hand.

The most robust relationship discovered was that workplaces with flexible practices tend to train more than those who do not have them. Regarding education level (where evidence is limited to a number of national surveys), in Australia and the United States, workplaces with flexible work organisation practices tend to have higher proportions of workers who have gone beyond secondary school. However, that does not seem to be the case for Sweden.

The evidence presented in this chapter provides little support for the oft-asserted proposition that greater recourse to flexible working practices will lead to a growing polarisation between “core” and “peripheral” workers. Consistent positive relationships were not found between the presence of flexible working practices and the numbers of workers on various types of “non-standard” work contracts, including part-time and temporary working.

It must be stressed that the available data do not permit any analysis of other aspects of the “polarisation” thesis. It has not, for example, been possible to study the effects of flexible working practices on the distribution of earnings within firms. Here, some commentators have suggested that the pay-for-performance schemes, which seem to be associated with the introduction of flexible working practices, are likely to lead to somewhat greater inequality. Again, there is no information here on the effects on career progression, or employment tenure, for different types of workers, particularly those who may be considered less able to work in the more demanding conditions which appear to be associated with some forms of flexible working.

Overall, despite the progress that has been made in developing survey instruments, it must be admitted that it is still very difficult to assess the degree to which there have been changes in work organisation, and harder still to evaluate their impact on the different types of firms and groups of workers. There are a number of ways of making progress: case studies to examine changes in work organisation practices in detail in a small number of firms; nationally representative surveys to provide linked employer-employee data, preferably with a longitudinal capability; and, in between these two extremes, studies of a range of firms within a particular industry. Experience gathered so far appears to highlight the importance of using all these instruments in a concerted way.

Annex 4.A

Sources and Definitions

The EPOC Survey

The Survey of Employee Direct Participation in Organisational Change is part of a major investigation by the European Foundation for the Improvement of Living and Working Conditions, an autonomous body of the European Union. Conducted during 1996, this was a postal survey of workplaces in Denmark, France, Germany, Ireland, Italy, the Netherlands, Portugal, Spain, Sweden and the United Kingdom. A standard questionnaire was used, translations being made from the English original. The respondent was the general manager of the workplace or the person he or she felt was most appropriate.

Throughout the survey, the time frame of reference is the three years up to 1996, so the initiatives taken in the area of work organisation, as well as the labour market outcomes discussed in the chapter, occurred in this period. As will be detailed below, many of the survey questions requested information about the largest occupational group, defined as the occupational category selected by the respondent as having the largest number of non-managerial employees at the workplace.

Survey sample

The sample was designed to be representative of workplaces with 20 or more employees for the smaller and medium-sized countries and 50 or more employees for the larger countries (France, Germany, Italy, Spain and the United Kingdom). Names and addresses of workplaces were selected at random from national business registers. Response rates ranged from 9 per cent for Spain to 38 per cent for Ireland, and averaged 21 per cent. While caution in interpreting the results is warranted given the high levels of non-response, it should be noted that these response rates are typical of those from mail surveys sent to enterprises by research institutes and are comparable to response rates for similar, strictly national surveys. Appropriate weights were assigned to each establishment on the basis of the probability of sampling and an adjustment for non-response. Sample distributions are given in Table 4.A.1.

Variable definitions**Dependent variables**

Many of the dependent variables in the logit analysis were derived from the survey's question 9, which asked "Which of the following initiatives have been taken by the management of this workplace in the last three years?" Possible responses included:

flattening of management structures; greater involvement of lower level employees; installing of team-based work organisation; and job rotation. In addition, the following other initiatives in the list were used as dependent variables describing outcomes for workers: working-time reduction; working-time flexibility; downsizing; and outsourcing. For all dependent variables derived from this question, the variable was coded as "1" if the initiative was checked and "0" if it was not.

Rise in proportion working part-time: 1 = if largest occupational group has been affected in last three years by increase in proportion of people working part-time; 0 = otherwise.

Rise in proportion of temporary contracts: 1 = if largest occupational group has been affected in last three years by increase in proportion of people working on temporary contracts; 0 = otherwise.

