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MANAGEMENT PRACTICES AND UNEMPLOYMENT

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THE OECD JOBS STUDY: WORKING PAPER SERIES

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SUMMARY

Enterprise management involves finding solutions for many problems in which information is incomplete and for which co-operative relationships with employees are needed if the firm's objectives are to be realised. To this end, management may develop practices one of whose side-effects is to aggravate unemployment.

This paper focuses on four broad themes: the first concerns the management contribution to some of the labour market rigidities highlighted in recent reviews of the literature on unemployment; the second concerns how management practices may affect access to jobs for certain categories of workers, and hence their ability to leave unemployment; the third concerns the potential impact of some of the new management practices currently transforming firms in some major sectors of employment. Since many of these practices are to be found in varying degrees in all countries, the fourth section takes a comparative look at the experience of some different countries to ask whether their incidence helps to explain some of the more notable inter-country differences in unemployment behaviour. Finally, it addresses some areas of policy.

PRATIQUE DE GESTION ET CHÔMAGE

RÉSUMÉ

La gestion d'une entreprise implique la recherche de solutions à de nombreux problèmes au sujet desquels l'information est incomplète et qui exigent la coopération des salariés afin que l'entreprise puisse atteindre ses objectifs. A cette fin, l'entreprise peut recourir à des pratiques dont l'un des effets secondaires est d'aggraver le chômage.

Le présent document traite de quatre grands thèmes : la contribution des pratiques de gestion à certaines des rigidités du marché du travail mises en lumière dans de récentes critiques d'ouvrages consacrés au chômage ; la façon dont les pratiques de gestion peuvent compromettre l'accès à l'emploi de certaines catégories de travailleurs, et donc nuire à leur capacité de sortir du chômage ; les répercussions que peuvent avoir certaines des nouvelles pratiques de gestion qui transforment aujourd'hui les entreprises dans plusieurs grands secteurs de l'emploi. Nombre de ces méthodes étant pratiquées à plus ou moins grande échelle dans tous les pays, la quatrième section de ce document compare l'expérience de divers pays afin de déterminer si la fréquence de ces pratiques contribue à expliquer certaines des disparités les plus visibles entre pays dans le comportement du chômage. Enfin, l'auteur aborde certaines questions de fond.

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1. Introduction

Much of the debate about the impact of labour market institutions on unemployment has focused on unions and collective bargaining. After a decade or more of declining union membership and of receding coverage of collective agreements across most OECD countries, and during which unemployment has risen considerably, it is important to examine firms' employee management practices, and to trace their impact. This may highlight new policy areas where governments, in collaboration with firms, can seek to reduce the current high levels of unemployment, and to alter its structure.

Research on the extent of management practices within different OECD economies is very limited even compared with that on union practices. Case studies provide only limited clues as to possible generalisation, often giving only an impressionistic view of the critical economic variables, whereas large scale surveys provide only fragmentary indicators whose interpretation is often controversial. Nevertheless, faced with the limited success of macroeconomic policies, and of policies designed to remove a number of labour market 'rigidities' to restore full employment, it is worthwhile looking at the possible contribution of firms' employee management policies.

It may seem odd in a competitive economy that the management practices of firms could contribute to unemployment. If prices and wages are flexible, and firms are maximising profits, then they should normally hire as much labour as workers wish to supply at the prevailing wage rates. If some firms discriminate against certain categories of workers, for example, by not hiring older workers, then other firms can make higher profits by taking them on. If some firms have very bureaucratic pay systems which offer the same rate to all workers whatever their experience, so making it uneconomic to take on young workers, then other firms can make higher profits by offering experience-rated pay scales and hiring young workers. Thus, it is hard to see why employment practices freely adopted by firms, and which detract from their performance, should persist in a competitive economy. Since other firms can benefit by adopting the opposite policies, it is also hard to see why such practices should contribute to unemployment.

Part of the difficulty may arise from a tendency to treat the firm as a 'black box' and to ignore the very real problems of enterprise management. In the competitive long run in which information is freely available this may be legitimate. However, enterprise management involves many problems in which information is incomplete, incorporated in workers' practical skills, or is used in small group bargaining relations.² Under such circumstances, management may work more by established conventions and 'rule of thumb', applying standard solutions to recurring problems. Even in the absence of unions and legal rules, management may establish a more co-operative relationship with employees if it works by predictable, customary rules rather than changing continuously in response to external circumstances. Indeed, it might be helpful to think of the firm not as combining different factors of production, but rather as establishing a framework within which co-operation may take place. The first priority of employee management is to achieve successful co-operation without which sales plans cannot be realised. To this end, management may develop practices one of whose side-effects is to aggravate unemployment.

This paper focuses on four broad themes: the first concerns the management contribution to some of the 'labour market rigidities' highlighted in recent reviews of the literature on unemployment [eg. Nickell (1990)]; the second concerns how management practices may affect access to jobs for certain categories of workers, and hence their ability to leave unemployment; the third concerns the potential impact of some of the new management practices currently transforming firms in some major sectors of employment. Since many of these practices are to be found in varying degrees in all countries, the fourth section takes a comparative look at the experience of some different countries to ask whether their incidence helps to explain some of the more notable inter-country differences in unemployment behaviour. Finally, it addresses some areas of policy.

Management policies are likely to have their greatest direct effect upon movements into and out of employment as a result of their hiring and lay-off decisions. Hiring policies relate obviously to hiring

decisions, but they are also affected by firms' remuneration policies, and by the internal management of their human resources. Thus, a number of policy areas emerge which may be relevant to the unemployment problem in various ways:

Rigid pay systems

- a) management's remuneration policies may be geared to ensuring the motivation of current employees rather than responding to external labour market pressures;
- b) remuneration policies may also be inconsistent with employment openings for certain workers (eg. bureaucratic pay scales with rates of pay tied to individual jobs may militate against young persons' employment);
- c) remuneration policies may reflect cultural norms in different countries which may be adverse to flexibility;

Rigid patterns of working time

- d) the way production is organised may make it easier to lay workers off rather than vary hours of work;
- e) rapid lay-off policies in a down-turn may increase the probability of a person's entry into long-term unemployment, especially for those above a certain age;

Greater stress on internal labour markets

- f) management's policies to make skills more firm-specific increase the difficulty of finding a new job once someone becomes unemployed;
- g) employment guarantees given by firms may make access to certain types of long-term jobs very difficult for certain categories (eg. young workers in a recession);
- h) hiring policies may be geared to the employment of particular kinds of workers, and these may differ from those with conventional vocational skills;
- i) some employment policies may boost the informal bargaining power of 'insiders' at the expense of 'outsiders' whether or not the former are unionised;

Discriminatory hiring policies

- j) discriminatory perceptions and hiring (eg. older workers and women);

Influence of new management philosophies

- k) the constant search for productivity improvements may involve continuous reductions of employment (eg. under the pursuit of 'lean production' in order to remain competitive);

Internal organisational barriers to flexibility

- l) management principles governing the internal structure of firms could militate against adjustment.

These factors are likely to contribute to, rather than actually cause, unemployment. No systematic attempt is made to explain why new firms should not develop using different practices and mop up the unemployed. However, by looking at management practices, it becomes clear that enterprise management is a complex skill that has to be learned. Some of the more abstract of these skills can be taught in business schools, but a great deal is learned on the job and the knowledge is contained in work teams, each member of which knows how to work with the others. One has to bring together the right mix of skills and build a suitable team of employees. Adopting new employment practices usually involves developing a new set

of organisational skills: the difficulties in adopting 'lean production' and 'TQM' discussed later are a good illustration. New practices can of course emerge, but it takes time, whereas responding to a new commercial opportunity has to be done quickly. Thus, although the influx of new firms or firms with different practices more geared to absorbing unemployment is an important theoretical possibility, there are a number of important practical difficulties. It is therefore worth taking seriously the potential impact of current management practices on unemployment.

In addition, recent aggregate studies of unemployment in OECD countries have shown a great diversity among countries [eg. Layard, Nickell and Layard (1991), Blanchard and Summers (1986), Alogoskoufis and Manning (1988), and Calmfors and Driffil (1988)]. These have generally highlighted the need to look at the workings of labour markets in different countries, and notably at their institutional structures. Hence the importance of a comparative perspective also on the management side.

2. Management practices and wage rigidity

Much of the discussion of downward nominal wage rigidity has tended to focus on the impact of collective bargaining. However, the prevalence of such practices is much wider. In his famous study of personnel policies in large non-union firms in the United States, Foulkes (1980) showed that such firms practised a wide range of remuneration policies which would also be conducive to downward wage rigidity. Being large firms at a time of union decline, it is unlikely that their policies were simply a 'spill over' from the unionised sector. Indeed, the widespread insensitivity of wages to labour market fluctuations both geographically and historically forces us to look seriously at the employer interest in such policies.

There is also a long-running strand in empirical research on wage differentials which stresses the importance of managerial policy and within-firm notions of equity as sources of wage rigidity in the face of labour market changes. In the US in the 1940s and 1950s, for example, Slichter (1950) argued that the importance of internal management policies on wage differentials explained the tendency for unskilled hourly wages to be higher in firms where skilled hourly wages were high, wage bills were low in relation to income, and profits per dollar of sales were high. Reynolds (1951) stressed the difficulty for firms to lower their wage position in a local labour market because of likely loss of morale among existing employees. More recently, in the UK, Nolan and Brown (1983) similarly observed the dominance of firm-specific influences on wage increases over external labour market pressures, which they attributed in part of the spread of job evaluation and work study techniques, both of which stress firm-specific as opposed to labour market considerations. Of particular relevance for the current debate about industry bargaining and unemployment, Nolan and Brown attributed part of the increased scope for management policies to the decline of industry bargaining. The firms in their sample were not using it as an opportunity to become more responsive to local labour market pressures, but rather to focus on internal management problems. Daubigney et al. (1971) similarly observed a significant influence of management policy on firms' wage positions in their local labour markets in France. Indeed, much of the recent empirical work on 'efficiency wages' and non-compensating wage differentials [eg. Lang and Leonard (1987)] could be interpreted as indicating the importance of management policy in the setting of within-firm pay levels and pay structures as distinct from external labour market pressures.

Four main types of theoretical argument concerning enterprise remuneration policies deserve consideration: the first is that most employees want stable wages; the second relates to the difficulties of agreeing viable systems of variable pay under conditions of low trust; the third concerns organisational and administrative problems facing firms; and the fourth, the balance between internal and external pressures on firms' remuneration policies.

a) Contract theories

The reason firms might offer fixed rates of pay rather than ones that vary with business conditions

has been addressed in the contract theories of 'implicit contracts' and 'efficiency wages'. According to the 'implicit contract' theories of pay rigidity, employers even out fluctuations in the demand for, and the market value of, employees' output by paying a constant wage rate. Stiglitz (1984) presented the firm as offering a dual contract: an employment contract in which the wage varied with the employee's marginal value product, and an insurance contract. In good times, employees' output was worth more than their wage, and the firm took the difference as an insurance premium. Conversely, in bad times, the firm paid out. Employees valued such contracts because the bulk of their assets were concentrated in their human capital (their skills) and so they could not spread their risks to the same degree as could firms. The theory sheds some light on why firms might offer fix-wage contracts in order to attract workers, but as a more general theory of unemployment, it has not been successful in explaining why workers should prefer stable wages rather than stable employment [eg. Nickell (1990)]. Moreover, there is no evidence of any such explicit clauses in employment contracts and collective agreements whereas many similar issues, such as profit sharing, are the subject of extensive joint regulation.

Efficiency wage models offer another reason why firms might offer stable wages, again with the implication that wages will not fall to market-clearing levels. At their simplest, firms offer pay rates above the competitive market rate in order to have an additional sanction against poor performance. In a world of costlessly transferable skills, dismissed workers could simply find another job at the same rate of pay in another firm. However, if the firm offers above this rate, then dismissal involves loss of the higher level of pay. Firms might wish to offer such pay levels for jobs where the exercise of employee discretion leads to higher job performance, and therefore where management find it difficult to monitor the quality of work directly. An alternative view, advanced by Akerlof (1982), is that the higher rate of pay induces a feeling of reciprocity among its recipients so that they work with greater care and assiduity: hence the analogy with 'gift exchange'. Thus firms might adopt such remuneration policies either to strengthen discipline or to induce commitment. Either way, ceasing to become a 'high wage employer' as a result of loss of markets, or local unemployment, could be difficult. Under the first hypothesis, the disciplinary sanction is lost, and under the second, reciprocity may be undermined, and in both cases, there could be a loss of performance among the workforce. One might argue that so long as the relative wage differential were maintained, then the firm would be alright. The problem is that employers are generally better informed than workers about the state of both product and labour markets so the employer's claims would have to be taken on trust. Under the disciplinary argument, clearly there is little trust involved so it would be all the harder to convince workers of the need for pay flexibility. Under the second, that of reciprocity, there may be more ground for trust, and hence stronger grounds for expecting nominal flexibility, but it may still be difficult for the employers to convince their employees of their good faith.

In the scenarios of more complex theories of pay and incentives, such as that of Lazear (1981) for rising earnings profiles it may be more difficult still to obtain pay flexibility. In Lazear's model, firms offer a pay profile rising with age or length of service starting below the value of the employee's output, and finishing above it at the end of the person's career. Employees with such pay systems invest a considerable stake in the organisation in the form of their low remuneration in early years which they then stand to lose if they are subsequently dismissed for poor performance. As large organisations will have many such profiles for different categories of employees, it is evident that managing pay flexibility by category would become very problematic.

b) Wage fixity and low trust

Both the implicit contract and efficiency wage theories of wage fixity shed an important light on the underlying difficulty of achieving variable pay systems in a low trust environment, which is what contract theory generally assumes. If workers do not wholly trust their employers' reports of business conditions, and the resulting fluctuations in the value of their output, then it is hard to imagine that a system of pay linked to output value would prove acceptable: hence the interest in rate for the job rules discussed in the industrial relations paper (§2.1). Under such conditions, because cutting jobs means cutting output and thus profits, it also hurts the employer so the incentive to provide false information is less. In

contrast, merely announcing that business is bad and proposing a wage cut costs nothing, and the incentive for the employer to be over-pessimistic is far greater. Thus, in a low trust environment, employees are likely to insist upon a fixed rate of pay tied to units of work that are easily observed.

c) Organisational reasons for fixity

Organisational and administrative reasons for paying fixed wages also hinge on problems of information and trust. In making pay vary according to performance, firms are not just concerned with external market issues, but also with the measurement of their employees' performance. The empirical literature on performance appraisal and merit or performance related pay highlights the extreme difficulty of measuring employee performance in many work environments [e.g. Milkovitch and Wigdor (1991)]. Because measurement which is perceived by employees as being unfair or inaccurate can damage work motivation, firms have a strong incentive to limit the weight they attach to performance pay systems [Bishop (1987)]. In practice, therefore, it is very common for performance payments to be allocated on conventional lines such as inflation, length of service, or by rota, and for ratings to be only slightly differentiated. Foulkes (1980) argued that such problems were a common reason for merit pay in his sample of large non-union companies not functioning in the way it was intended to.

Other administrative problems concern such questions as the complications of managing pay systems which are highly differentiated among employees and which might engender a great deal of individual bargaining, or appeals against employer decisions. These would involve a great deal of management time.

d) Conflicting objectives

Pay systems have to achieve a wide variety of tasks for firms, and it is inevitable that these should periodically conflict. Solow (1980) argued that this was one cause of 'wage stickiness'. In particular, pay policies designed to 'recruit and retain' may conflict with those required to motivate.

A number of the empirical studies of internal labour markets [eg. Mackay et al. (1969), Robinson ed. (1970), Marsden (1982)] have highlighted the importance of internal pay relativities within the enterprise for regulating flows of labour, and that recruitment into internal labour markets generally takes place through a limited number of ports of entry. The latter provide the main points of contact with competing pay rates on local labour markets, beyond which internal relativities become more influential. Thus employers come to give greater weight to the internal pressures on their wage structures than to external pressures. This will generate a considerable degree of inertia vis-à-vis local labour market pressures.

Many of the above arguments relate to policies which would be adopted by some firms, and for some groups of workers only. Efficiency wages and the pay profiles discussed by Lazear are generally attributed to the costs of monitoring the quality of work. There is no reason why they should apply to jobs where output is easily measured, or where there is close supervision, for example. It will be argued later that new management methods are reducing the importance of such routine jobs and thereby increasing the need for employee discretion. But this situation is still far from being universal.

There is no reason to believe that wage policies are uniform across all types of employment. Quite the contrary. Their impact on the overall level of unemployment would depend upon the behaviour of other firms.

We have then a number of reasons why firms should adopt pay systems which are insensitive to labour market conditions, and thus why they eschew dropping pay to 'market clearing' levels, even in the absence of unions and collective bargaining. There are some additional reasons relating to beliefs which, it appears, are deeply embedded in our societies.

3. Social norms of fairness and managerial policies

It was suggested earlier that one reason why firms insulated their employees' wages from labour market fluctuations was that the latter lacked the range of assets over which they could spread the risks involved. This is an interesting but rather narrow view. Wider social norms may also militate against firms offering market sensitive pay [eg. Solow (1990)].

In a recent study of fairness in economic transactions in the United States, Kahnemann et al. (1986) found that the great majority of ordinary people were resistant to the idea that providers of services should raise their prices in response to an increase in demand. Equally, they rejected as unfair the idea that an employer should be able to cut the pay of incumbent workers simply because of an increase in available labour. In contrast, changing prices to pass on higher costs was accepted, as was taking on new hires at a new, lower, market rate. Because of the small sample, one can only take such work as suggestive, but it would seem that pay flexibility in response to labour market conditions is not widely accepted among ordinary people. Work in progress by Bewley and Brainard (1993), which reaches similar conclusions, may take this further.

These studies point in the same direction as earlier work in the United Kingdom by Behrend (1964 and 1966) on 'price images' acquired by both consumers and workers which were often learned earlier in life, and subsequently served as criteria for judging the acceptability of actual prices. Such images clearly impart a degree of inertia in people's perceptions of fair or reasonable prices.

Several writers have commented that firms may fear that downward wage flexibility could damage employee morale [eg. Reynolds (1951)]. Equally, use of incentive payments in order to respond to labour market pressures may often be resented by employees. A recent study of the impact of performance related pay on motivation in the British tax service revealed that a large majority of the staff thought it unfair to use performance pay awards in order to retain staff whose skills were in short supply but who gave only average performance [Marsden and Richardson (1994)]. In another example, in 1990, Dupont had to cancel the profit sharing programme in its fibres unit because of discontent among its employees when it appeared that they would lose up to 4% of their basic salary as a result of a drop in sales [Cascio (1992): 445].³

These examples illustrate the absence of any widespread acceptance among employees that their pay should vary according to labour market conditions or the prosperity of their employer. Hence, to some extent at least, it would seem that employers are reacting to employee preferences for stable pay in the face of economic fluctuations. Such forces add to the elements of price and wage stickiness which Nickell (1990) identified as contributing to unemployment.