Rise in sub-contracting: 1 = if largest occupational group has been affected in last three years by increase in subcontracting of their activities; 0 = otherwise.

Change in employment: Respondents were asked how the number of employees in the largest occupational group compares with the situation three years earlier: 2 = "there has been an increase"; 1 = "about the same"; 0 = "there has been a reduction".

Structural variables

Private: 1 = workplace is a private company; 0 = state or semi-state-owned company/institution.

For profit: 1 = profit sector; 0 = non-profit sector.

Collective agreement: 1 = workplace is bound by a collective labour agreement; 0 = no collective labour agreement.

Foreign competition: 1 = competition for goods and/or services described as facing "domestic competition with little foreign competition" or "both domestic and foreign competition"; 0 = "no competition" or "only domestic competition".

Works council: 1 = representatives of the employees in the largest occupational group elected to a work council are recognised for the purposes of consultation/negotiation and or joint decision making at the workplace; 0 = otherwise.

Size: Four dummy variables are used to represent establishments divided into five size classes: 49 or fewer employees; 50 to 99 employees; 100 to 499 employees; 500 to 999 employees; and 1 000+ employees.

Table 4.A.1. **EPOC survey 1996: gross, actual and weighted samples by country, ranked by weighted share**

	Percentages		
	Gross	Actual	Weighted
Germany	15	14	27
United Kingdom	15	14	19
France	15	10	16
Italy	12	9	15
Spain	15	8	9
Netherlands	7	9	5
Portugal	3	5	3
Sweden	7	13	3
Denmark	8	12	2
Ireland	3	7	1
Total	100	100	100
Sample size	33 427	5 786	5 786

Source: EPOC survey.

Table 4.A.2. **Economic sectors used in the analysis**

Sector	EPOC survey: sector in which workplace is most active
Mining and quarrying; manufacturing	Mining Manufacturing industry Process industry
Transport, storage and communication; electricity, gas and water	Transport, warehousing and communications Public utilities
Finance, insurance, real estate and business services	Banking/insurances Professional services
Community, social and personal services	Public administration Education (Public) health and social welfare Culture and recreation/leisure
Wholesale and retail trade, restaurants and hotels	Wholesale Retail trade Catering, hotels
Construction	Construction and installation

Source: EPOC survey.

Industry: Five dummy variables are used to represent the six industry groupings described below.

Country: Nine dummy variables are used to represent the 10 countries.

Characteristics of work

Production workers: 1 = largest number of non-managerial employees are “production; operational”; 0 = otherwise.

For the other characteristics of work, respondents were asked to answer on a scale from 1 to 5, where 1 means total agreement with a statement given and 5 indicates total agreement with the statement’s opposite.

Range of tasks: 1 = answered with 1 or 2 to “work involves range of different tasks”; 0 = otherwise;

Technology independent: 1 = answered with 1 or 2 to “pace of work is independent of technology”; 0 = otherwise.

Team activity: 1 = answered with 1 or 2 to “work is essentially a team activity”; 0 = otherwise.

Low qualifications: 1 = answered with 4 or 5 to “a high level of qualification is required”; 0 = otherwise.

Recruits need training: 1 = answered with 1 or 2 to “recruits have to be trained to do the job”; 0 = otherwise.

Compensation variables

All questions refer to largest occupational group.

Pay for skill: 1 = “components reflecting skill/qualifications” are part of wages; 0 = otherwise.

Attitude bonus: 1 = “bonuses related to individual attitude” are part of wages; 0 = otherwise.

Individual volume bonus: 1 = “bonuses for individual volume of output” are part of wages; 0 = otherwise.

Team volume bonus: 1 = “bonuses for team volume of output” are part of wages; 0 = otherwise.

Profit-sharing: 1 = employees of largest occupational group are eligible for profit-sharing schemes; 0 = otherwise.

Share-ownership: 1 = employees of largest occupational group are eligible for share-ownership schemes; 0 = otherwise.