4. Management practices and working time arrangements

A potentially attractive alternative to adapting labour costs by means of varying wage rates or by lay-off which has attracted much discussion has been that of variable working time arrangements. Overtime working is a long-established, and widely accepted, means for increasing the supply of labour to firms to deal with short-run increases in demand. Indeed, many surveys of employers' reactions to labour shortages indicate that they consider variations in working time are easier to implement than changes in wage rates, which are usually well down their list of priorities [eg. Hunter (1978)].

There are additional theoretical reasons for believing that short-term working time changes should be easier to implement than changes in pay. Several of the arguments for wage inflexibility have different effects in the case of working time. For example, the problems arising from asymmetric information stressed by such writers as Stiglitz are less severe in the case of working time. Whereas cutting pay may actually enhance profits, so that an employer's pessimism is rewarded, in the case of cutting working hours, output also has to be cut. As employers have many overheads, there is less incentive to cut hours more than

necessary. In addition, cutting hours has the appearance of sharing hardship, which would accord well with the norms of reciprocity cited by Akerlof, and those of fairness highlighted by Kahnemann et al.

Another factor favouring hours flexibility is that it can help to maintain the integrity of the effort-bargain. One of the big problems facing management as business conditions fluctuate is that efficiency and effort levels tend to decline when the firm's demand for work declines. If hours remain constant, then workers have to work at a lower intensity. The difficulty then is to raise standards again when output increases. Varying hours may make it easier to maintain a constant standard of working.⁴

There are, however, a number reasons which are likely to limit the use of hours variability. First, overtime hours may be less productive than normal hours. Whilst it has been argued that the premium rates paid for overtime hours reflect their higher pay rates [eg. Feldstein (1967) for the UK], however, other estimates, also for the UK, taking more account of conditions in individual industries, set the productivity of overtime hours at about 60% of that of normal hours [Leslie and Wise (1980)]. The latter estimates seem more plausible in view of the greater likelihood of fatigue, and that people might 'spin out' work in order to make overtime necessary. Also in the UK, there has been a common practice of using overtime hours to raise the earnings of certain categories without raising their basic rates of pay [NBPI (1970)], often because to do so would require wider alteration of pay systems or pay agreements.

Administrative cost may also limit variability of hours, particularly in large, integrated plants and organisations. There are also other costs to employers, frequently noted during periods of short-time working. Namely, workers who can get full week working elsewhere may decide to leave so that the firm is slowly depleted of those with the most marketable skills. From the firm's point of view, if skilled workers have greater seniority, then LIFO systems with full week working protect them from this kind of loss.

Thus the probable declining marginal productivity of overtime hours and difficulties of labour retention may limit recourse to hours flexibility, despite their greater feasibility than pay flexibility. These factors may however become less important if there is a gradual drift towards internal labour market type arrangements, at least for key workers (see below), and away from professional or occupational markets, and as shorter working time generally reduces the likelihood of fatigue diminishing the productivity of marginal overtime hours.

Variations in hours of work appear to offer a greater buffer against unemployment in Japan than in many other countries. A study by the Japanese Economic Planning Agency [JEPA (1992), p. 193] highlights the greater variability of hours worked in Japan as compared with Germany and the US. Hashimoto and Raisian (1988) argue that the main reason is that in Japan blue collar workers are engaged under salaried conditions, and so extra hours do not entitle workers to additional payments. Why Japanese workers should appear not to require financial incentives for extra hours unlike those in other countries may be explained by the use of different types of pay incentives (see § 7 below).

5. Training, internal labour markets and access to jobs

The development of enterprise internal labour markets (ILMs) can have a profound influence on the incidence of unemployment, and probably also on levels of unemployment because of the increased difficulty of finding another suitable job (and hence longer unemployment duration).

Because the existence of ILMs implies a high cost in replacing incumbent employees it has been widely argued that they contribute to 'insider' pressures. Such costs create a margin within which 'insiders' can negotiate higher pay thus causing employers to rein back employment levels [Lindbeck and Snower (1988)].

Internal labour markets have been variously defined, but they might be said to exist for certain jobs when a firm regularly fills vacancies for those jobs from among its current employees. Internal labour markets lead to a concentration of external recruitment through certain ports of entry, and commonly also, upgrading between job levels within the enterprise.

There is much controversy about the coverage of internal labour markets, their degree of openness or closedness to external job applicants, and their causes. Although they have been widely associated with union presence, it would seem that unions are neither a necessary nor a sufficient cause. Many features of internal labour markets were to be found, for example, in the large American non-union firms surveyed by Foulkes (1980), and they are common in parts of national civil services from which collective bargaining is excluded.

The various explanations for the development of internal labour markets give some clue as to the nature of the employment difficulties associated with them. There are six broad classes of management interest in internal labour markets which might lead to their adoption even in the absence of union pressures.

a) ILMs and on-the-job-training

Skill development on the job, when the resulting skills are not available on local labour markets, causes firms to develop internal labour markets [Doeringer and Piore (1971)]. Many organisations require skills that are not available outside, and so have to be developed internally. Firms will often adapt even standardised technology to their own production needs so that it becomes effectively custom-built after a period of use. As a result, the jobs related to it, and the skills required become unique, or 'specific', to the enterprise. Since there is often a degree of overlap between the knowledge required for such jobs, it becomes economical for firms to organise job progression so that on-the-job learning is progressive. As a result, firms develop promotion ladders along which workers may progress. Thus, one reason why firms might seek to develop internal labour markets, even in the absence of union pressure, is that they offer an economical way of organising skill development for their workforces. To reduce the capital loss from labour turnover, the firm may then set up other incentives to encourage worker attachment, such as seniority wage payments, and seniority protection against lay-offs in bad times.

Doeringer and Piore's analysis of ILMs has always attracted a degree of scepticism because of the relatively short time required to learn most semi-skilled blue collar jobs, and the ability of factories using such labour to absorb large numbers of workers from other sectors. This pushes the second element of their explanation to the fore, namely the role of collective bargaining in codifying and consolidating ILM practices. In terms of the current debate about unemployment, this would tend to place such ILMs among the practices designed to protect 'insiders'.

However, recent work on skills and productivity in Japan and East Asia has highlighted an additional component of skill development: the competencies developed in tackling job-related problems. Doeringer and Piore's model stressed skill development in stable industrial environments where workers learned skills for routine tasks. In contrast, the Japanese research has emphasised the role of OJT in adapting to new work demands that emerge as firms respond to market change. Tackling 'unusual operations' as distinct from routine ones enlarges workers' skills and their intellectual capacities for problem solving. For minor problems, this is often more efficient than calling in specialist engineers and technicians because problems are dealt with more quickly, often by preventive action. Workers on the job have a great deal of contextual knowledge that is relevant for problem solving, and for improving production efficiency. However, this requires broader based jobs and more systematic job rotation than was the case for traditional ILMs. It also requires stable employment, without which such skills cannot be built up.⁵ Koike and Inoke (1990), comparing Japanese, Thai and Malaysian plants with similar technology, and controlling for work effort and the availability of expert help, argue that the great productivity advantage of the Japanese plants derived from their pattern of work organisation and skill development.

The stress on human capital factors underlying internal labour markets has received recent support from the finding that employment stability was correlated with training incidence across a range of countries for which suitable data were available, notably in France and the United States [OECD (1993), Ch.4 §4].

b) ILMs and co-operative work relations

Inducing more co-operative work relations where workers have significant individual bargaining power has been another factor behind the development of ILMs [Williamson (1975)]. Internal labour markets may be offered by the firm to its employees in order to create a long term stake in its success. Williamson saw job specificity as meaning that workers were much better informed about the nature of their work, and the effort and skill needed to accomplish it, than their employers. Workers might then take advantage of the information asymmetry to bargain opportunistically, pressing a short-term advantage for a short-term gain. Such small group bargaining pressures exist in all organisations, whether or not they are unionised [eg. Crozier (1963)]. To prevent such behaviour from dragging down the firm's performance, management needs to create incentives for workers to forego their short-term advantage and to seek to participate in the long-term success of their firm. Thus, Williamson argued that firms would offer long term employment, promotion runs, seniority rules, and similar devices, in order to encourage workers to take a long-term view.

c) Management policies on work organisation

Management might also change work organisation in order to provide internal labour market conditions for certain categories of workers in order to reduce labour turnover among groups with transferable skills, and increase their commitment to the firm [Osterman (1982)]. Skill specificity, in this case, is not given, but is a deliberate creation of management policy. In Japan, Taira (1970) argued that Japanese firms had adopted this strategy during the 1920s in order to reduce labour turnover. In the US, in a study of two occupations normally with transferable skills, secretaries and computer programmers, Osterman (1982) argued that employers sought to concentrate important tasks involving discretion on an élite of workers in these occupations who would be given access to sensitive information and further training, and to leave more routine tasks to the remainder, who could be hired externally. The first group would gain internal labour market type employment conditions, whereas the second bringing only standard professional skills to their work, would be given less security. Osterman shared with Williamson the idea that firms would offer the stability of internal market conditions as an incentive to workers to adopt a co-operative attitude to management.

d) ILMs and functional flexibility

The need to increase functional flexibility has also been an important reason for employers to develop internal labour markets. It is often argued that seniority rules and job demarcations provide a form of employment security but at the cost of inflexibility. Seniority rules provide relative security for more senior workers. Job demarcation rules ensure that job vacancies in different firms maintain a high degree of consistency across firms. In 'salaried' internal labour markets, firms gain flexibility of labour utilisation, but at the cost of having to provide a higher degree of employment security [Osterman (1987 and 1988)].⁶

e) ILMs and organisational competencies

Recently, a new stress has been given to the idea of firm-specific skills through the recognition that the competitive advantage of firms lies in their ability to do particular things as well as, or better than their competitors. Such abilities, described as 'organisational competencies', have received a good deal of attention in management literature [eg. Cappelli and Crocker-Hefter (1993)]. For example, Marks and Spencer trade on their reputation for providing inexpensive good quality clothing, whereas another store might trade on its reputation for unbeatable prices. To maintain its market position, Marks and Spencer have to develop a set of management and staff development policies so that individual staff do not undermine

the M&S brand image by inappropriate behaviour. M&S's organisational competence lies in sustaining the standards its customers come to expect, such that unfriendly or badly trained staff, bad deliveries, or a decline in stock or quality management might lead them to switch to another store. The skills on which Marks and Spencer rely are generally not standardised labour market skills, otherwise other stores could easily provide the same distinctive service. Although a good level of general education is required of recruits, the skills have a high 'contextual' or organisational component: learning the Marks and Spencer standards, and how to work as a team with other M&S staff providing the same kind of service. Many of the 'excellent' firms studied by Peters and Waterman (1982) displayed similar organisational competencies which, it was argued, had contributed to their market success.

The contextual skills that contribute to organisations' competencies have implications for the formation of internal labour markets similar to the firm specific skills analysed by Doeringer and Piore. The main difference is that in the former case, skills were acquired primarily by experience on the job, and arose almost incidentally. In the latter case, management has to take a much more conscious line to ensure that the right kinds of inter-personal and team skills are developed within the organisation by means of its own training programmes.

f) ILMs and local labour market structures

Finally, firms' dependence on ILMs may be determined by the types of skill available on their local labour markets. Lorenz (1987) showed that, in the absence of the craft labour markets available to British shipbuilders, their French counterparts had to develop their own skills internally, and so developed their own ILMs. But there is also a theoretical reason why firms tend to resort to internal labour market type conditions for their skilled workers unless there already exist inter-firm occupational labour markets.⁷ Only when these exist do they really have a choice. According to this argument, such occupational markets, if they rely upon Becker's (1975) method of cost-sharing for training for transferable skills, are balanced on a knife edge. Any breakdown in cost-sharing (which for transferable skills means that the trainee has to cover the whole cost of skill acquisition as the firm cannot recoup it from qualified workers who can work elsewhere) will result in firms having to shoulder part of the cost. According to studies of apprenticeship training costs in Britain and Germany such costs are considerable.⁸ This then creates a potential free rider problem as some employers will be tempted to poach skilled labour from elsewhere rather than provide training. Hence, if firms that need transferable skills provide their own training, they have a strong incentive to develop policies to attach those they have trained, among which are measures to make skills less transferable, or to spread training over a longer period, giving the most valuable parts of training only at the end when the worker is more settled in the firm.⁹ Thus, again attachment is something fostered by management policy.

6. Employment problems associated with employer's ILM policies

All of these arguments have important implications for unemployment. Most importantly, they all predict that it will be difficult for displaced ILM-skilled workers to find equivalent employment in other firms. If their skills are specific, they have a bundle of skills other employers cannot easily use, and which they may not readily understand as job classifications vary from firm to firm.

a) Displaced workers

One of the ways in which ILMs contribute to unemployment is by the 'mis-match' problems they generate. Displaced workers have acquired skills and work norms that cannot easily be used, or are not recognised, by other firms. One illustration of the problem can be found in a comparison of the differential effect on skilled workers of changing firms in France and Britain [Eyraud et al. (1990)]. In the French case, a prevalence of ILMs meant that relatively more skilled workers who changed firms had to take a semi- or unskilled job in their new firms. This compared with Britain, where a system of inter-firm occupational

markets for skilled workers made such occupational downgrading quite rare. A prevalence of ILMs could be expected to increase the persistence of unemployment especially among more senior workers.

b) Employment of young workers

Internal labour markets may limit the employment opportunities for new entrants to the labour market. Because firms have a strong incentive to react to a fall in demand by cutting recruitment rather than by lay-offs, they will periodically expand and contract the openings for young workers. Young workers who miss out on an opening when they come of work age may well find it harder to secure an internal labour market job when conditions improve. Some recent research on individuals' earnings over successive years indicates that such lost opportunities may well exert a long term impact on the income and jobs of those affected [eg. Guillotin and Gigard (1992)].

c) Employment problems of older workers

Older workers have been particularly affected by employment reductions in recent years. At least part of this would seem to be due to the working of employment and social security systems. They are also likely to find it much harder to re-enter organisations which use internal labour markets.

Older workers represent an easy target for job cuts for a number of reasons. Their skills may often be less up to date than those of younger workers, and many employers appear to believe, rightly or wrongly, that older workers are harder to train. Where firms use rising age-salary profiles, older workers will be expensive relative to younger workers so that bigger labour cost savings can be made. Employers may also prefer to offer early retirement to older workers because it has less of a destabilising effect upon other members of their workforces. Finally, in some countries, early retirement enables the firm and those laid off to share the cost with the state.

The very attractiveness of older workers for employment reductions also increases their difficulties of finding new work. Presumably, one reason, in Japan, why older male workers, after their relatively early retirement, accept re-employment under much less favourable conditions than previously is that alternative job opportunities are greatly limited by the prevalence of internal labour markets.

d) Insider power

The dependence of firms upon either specific skills or special patterns of motivation derived from internal labour market policies provides an element of individual bargaining power for employees. Indeed, the high cost of building a reputation for employment stability [Foulkes (1988)] and the difficulty of rebuilding such a reputation once lost, mean that firms will be reluctant to abandon such guarantees. Such factors can easily provide a source of 'insider' bargaining power, even without the presence of unions.

Such insider power can be transformed into pay expectations which the employer feels obliged to satisfy for fear of loss of workforce morale.¹⁰ Being relatively insulated from local labour market pressures, workers on internal labour markets could well be a source of wage pressures which damage the employment prospects of other workers. Individual firms will tend to hire less labour, and the potential inflationary impact may cause governments to run the economy at a more depressed level.

Nevertheless, insider bargaining pressures may be mitigated by two factors. First, firms may develop their policies to foster employee commitment. It is noteworthy that many of Foulkes' large non-union firms with ILM conditions also had active personnel policies designed to foster employee commitment. Secondly, ILMs provide workers with a long-term stake in their firm's success, and this can counterbalance the incentives to extract the maximum short-term gain from their employer.

7. New production philosophies

The rise of mass production and its generalisation from the 1940s was particularly conducive to employment growth because of the small demands made on worker skills, and the consequent ease with which people from different sectoral and skill backgrounds could be integrated.

Apart from any influence on the demand for labour overall, technical change has been associated with major changes in management and organisation. Technical change has implications for the demand for different kinds of skills, the way in which skills are formed, and access to training and subsequent skilled positions. In particular, it may affect the balance between professional and enterprise based skills, and between intra-firm and inter-firm employment adjustments. These qualitative changes may affect overall unemployment levels only indirectly, but they could have a more direct effect upon the dynamics, incidence, and consequences of unemployment.

Three broad views of the consequences of technical and organisational change have been developed focusing on the transition from the era of mass production to different types of production system. For all three, mass production had a number of key characteristics: large-scale production units relying on economies of scale in production which made it economical to employ large amounts of dedicated capital equipment. Each machine would undertake one simple operation, often specific to a particular model, for example, stamping bodies for one particular model of automobile. Retooling for production of a different model was usually a complicated and expensive process to be undertaken only infrequently. On the labour side, work was finely divided into a set of operations which most people could master after a very short time.

Perfected as a method of organisation in the automobile industry, hence the expression 'fordism', many attributes of the system of work organisation were to be found in other industries, indeed, many aspects of Henry Ford's mass production system were already to be found in the food processing industries before his time. Elements of the model were also applied in the services sectors. For example, the reforms of the United States Federal Civil Service of the 1920s were strongly influenced by the ideas of scientific management [Milkovitch and Wigdor (1991)], and recent research in France illustrates how strong is the division between tasks of conception and organisation and those of execution, even in such areas as engineering development work [Maurice et al. (1988)].

Although highly efficient, mass production systems contained a number of dysfunctions which proved increasingly costly over time. First, the heavy investment in dedicated capital equipment and in many small but discrete packages of skill (for each individual job category) meant that the system was very vulnerable to fluctuations in business conditions so that employment stability was hard to achieve. In some countries, such as the United States, greater predictability for workers could be obtained by means of 'last in first out' seniority rules for lay-offs, but these in many ways further reduced any flexibility of labour deployment [Katz (1985)]. In other countries, experiments in work organisation were undertaken in an attempt to break the culture of employment instability [eg. Volvo's redesign of work at its Swedish plants-see, Berggren (1992)], and in others, pursuit of specialist high value added market niches sought to avoid the worst fluctuations and so provide employment stability as a basis for higher skill development [Mendius and Sengenberger (1976)]. However, none of these partial solutions appeared to resolve the underlying problems of employment instability, alienation, and low levels of skill.