Economic sectors used in the analysis

Sectors used in the EPOC Survey have been grouped as shown in Table 4.A.2 in order to yield industry groupings large enough to obtain sufficiently precise estimates of variables representing these sectors in the regression analysis.

The EPOC sector manufacturing industry accounts for 30 per cent of the weighted sample, while the predominant occupation group is production/operational (40 per cent of the total sample).

Data constraints imposed by the questionnaire

Responses regarding the variables derived from question 9 were affected by the following:

Italy: 3 years to 1996 was translated as 3 months to 1996.

Spain: both “flattening of management structures” and “downsizing” were translated incorrectly.

Sweden: “outsourcing” was omitted from the list of choices.

In addition, the format of the questionnaire made it impossible to distinguish between cases where there was non-response and those where management did not take any of the initiatives. Eight per cent of the questionnaires fell into this category.

Question 18 asked, among other things, whether there had been an increase in sub-contracting. Again, the format of the question does not enable distinction between those who were not affected by any of the changes mentioned and those who did not answer the question. Approximately one-third of respondents left all boxes blank for this question.

Question 21 addresses employee representation by a trade union, works council or advisory committee established by management. In the French questionnaire, the box for works council option was omitted but, nevertheless, about one quarter of respondents indicated that there was employee representation by a works council.

In addition, for many of the questions, the level of unambiguous non-response is not insignificant, leading to a substantial reduction in the sample size available for the regressions. Details on how these data constraints were taken into account are provided below.

Estimation of models

All estimations use weighted data. To take into account the problems with question 9 noted above, Spain was excluded when flattening of management structure and downsizing were dependent variables and Sweden when outsourcing was the dependent variable. Italy was included in all regressions, however, under the assumption that the impact of the difference in time frame will be absorbed into its dummy variable. As noted above, for some questions it is impossible to distinguish between cases where the respondent did not check any boxes because he/she skipped the question and cases where no boxes were checked because none of the choices applied. The results reported in this chapter assume that, in such cases, no choice applied. Extensive testing was done, however, to see if the results are sensitive to this decision. In general, they were not, as coefficients almost always had the same sign under alternative treatment, and effects that were statistically significant tended not to become insignificant and vice versa. There are a handful of cases where previously significant coefficients do become insignificant, partly owing to the reduction in sample size that results from treating the ambiguous cases as non-responses. In addition to the assessment of the impact alternative treatments of individual question non-response have on the estimates, extensive testing was also done to determine if the results are sensitive to changes in regression specification.

The dichotomous logit results presented in Tables 4.8, 4.10, 4.11 and 4.16 are coefficients, b_1 to b_k , from an estimated model of the form

Probability

$$(y_i = 1) = F(a + b_1x_{1i} + b_2x_{2i} + \dots + b_kx_{ki}) \text{ or}$$

$$P_i = F(Z_i)$$

where F is the logistic function.

For example, in Table 4.8 the first column presents coefficients from an estimation of the probability that a workplace had taken an initiative to flatten its management structures, using the structural characteristics as explanatory variables.

The probabilities in Table 4.9 and Charts 4.1 to 4.3 were calculated using the appropriate estimated model. For example, the coefficients in Table 4.8 were used to calculate the probabilities in Chart 4.1. For the benchmark probability, it is assumed that there is no binding collective labour agreement, no works council representation and no foreign competition, so these variables are set to zero. All other variables are set to the corresponding mean calculated by averaging over the sample used in the regression. P_i is then calculated using the formula above. To show the impact of the variable indicating the presence of a collective labour agreement, the same procedure is used except that its variable is set to 1, while leaving set to zero the variables relating to works councils and foreign competition. Analogous calculations are then made to estimate the impact of the variables for works council representation and foreign competition.