It was a classic 'low trust' system. Power relations dominated in the work place as workers were often well-rewarded compared to alternative jobs, but also often easily substitutable because training times were mostly short. In its heyday, it was a formidable engine of job creation because its growing demands could so easily be met by workers from other backgrounds, such as the former agricultural workers and 'guest workers' in many European countries. The one big advantage of the culture of employment stability and relatively high labour turnover was that such production systems were very effective recipients of new workers. It also provided a staging post on the way to better jobs for many poorly qualified young workers

who gained first jobs in unskilled and semi-skilled manufacturing [as happened in France- see Clémenceau and Virville (1981)].

a) Flexible specialisation

A first major change in the system arose with the emergence of a new generation of electronically controlled machine tools which could be re-programmed to carry out other operations much more easily than the dedicated equipment of classical mass production [Piore and Sabel (1984)]. This had two profound consequences for the organisation of mass production: first it radically altered the nature of scale economies, away from production, and towards R&D and marketing; and secondly, it shifted the basic assumptions of work organisation. 'Flexible specialisation' of capital goods meant that workers' jobs and skills would have to be more varied.

Henceforth, small-scale production would have a much greater part to play in industrial activity, a prediction which received some support from the growth in the employment share of small firms in many countries during the 1970s and 1980s [Sengenberger, Loveman, and Piore (1990)], and on the labour side, Piore and Sabel envisaged the emergence of a kind of 'neo-craft' type of production as an alternative to mass production, and modelled on the industrial districts of small firms in northern Italy.

Piore and Sabel's predictions concerning the future evolution of mass production have attracted less agreement than their diagnosis of its likely decline. A more general typology of scenarios was offered by Sorge and Streeck (1988) who stressed the importance of economies of scope arising from the new microprocessor controlled technology.

b) Economies of scale and scope

Reviewing some recent research on new management models of production, Sorge and Streeck (1988) argued against the view that technical change drives changes in work organisation. Instead, they stressed the importance of managerial choice, and the way in which new microelectronic technology had opened up new possibilities, not so much in terms of control of labour, as in terms of new product market possibilities. In particular, they argued that new technology has favoured the development of quality market niches in a number of former mass markets. By offering greater flexibility in capital equipment, and thus greater scope for product variety, new technology has opened up a new future for the highly skilled workforces of countries such as Germany and Sweden. As economies of scope offer an increasingly viable alternative to economies of scale, they argue that taylorist, low trust, mass production systems need not necessarily chase out highly skilled flexible production systems. In terms of Figure 1, new technology has opened up the possibility of diversified quality production as an alternative market niche to high volume standardised production. They justified their argument on the success of the high quality end of the German automobile industry during the 1980s [Streeck (1985)].

One of the main employment implications Sorge and Streeck wished to stress was that there was no single logic of technical change that was pushing firms towards progressive deskilling of labour, nor any necessary tendency towards a polarisation between an army of deskilled workers and a highly skilled élite. Both these views, they argued, assumed that the logic of mass production still prevailed. In fact, the purpose of their typology was to suggest that management would choose its technology according to the type of product market it was targeting. The economies of scope offered by new technology introduced a new dimension to their choice.

c) Lean production

The third set of changes relates primarily to management rather than technology, that is the rise of 'lean production'. This management innovation has no doubt been facilitated by new technology, but it is first and foremost a revolution in management thinking comparable in importance to that which

accompanied Ford's perfection of mass production in the 1920s [Womack et al. (1990)]. To emphasise the point, the authors' paradigm example of lean production was that of Ohno's reorganisation of die changes for stamping car parts at Toyota in the early 1950s, which involved only reorganisation using existing technology (the presses were second hand ones from the US).

Mass producers would set up presses to produce long runs of particular parts in order to gain scale economies because of the extreme precision needed and the cost of die changes. In the early post-war period such runs might even last for years. Ohno perfected a means of rapid die changes, such that by the late 1950s they could be done every three minutes, thus avoiding the need for capital tied up in large inventories, and cutting rectification work because quality problems became immediately apparent instead of after a large run had been completed.

Making such a revolutionary idea effective entailed a number of other equally important organisational changes. For example, large buffer inventories also protected the flow of production against poor labour relations, high levels of labour turnover and absenteeism, and general lack of employee interest in the job: all well-known features of mass production systems. To understand the depth of the organisational change involved, it is worth reflecting briefly on the way mass production systems have been managed.

Mass production was based on a strict division between conception and execution; in design work on a high degree of functional specialisation; and in supply, on a tight market relationship between the assembler and its suppliers. Although highly efficient compared with the craft production systems it displaced, it nevertheless had a number of weaknesses which have come to assume greater importance as workforces become more educated and more demanding of their work, and as consumers demand more reliable and better quality products.

It was a rather rigid system as concerns patterns of labour utilisation at most levels, and in capital use. Some of the rigidities in labour utilisation were accentuated by organisational dysfunctions and patterns of job control. In particular, Womack et al. (1990) stress the informational diseconomies arising from the prevalence of bargaining relationships at every point of transaction in the system, between workers and supervisors, different functional departments, assemblers and their suppliers, producers and customers. As a result of these relations, each party has an incentive to withhold information as this is the source of bargaining advantage. This causes a failure to achieve high rates of co-operation, and the innovation gains that can flow from information sharing.

Mass production coped with economic and organisational uncertainty and change by building up buffer stocks, and it coped with de-skilled, discontented workers by narrowly defined and easily monitored jobs, tight supervision and financial incentives, together with an army of staff engaged in quality inspection and fault rectification. However, although buffer stocks enable a complex production process to keep going despite problems of quality and coordination, they also hide the causes of these problems.

The essence of lean production follows from the elimination of many expensive safety nets used in mass production, and the consequent exposure of organisational failures. Without buffer stocks, and costly managerial control mechanisms, the problems that caused delays on the production line are exposed and have to be resolved quickly. This implies that managers and workers need suitable work organisation patterns, skills and motivation to tackle these problems. With lean production, demotivated managers and distrustful workers have a far greater power of disruption. Hence, 'lean production' is above all a method of management, and a way of tackling organisational and technical problems directly, as they emerge. Some of the linkages between its key human resource features may be set out as in Figure 2.

Lean production and the level of employment

It is clear that lean production is a much more economical way of using all kinds of resources to

produce large quantities of goods. Whether it really can use 'half the human effort in the factory, half the manufacturing space, half the investment in tools, half the engineering hours to develop a new product in half the time' [Womack et al. (1990), p.13] as compared with mass production may be exaggerated. However, a glance at Table 1 on some of the productivity comparisons and automobile and supplier performance data assembled by their study suggests that European producers especially face a very profound restructuring.

These productivity comparisons by Womack et al. deserve special attention because the authors collected their own data, and could therefore eliminate many of the causes of non-comparability found in other studies. Given that European workers aspire to similar levels of real wages to those paid in the US and Japan, these productivity differences mean that European automobile producers have still to seek very substantial increases in productivity. They are striving to do so, and many are seeking to implement key features of lean production identified by Womack et al. (eg. Ford, Peugeot, Renault, and recently Mercedes).

Moreover, these changes are unlikely to remain confined to the car industry, and are rippling out to the supplier firms. The pressure to do so, and the scale of organisational change required in Europe is again highlighted by comparisons of supplier performance by Womack et al. as shown in Table 2.

However, the problem posed to European producers is not just one of catching up. Lean production, as analysed by Womack et al. is also a formidable heuristic device, continuously seeking out new areas for improvement. Cutting inventory exposes new organisational weaknesses. Earlier research in the mid-1980s tended to present the problems of the US and European industries as primarily one of closing the huge productivity gap which had developed during the 1970s.¹¹ What they overlooked was the new productivity dynamic developing across the industry. The nature of the pressures on European producers emerged in the debate in France between the then Minister of Labour and the CEO of Peugeot, M. Calvet, over the use of successive 'social plans' for lay-offs by Peugeot. Peugeot insisted that it had to cut jobs, despite being profitable, because of the slack market, and in order to maintain its target of a 12% annual productivity growth rate. BMW announced similar productivity growth targets for its operations in June 1994.¹²

If one follows the analysis of Womack et al. other European producers are in the same situation as lean production is already much more firmly established in Japan and North America.

Lean production and the structure of employment

The main changes in the structure of employment may be summarised as follows:

- less semi-skilled production jobs
- less supervisory and 'control' jobs
- less routine engineering and design jobs
- more long-term employment
- more multi-skilling
- less professional and more company skills
- a reinforcement of internal labour markets
- more devolution of decision-making

Once again, although many such structural changes have been related to the introduction of new technology, they are also dictated by the organisational principles of lean production, with or without new technology.

d) The Aoki/Koike model

Aoki's contrast of the J-firm and the A-firm, both stereotypical representations of certain types

of large Japanese and American firms, sheds important light on some of the inter-relationships between some of the guiding ideas of new management practices. His argument builds on Koike's field studies, a number of which sought to evaluate the contribution of patterns of employee management found in Japanese firms to their productivity advantage over similar firms in other countries. Koike's comparisons are important because they spread outside automobiles to such industries as cement, car batteries and machine tools [Koike and Inoke (1990), and Koike (1988)]. Although these industries may not be following all the principles of lean production developed in the automobile industry, they nevertheless incorporate many of the associated work organisation practices which Womack et al. argue play a central part in its successful application.

The main thrust of Aoki's argument is that 'horizontal coordination' in large production units can be at least as effective as the more traditional 'hierarchical' type found in the typical American mass-production firm. Whereas hierarchical coordination relies upon the creation of specialist coordination functions within the enterprise, and therefore a fairly heavy hierarchy of managers and supporting specialists, horizontal coordination does away with a large part (but not all) of the hierarchy, and relies much more on direct coordination between workshops and other functional groups within the enterprise. Rather than centralise information in the managerial hierarchy, much more of it is shared among these groups.

The standard economic analysis of hierarchical coordination shows that it is indeed more efficient than alternative models when the amount and variety of information to be handled is relatively simple and predictable. Such arm's-length communication copes well with large numbers of standardised pieces of information. Where it loses is when the richness of information needed to resolve certain work or coordination problems is critical to finding speedy and effective solutions. Then there are gains to solving problems at the point at which knowledge and understanding of the issues are greatest, that is, within the workshop or work team.

To make horizontal coordination work effectively however, three preconditions must be met: the workers involved must have an adequate level of technical knowledge; their understanding of each others' jobs must be broad; and the incentives must be such that groups do not use their greater access to information for their own 'selfish' bargaining advantages vis-à-vis either other groups, or management.

These three conditions have important practical policy implications: first, horizontal coordination is more demanding of the educational level of ordinary workers; secondly, breadth of knowledge is possible only if narrow specialisation is avoided, and it is helped by job rotation; and thirdly, incentives must be right to encourage co-operative behaviour and discourage 'free-riding'.

The importance of these ideas is seen when one considers that it is widely believed that customer requirements are changing more rapidly, product cycles are shorter, and the removal of trade protection means that established firms have to respond to pressures from new competitors and their innovations more rapidly than in the past. Thus Aoki's theoretical formulation of some of the insights derived from Womack et al.'s intensive study of one sector suggests that competitive pressures on firms will cause them to seek to develop greater horizontal coordination in their own organisations.

The employment implications of Aoki's model depend very much on how management solves the problem of selecting and motivating workers for effective 'horizontal coordination'. As with lean production, motivation of the incumbent workforce is critical to its economic viability.

Motivation for workers within the 'J-firm' is provided by two chief mechanisms: a ranking hierarchy in which good performance is rewarded by promotion; and a 'partial gift exchange' in employment. The ranking hierarchy allows merit to be rewarded by promotion since ranks are divorced from functional positions, and are more akin to status positions than particular sets of jobs. Higher ranks nevertheless usually incorporate recognition of the ability to undertake an increasing range of work tasks

under job rotation.¹³ The system also facilitates flexibility of work assignments as pay is tied to rank and not to individual jobs. However, one incentive to be a good team player is the hope of promotion to a higher rank. The 'gift exchange' offers higher effort in exchange for job security and a higher level of pay.¹⁴

The employment implications of Aoki's model can be summarised as follows:

- a) recruitment of educated workers for long-term positions (because of the need for flexibility and a good learning capacity);
- b) long-term employment for those where group learning and job flexibility are critical;
- c) status division in the workforce between those for whom motivation and skills are critical, and those for whom they are less so;
- d) exclusion of mid-career job-changers from the 'core' workforce;
- e) the 'non-regular' positions may be more open to mid-career job-changers and the unemployed;
- f) long tenure-earnings profiles may facilitate low entry rates of pay for new workers, so young workers may not be excluded [see debate between Sako (1991) and Marsden and Ryan (1991)];
- g) the shared interests between management and the core workforce may lead to higher investment in capital equipment and slower employment growth in order to generate rents which can be shared with core workers (a common problem in the economics of self-managed firms);

Although Aoki estimates that even in Japan only one third of workers are in J-firms, it is believed that the recent increase in average job tenure in Japan is a reflection of the spread of this type of employment system to smaller firms [OECD (1993), Ch. 4].

e) TQM as an extension of lean production in services

The development of Total Quality Management (TQM) is a broader concept than that of lean production, but it shares a great many key organisational features [eg. Hill (1991)]. It has been spreading rapidly in the services, utilities, and the public sectors of a number of countries. In the UK, the government's 'Citizen's Charter' for the public sector embodies many TQM ideas, and such thinking has been influential in recent reports on reform in the police [Audit Commission (1991), Sheehy (1993)] and in the universities [Fender (1993)].

According to Hill, the TQM 'gurus' stress five main features of TQM: top management should be the driving force behind quality; quality improvement should be achieved within the vertical management structure, and make use of multi-functional teams; incremental quality improvements should be taken on as a specific management task; employees should be trained in systematic problem identification and solving; need for cultural change in organisations. His own study further stressed the role of middle management and of employee participation.

Other writers on TQM such as Walton (1985) and Lawler (1992) have stressed the shift from management use of 'control' to 'commitment' as the key motivational factor, using 'stretching' performance standards and a flatter managerial hierarchy to guide the organisation, and employee involvement and a measure of job security to increase employee commitment.

Whereas lean production appears tied to manufacturing type activities, TQM is a movement that has been taken up by a wider range of organisations, including the services sectors and the public service.

There are some notable areas of overlap with lean production. The emphasis on top management's design of organisational systems to force quality issues into the open, and the elimination of buffer stocks where appropriate have an important role, for example, in banks and tax offices. Elimination of intermediate stocks of work (eg. large piles of tax returns awaiting processing) can also be effective in quality improvements in the services as customer complaints can bring quality failings to the fore more quickly.

Perhaps the main difference of emphasis with regard to lean production is the common stress in TQM on exposing staff to contact with customers. Just as eliminating buffer stocks means that teams of workers have to be able to act quickly to rectify a problem, often without waiting for management intervention, so direct contact with customers can only really be effective if staff have sufficient discretion to make decisions without referring upwards all the time. Indeed, if they had to refer back to their supervisors too often this would defeat the object of closer customer contact.

Dealing with customer problems may also be quicker if staff can refer quickly to others at the same level without passing through the management hierarchy. They are also likely to be more effective if their functions are less compartmentalised as customer problems often spill over the sectional boundaries within organisations. Hence, one can expect the equivalent of team working under lean production within TQM.

All the above three approaches, lean production, the 'J-firm', and TQM place a heavy emphasis upon commitment by employees to their organisation's goals. Walton (1985) argues that such commitment can only work if reciprocated: organisations have to show similar commitment to their employees. Often this is taken to mean a commitment by the firm to stable employment, yet this is costly, as is illustrated by the research of Foulkes and Quinn Mills.

Foulkes' case studies of non-union firms offering employment security suggested that management saw this as underwriting their policies to foster employee commitment. Several of his examples show that firms were prepared to incur considerable opportunity costs in order to sustain their commitment to their employees. In one example, a firm decided not to take on a large contract because it would have meant taking on a large number of temporary staff, which would have undermined its reputation for stable employment [Foulkes (1980), p. 100]. In a survey of some major firms' programmes to maintain employment security during the 1980s, Foulkes (1988) again highlighted the costs involved in use of supplementary workforces, separation incentives, redeployment, expanded personal leaves, and work sharing.

Another example, analysed in depth, has been the cost that IBM was prepared to incur in order to maintain its reputation for employment security despite a major reduction in the size of its operations [Quinn Mills (1988)].¹⁵ The company retrained and redeployed over 20,000 employees from 1986 to 1988; 9,000 were transferred from manufacturing and product development into sales, programming and engineering; 7,600 left customer support and headquarter assignments to return to work directly with customers; 4,000 moved to other locations to do jobs similar to those that they had been doing because the old location division had been closed or had its purpose changed.

Quinn Mills' (1988) study of IBM, provides some evidence of effective reciprocity between the firm and its employees. After interviewing many IBM employees he reported that full employment practices had earned the loyalty of employees. Interviewees told him that they were willing to put in extra commitment for a firm they thought they could trust. The company also saved some of its investment in skills and in building up a strong culture and set of business practices among its employees. It would be interesting to know whether IBM has been able to sustain such attitudes during the more recent restructuring.

In these examples management saw full employment practices as designed to elicit commitment and related patterns of behaviour among employees. They entailed reciprocity. A firm acquires a reputation for stable employment among its employees by the economic cost it shows it is willing to incur to sustain that reputation. Never to have laid anyone off proves nothing of itself: the firm may never have needed to. One does not acquire a reputation for honesty simply by never lying, but by telling the truth when it would be to one's advantage not to do so.

f) Some evidence on the extent of TQM practices

Evidence on the extent of TQM is fragmentary, however something can be gleaned from a number of sources including surveys of employer practices; indications of causes of change; data on employment change of those groups of employees most likely to be affected (i.e. supervisors); and evidence on job tenures.

A recent survey by Lawler et al. (1992) of Fortune 1000 companies in the United States indicated that three quarters of the firms in their sample had introduced some TQM practices, (main findings are summarised in Table 3) although the survey did not enquire about stable employment. It was clear that only about one fifth of the firms had done so for 40% or more of their employees. What was striking in their results was that many firms which had adopted some TQM practices appeared to have adopted a wide range of them. Firms that were heavy users of TQM tended also to be heavy users of employee involvement. This would be consistent with the idea that the firms were adopting a coherent package of policies, rather than acting in a piecemeal fashion, although it should be said that 'heavy user' firms were in the minority.¹⁶

Evidence for the UK is less clear-cut, largely on account of the data. Reviewing such evidence as could be gleaned from the 1990 Workplace Industrial Relations Survey, Sisson (1993) showed that there had been an increase in employee communications programmes, financial participation, and a strengthening of the personnel function, together with a decline in employer organisations. But as he argued, these were only 'fragments' of new management approaches so it was impossible to tell whether adoption of such policies was part of a strategic approach by management or simply piecemeal change. Again, there was no question about employment security.