Australia – 1995 Australian Workplace Industrial Relations Survey (AWIRS95)

The 1995 Australian Workplace Industrial Relations Survey (AWIRS95) was conducted between August 1995 and January 1996 for the Department of Employment, Workplace Relations and Small Business (previously the Department of Industrial Relations). The components of AWIRS95 used here are designed to be representative of workplaces with 20 or more employees in all States and Territories of Australia, excluding those in agriculture, forestry and fishing, and defence. In addition to surveying employers, an employee questionnaire was distributed to a random sample of employees at those workplaces in the employer sample where the senior manager agreed that employees could participate. The workplace survey had a response rate of 80 per cent, while that for the employees was 64 per cent. For the existence of workplace practices, answers were taken from two questions about practices currently in place at the workplace. Calculations using AWIRS95 were provided by Bill Harley, Department of Management, University of Melbourne.

Definitions of variables in Table 4.13 derived from employer responses

Full-time average workplace weekly earnings: for each of eight occupational groups, managers were asked to assign a range (usually of A\$50) for the earnings of “most” full-time employees. The midpoint of the range was then assigned for

each group and multiplied by the number of employees in that group. These amounts were then summed over the groups and divided by the number of full-time employees.

Voluntary labour turnover (%): voluntary resignations divided by number of permanent employees.

Absenteeism (%): the share of all employees who are away from work or on sick leave without leave having been approved in advance.

Formal training provided (%): proportion who answered “yes” to the question whether or not the organisation provided in the last year “any formal program of instruction for employees designed to develop their skills”.

Net employment growth (%): growth in employment in the year through the pay period ending on or before 18 August 1995.

Part-time (%): the number of part-time employees as a share of the establishment’s total workforce.

Non-core (%): the sum of non-core workers (casual employees, agency workers, home or outworkers and contractors and their employees) as a share of the total workforce at the workplace.

Dismissals (%): the number of dismissals in the 12 months preceding the survey as a share of the total number of employees.

Definitions of variables in Table 4.13 derived from employee responses

Post-secondary education (%): share whose highest level of education is beyond “completed secondary”.

Received job training in the last 12 months (%): portion of those who said that employer provided “training to help do [...] job” in last 12 months.

Job tenure: length of time at the workplace.

Part-time: those whose usual hours fell below 35 hours a week were considered to be part-time employees.

The responses to a number of subjective questions were also used. With the exception of the job satisfaction question, employees could respond to these questions by disagreeing, by neither disagreeing nor agreeing, or by agreeing with a particular statement. In calculating the average scores shown in Table 4.13, these three responses were coded as 0, 1 and 2, respectively. In each case, if all respondents agreed with a statement, the average score would be 2. A similar scale, indicated below, was used for the job satisfaction question.

Job is satisfying: respondents were asked “Are you satisfied with the following aspects of your job?” Responses to the aspect “Your job overall” were coded as 0 (dissatisfied), 1 (neither satisfied nor dissatisfied) or 2 (satisfied).

Lot of effort required: “I put a lot of effort into my job”.

Job is stressful: “My job is very stressful”.

Do different tasks: “I do lots of different tasks in my job”.

Feel insecure about job: “I feel insecure about my future here”.

See Morehead *et al.* (1997) for additional details.

Denmark – The DISKO project

In Denmark, a survey of flexibility was performed within the DISKO project in 1996. DISKO is an acronym for “The Danish Innovation System in a Comparative Perspective”. The purpose of the project was to study the Danish innovation systems and identify salient future challenges. The survey covered private business firms with 20 or more employees within the goods production sector and with 10 or more employees within the service sector. A questionnaire was administered by mail in May 1996, covering the period 1993-1995. Nineteen hundred firms responded to it, representing a response rate of 52 per cent for goods production and 45 per cent for services. Full details are to be found in *Den fleksible virksomhed, Omstillingspres og fornyelse i dansk erhvervsliv*, DISKO-Projektet: Rapport nr. 1, Erhvervsudviklingsrådet, September 1997 and Gjerding (1998).

Finland

The Finnish survey was carried out for the Ministry of Labour in co-operation with the University of Helsinki. Both a mail and telephone questionnaire were used. The mail questionnaire was sent out in November 1996 to private sector workplaces with 10 or more employees. Responses were obtained from 830 workplaces, representing a response rate of 63 per cent. The telephone survey received responses from 1 384 workplaces, a response rate of 83 per cent. The telephone interviews were carried out during November and December 1996 and the complementary mail survey followed during the period January to March 1997. In both cases, the information obtained referred mainly to the end of 1996 and the first months of 1997. Details are to be found in Juha and Pekka (1999a and 1999b).