In France, by 1992, Coutrot and Paraire (1994) report that a third of plants had quality circles (about two thirds in those with more than 500 employees), over two thirds had workshop and office briefings, a third had employee expression groups, and the majority of plants provided employees with information on a wide range of business and employment information.

Recent survey and case study evidence from northern Italy suggests similar developments there [Ambrosini (1991)]. Management have taken a more active role in developing the 'human capital' of firms, and spending less time on traditional union bargaining issues. They appear to be stressing training, recruitment and selection, communications programmes, motivation, and more generally, transforming quality circle initiatives into a more systematic approach to quality management. Survey evidence from Regalia and Ronchi (1989) suggests that these movements have attained considerable depth, at least in northern Italy, and in large firms. For example, about one third of large firms reported having quality circles, and in a third of these they involved more than half of the employees.

Nevertheless, Ambrosini raises important questions about these developments, notably whether firms have fully thought through the requirements of employee commitment-based motivation policies in terms of job security, and whether they have really taken account of the difficulties of offering such conditions to only part of their workforces. Thus, as with the British evidence, there is some question as to how far these are strategic initiatives forming part of an overall programme of change in the enterprise, and how far they are piecemeal changes.

It is of course possible that a gradual accumulation of incremental changes will bring about a qualitative change in the underlying logic of employee relations. As few human resource managers start with a blank sheet, in most firms, change has to be introduced in a piecemeal fashion, whether management has an overriding strategic vision or not. However, it is also possible that incomplete reforms will be dominated by the prevailing logic of adversarial employee relations.

It is hard to assess the significance of such statistical evidence on the incidence of individual

practices without some indication as to management's objectives. Some clues as to motivation may be gleaned from survey evidence.

Where a question about the causes of change was asked, increased competition and product change have been cited as the main influences (in Lawler: foreign competition; and in Regalia and Ronchi: competition generally). These were indeed the pressures for change in the car industry industrial relations in the US and the UK in the 1980s [Katz (1985), Marsden et al. (1985)]. Lawler et al.'s survey found additionally that firms also adopted them in order to cope with shorter product cycles. The consequent need for frequent reorganisation and flexible working pushed management to look for alternative means of gaining consent. In their survey, firms facing stronger foreign competition and shorter product cycles reported using Employee Involvement (EI) programmes to help in a number of activities, including restructuring management for more devolved decision-making, and improving management-union relations.¹⁷ Thus some of the pressures driving the spread of lean production appear to be influential in the spread of TQM practices.

A second piece of evidence is that in the US, Britain, France, and Italy, many of these new ideas have in fact been introduced in unionised workplaces. This may seem surprising because their ethos, as stressed by many gurus, is that of refocusing management-employee relations on individuals and work groups at the expense of the union. However, it has been argued that management has been seeking to transform employee relations in a direction more compatible with new production and service concepts. Such moves may have received greater attention in countries such as the US, Britain, France and Italy because of the tradition of adversarial management-union relations.

One of the key predictions of TQM in the shift from management by control to one based on employee motivation, or 'commitment' is that the proportion of employees engaged in supervisory and monitoring tasks should diminish. Cappelli and Rogovsky (1994) examined the effect of 'high performance' management on skill requirements in a small sample of US organisations. The high performance systems placed greatest demands on 'workplace competencies', (that is, the ability to allocate resources, interpret and communicate data, understand and improve equipment, select and apply equipment), rather less emphasis on interpersonal skills, and least on basic educational skills. They also observed a bigger rise in skill requirements for production and clerical than for managerial workers, interpreting this as a sign of increased devolution of responsibility to the former groups.

The British New Earnings Survey provides some evidence (see Table 4) of a decline in employees engaged in supervision and inspection during the 1980s. In a number of blue collar industrial occupations, the share of supervisors and foremen declined by between a fifth and a quarter. The employment share of inspectors and testers also declined sharply. The significant exception was construction, the activity in which lean production and TQM have arguably made the smallest inroads, where there was virtually no change.¹⁸

A prima facie indicator of increased use of management policies based on employment security would be an increase in job tenures among the workers concerned. Such data are subject to many provisos. Comparisons of job tenures over time may be affected by demographic changes, alterations in the employment structure, and by levels of recruitment and lay-offs.

A recent comparison of job tenures controlled for demographic changes by analysing age-tenure profiles in nine OECD countries [OECD (1993)] confirmed the wide extent of long term employment practices in the 1980s. However, during the decade, most countries appeared to show some reduction in average tenures for workers in their twenties (except Japan), but a maintenance, and even a small increase for older workers.¹⁹ The strongest increases for older workers were in Japan, and to a lesser extent, Germany [OECD (1993), Ch. 4]. For males, the UK and the US showed a distinct weakening of the relationship for older workers over 50.²⁰

Although lean production and TQM might require a basis of long term employment, their spread would not necessarily be reflected in an increase in job tenures if the firms in which they were introduced already had long tenures. US-style mass production had built-in job insecurity in the form of seniority-based lay-offs, but these were quite compatible with long job tenures for the more senior workers. Once one had achieved a certain level of seniority, the probability of lay-off decreased. Indeed, even in the US and UK automobile industries, long job tenures among the more skilled blue collar workers were quite common, despite the industry's general reputation for 'hire and fire'.

Thus, apart from Japan, it would seem that new management practices have developed, in many cases, among firms which already provided longish job tenures. Rather than transforming firms from a 'hire and fire' model of short tenure, they have transformed management practices in firms which already had a significant component of stable employment. If the theories are correct, this would involve a shift in the basis for long term employment, and a change in its underlying logic (away from restrictive seniority rules and towards reciprocity-based policies). This interpretation is consistent with the observation that TQM practices (see above) have often been introduced into unionised workplaces.

Taken with the UK evidence of a decline in the employment share of foremen, there is tentative evidence that changes in the direction of TQM and lean production have affected some firms, and specific occupational categories. The survey evidence in the study by Lawler and the Workplace Industrial Survey also indicates that strong forms of these new management practices have been adopted mainly in a minority of firms. This may not be surprising in view of the cost of the reciprocity by employers needed to foster more co-operative employee relations. Only in Japan does there appear to have been a marked spread of long-term employment during the 1980s. Elsewhere, the spread in aggregate has been limited, but better evidence is needed before any firm conclusions can be drawn.

g) Core periphery models

One theme running through all of the above models of emerging managerial policies is that firms can make significant gains by providing long-term, stable, employment conditions to a significant part of their workforces.²¹ However, such guarantees are costly. They may be even more so if flexible deployment of labour between activities involves training. There is therefore a tension between the increased overhead undertaken by firms in offering stable employment, and the increased qualitative and quantitative variability of product markets to which such policies are meant to respond. One might therefore expect firms to seek to limit stable employment to those employees whose jobs demanded it, and to retain more traditional employment policies for the others. What the precise mix of policies would be is an empirical question depending, among other things, upon the relative costs and efficiency gains of one employment method compared with another. However, it is noteworthy that such an exponent of the 'J-firm' as Aoki readily conceded that strong lifetime employment applied only to about one third of Japanese workers.

One of the strongest recent statements that firms are moving towards a dualistic system of employment was made by Atkinson and Meager (1986).²² On the basis mainly of a study of the labour flexibility policies of about 70 large firms in Britain, they argued that firms were seeking to develop a core workforce with stable employment and functional flexibility, combined with a periphery of workers with less stable employment conditions providing the firm with numerical flexibility. The inferences drawn by Atkinson and Meager were strongly contested by a number of researchers, notably Pollert (1988), Hakim (1990) and Hunter et al (1993), but the fundamental idea behind their research has continued to attract interest, perhaps because of the apparent convergence between their own observations and those of the management policies and philosophies just reviewed.

The Atkinson and Meager model represented the 'flexible firm's' workforce as a set of concentric rings, like those of an onion, with a core of employees enjoying stable employment conditions in return for accepting functional flexibility in work assignments, surrounded by rings of progressively less permanent groups providing the firm with numerical flexibility.

The discussion of the A&M model has revolved around two basic questions. The first was whether the differentiation of the workforce observed by A&M was anything more than a cyclical variation in the employment conditions of weaker groups in the labour market, and hence whether A&M had indeed identified a new model of enterprise personnel policies. The second has concerned which categories of workers belong to the 'core' and which to the 'periphery'.

In the UK, Hakim (1990) and Hunter et al. (1993) found that only a minority of firms (5%-15%) appeared to be adopting the dualistic model as a part of an overall human resource strategy, and that mostly firms approached the use of non-standard employment conditions case by case. Hunter et al. also found that segmentation occurred more frequently between than within firms, perhaps because it was hard to apply different rates of pay to people doing essentially the same work. They also found additionally that a number of firms were considering returning to standard employment relations because they had problems of coordination and lack of commitment among groups employed on a short-term basis. This suggests that Atkinson and Meager may have underestimated the hidden costs involved by non-standard work relations. Hakim (1990) suggests that UK evidence may not be typical of other countries because there are fewer legal and tax incentives for employers to segment their workforces there.²³

The evidence then on increased employment segmentation, like that on new enterprise human resource strategies, suggests that strategic thinking, seeking to implement new practices in a systematic and holistic manner, is characteristic of only a minority of firms at present. But, as discussed earlier, there are severe limitations on trying to measure firms' human resource strategies by means of questionnaire surveys. In addition, if firms adopt reforms incrementally and by trial and error they may not have an overall strategy, but still external pressures could be pushing them in a consistent direction.