Norway

The recent Norwegian study on flexible work organisations was carried out under the responsibility of the Ministry of Labour and Government Administration and the Institute for Social Research. It was carried out by telephone interviewing during February and March 1997, with the questions mainly covering 1996. The scope was private and public workplaces with 10 or more employees. Two thousand one hundred and thirty establishments participated out of the gross sample of 2 800, representing a response rate of 76 per cent. The full details are to be found in *Fleksibilitet i norsk arbeidsliv*, edited by Karen Modesta Olsen and Hege Torp, Institutt for Samfunnsforskning, February 1998.

Sweden – The NUTEK Survey

The NUTEK (Swedish National Board for Industrial and Technical Development) survey used in this chapter is described in full in NUTEK (1996). It was carried out within the framework of the OECD study, “Technological and Organisational Change and Labour Demand: Flexible Enterprises – Human Resource Implications”. The survey was based on a questionnaire mailed to a sample of private-sector workplaces

with at least 50 employees. The sample covered the following industries: mining and manufacturing; construction; retail, wholesale, hotels and restaurants; transport and communication; and other business activities including financial and real estate. The total number of workplaces registered with Statistics Sweden and meeting these criteria was 6 038. A stratified sample of 2 064 workplaces was taken, and 707 usable questionnaires were returned. There was a slight bias in response towards the manufacturing sector at the expense of the others (especially within the less densely populated regions). The possible bias resulting from this was assessed by means of follow-up telephone surveys and it was concluded that the effects might be to slightly underestimate both labour productivity and the extent of flexible work organisation. NUTEK’s Department of Industrial Policy Analyses performed the NUTEK calculations used in this chapter.

While the indicator used in this chapter for whether job rotation exists refers to all employees, that for teams is for workers involved in what is termed “direct production”. “Direct production” is defined in manufacturing as the employees who produce, in construction as those who do the construction work, in trade as the personnel who are involved in sales and stock-keeping work, in transportation as those who are working with direct transportation, loading and unloading and customer contacts, and in the financial sector as the personnel working with financial services and customer services.

The NUTEK survey has been co-ordinated with three other surveys in the Nordflex project. These surveys cover Denmark, Finland and Norway, as described above.

United States – Survey of Employer-Provided Training, 1995 (SEPT95)

The 1995 Survey of Employer-Provided Training (SEPT95) was conducted by the US Bureau of Labor Statistics (BLS) for the Employment and Training Administration (ETA) of the US Department of Labor in order to provide representative data on the training practices of employers. The sample was designed to be representative of the universe of private non-agricultural establishments with fifty or more employees. In addition to collecting data from establishments, two randomly-chosen employees in the responding establishments were selected for interviews as well. SEPT95 consists of four survey instruments – a questionnaire and a training log for both the employer and employees.

The employer questionnaire asked about an establishment’s work practices, enabling workplaces to be classified on the basis on whether they use job rotation, total quality management, self-directed work teams, etc. Information was also collected on whether formal training was provided in the last 12 months, the number of employees in the establishment, the number of employees considered to be part-time workers, and the number of contract workers or workers employed by temporary help agencies. In addition, in order to calculate an average monthly establishment wage, information was obtained from the BLS Universal Data Base (UDB) on the total payroll of each establishment for the

fourth quarter of 1993 and the sum of employment over each month of the quarter. Usable employer questionnaires were obtained from 1 062 of the respondents, implying a response rate of 74 per cent. Weights are used in all calculations.

For the employee questionnaire, the analysis here relies on questions about whether formal training was received in the

last 12 months, usual hours worked, tenure with current employer, highest level of education completed and gross earnings. Those whose usual hours fell below 35 hours a week were considered to be part-time employees. 1 074 usable employee questionnaires were collected, representing a response rate of 51 per cent. Weights are used in all calculations. [See Frazis *et al.* (1998) for additional details.]

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