8. European unemployment and patterns of management versus those of Japan and the United States

Much of the discussion of employee management practices so far has stressed elements that might be relevant to unemployment in all countries. It might seem therefore that the outcome has been simply to add flesh to abstract theories of firms' behaviour. This may be useful in itself as a guide to the areas in which firms might alter their policies should they wish to reduce some of the side effects. However, a closer analysis of the incidence of management policies across countries can be used to shed light on some of the more puzzling features of the international unemployment experience. Data sources impose severe limitations on any such exercise so any conclusions can be only tentative. Nevertheless, one of the features about unemployment which has puzzled many observers is why it should be so high and so persistent in many of the European Union countries. Bean (1994) shows that in 1988, 55% of the unemployed in the European Union were long-term unemployed, compared with 21% in Japan, and about 7% in the United States and in the Nordic countries. Annual outflows out of unemployment were correspondingly lower in the EU countries than in the other areas, and particularly the US where outflows are the highest in the OECD area. Flanagan (1993) has argued that this might be explained by firms' reluctance to hire.

The most obvious candidates to explain such a pattern would be legal and agreed redundancy provisions which make it expensive to lay people off, and unemployment insurance provisions which enable people to remain unemployed for a long period. Yet Büchtemann's (1994) survey of evidence on lay-off provisions, and Bean's (1994) review of that on benefits both suggest that these could explain only a small part of the European problem.

It has been suggested that insider advantages may be greater in the EU countries than elsewhere [Blanchard and Summers (1986)], and other work on individual European countries such as the UK lends some support to this [eg. Nickell and Wadhvani (1990)].²⁴ The diversity of union strength across European Union countries is such that there can be no simple correlation between insider advantages and unionism.

In any case, Nickell and Wadhvani report that estimates of insider effects for the Nordic countries are lower than for the EU countries despite their high levels of union membership.

It is therefore worth looking at whether prevailing management practices in EU countries add to the European unemployment problem, and whether these might affect insider advantages. Three themes will be addressed:

- a) the nature of the long-term employment commitment
- b) the nature of flexibility of labour deployment
- c) enterprise employee representation

a) Management and long term employment

Comparisons of enterprise tenures in 1991 show the United States at one extreme, with 6.7 years, and Japan at the other with 10.9 years. The major west European economies range from near the US level to near the Japanese one, with the UK at 7.9, France at 10.1, and Germany at 10.4 years [OECD (1993)]. As Table 5 shows, the differences are of similar rank but more pronounced if we take the percentage of workers with five or more years' tenure: with the US at 38% and Japan at 63%.

Such summary statistics for national economies have to be treated with care because of considerable variation for individual groups and industries. Nevertheless, they show that the unemployment problem faced by European Union countries is unlikely to be the result of employment stability alone: otherwise Japan's problems would be more serious.

It might be objected that employment stability is only a problem if firms need to adjust to fluctuating markets, and that Japan's growth has so far avoided the need which has afflicted western Europe. However, overall economic fluctuations have affected all these countries. For example, the standard deviation of changes in production since 1961 is 6.7 in Japan, 5.5 in the US, and 4.8 in Germany [JEPA (1992), p. 193]. Despite these, Japan has sustained considerably smaller variations in employment and labour input. Indeed, the speed of employment adjustment in manufacturing has also been considerably slower in Japan than in the US, and also slower than in Germany and the UK [JEPA (1992)].

The sensitivity of employment to changes in output can be measured by means of employment functions, taking the coefficient on output, and that on employment in the previous period, the latter showing the degree of inertia in employment adjustment [Brechling and O'Brian (1967)]. International comparisons by the ECE (1982) and more recently by the OECD (1989) show the US and Japan at the two extremes, with high sensitivity of employment to output changes and low inertia in the US, with Japan at the opposite pole (Table 6). The major European countries lie in-between, consistent therefore with the evidence on job tenures reviewed earlier, subject to one interesting observation:²⁵ Germany has the high job tenures of France and Japan, but in terms of flexibility of employment levels it is closer to the UK and the United States.

A recurrent theme in this paper has been that employment stability for a core group of employees may depend upon there being other groups of employees which can absorb employment variations. The same OECD study provides a crude illustration of this in the overall percentage of short-tenure workers (Table 5). These will of course include also those who have been recently hired as potential long tenure workers, and may also reflect employment growth. Nevertheless, the US again appears at one extreme, and Japan at the other, with the three European countries in between. Thus, if Japanese long term employment depended upon an army of short tenure workers, it is no better endowed than the other European countries. The one notable difference, potentially providing Japan with greater flexibility is the stronger polarisation between men and women. The ratio of men's to women's average tenure is 1.7, compared with 1.3 in the US, 1.5 in the UK, 1.5 in Germany, and in France, 1.1 [OECD (1993), Tab. 4.1].

b) Flexibility of work allocation

Employment security need not harm competitiveness if there is compensating flexibility of work allocation within the enterprise. Unlike job tenures which can easily be measured on a common scale, measurement of internal labour flexibility within the enterprise should, ideally, be based on detailed case studies. Cole (1979) illustrates how the precise definition of individual jobs in US firms stands in stark contrast to their diffuse definition in Japanese ones and therefore destroys any significance of statistics on intra-plant job changes. There have nevertheless been a small number of inter-country comparisons of internal plant organisation, and these can be linked with fragmentary evidence from other plant-level studies.

The ability of Japanese management to redeploy staff, and to use flexible work allocations and job rotation is well documented, although its extent across firms and depth of use is hard to evaluate.²⁶ Koike (1988) provides evidence that many of the features of large firm employment, notably internally generated skills and flexible deployment of labour between jobs are widespread also in small firms in most sectors. Cole (1979) argues that the diffuse definition of jobs in Japanese firms is an important factor in job flexibility as workers move between task assignments without changing their 'job', compared with the close identification between work task and one's job in US factories.²⁷

Osterman and others have argued that prior to the shake-up of the 1980s, internal labour markets in the US tended to have very detailed job classifications and narrow job boundaries which proved to be a major obstacle to the internal redeployment of labour. Although there have been considerable changes in seniority systems during the 1980s, nevertheless, Katz's (1985: Ch. 4) study of the introduction of new working practices in the US auto industry highlighted the persistence of problems related to seniority and job assignments as well as the refusal of some skilled groups to enter into team working. Thus, the seniority-type mechanisms which have enabled US employers to lay-off and rehire workers with relative ease, and which have contributed to their high rates of in- and outflow from unemployment, appear to have persisted.

Turning to the European countries, most of the bilateral comparisons show that Japanese firms have greater freedom to redeploy labour internally. Comparing France with Japan and Germany, Maurice et al. (respectively 1988 and 1986) highlight three important areas: job category boundaries; supervisors; and polyvalence.²⁸ Narrowly defined job categories have proved a serious barrier to devolving greater autonomy to blue collar workers, and have complicated the task of introducing new technology. Who gets the programming work, for example, and how it is fitted into the existing job classification is a major issue of contention. Should it go to the technicians who have the overall knowledge, or should parts of it go to the shop floor where a quick response can be provided? The sharp distinction between the functions of conception and execution which also characterises French job classifications, places supervisors in an awkward position vis-à-vis new concepts of team work which effectively render old fashioned supervisors obsolete. The same distinction also proved an obstacle to the efficient flow of information within the cross-disciplinary areas of 'mecatronics' as engineers' work lay on one side of the divide, and that of technicians, on the other. The logic of French job classifications has also tended to impede new concepts of job rotation, as is illustrated by Maurice, Sellier and Silvestre's (1982) analysis of polyvalent workers in French and German firms. As a consequence of narrow job classifications, workers attain their skill and work speeds by experience at the same task. Those deployed to new tasks fail to reach the same speeds and so suffer a decline in earnings. As the skills are tied to the work tasks, job flexibility is penalised. In contrast, the broader job classifications of German firms enable employers to use task rotation as a means of broadening workers' skills, and incorporate it into the training process. Hence, unlike in France, polyvalency is skill enhancing and in the long run brings higher rewards.

British firms also contain strong organisational rigidities of work allocation as compared with Japan [Dore (1973)], although they are of a different nature to those found in many French firms [Gallie (1978), Eyraud (1981)]. They tend to segment jobs on an occupational basis within the enterprise with fairly

strict lines of demarcation as to which tasks fall to which occupational category. Although many of these have been softened as a result of flexibility agreements and management implemented changes, they remain influential. Many of these divisions have been attributed to union action, such as job demarcation rules. However, they also correspond to the wider economic logic of occupational and professional labour markets [Eyraud, Marsden and Silvestre (1990)]. Dividing skilled from semi-skilled work, and segmenting skilled work among different trades provides greater stability in the structure of labour demand thus creating incentives for workers to invest in occupational skills. Training for transferable skills also needs a high degree of uniformity of job vacancies across different firms, something which is given by a system of job demarcation rules. Union action may consolidate these, and sustain them after they have served their productive function, but primarily they respond to an underlying logic of skill organisation. They contrast strongly with the diffuse job boundaries of many Japanese enterprises.

Job demarcation rules have notably entered into conflict with the different job boundaries required by new technology (see §4.4 in the industrial relations paper), and with the new concepts of work organisation associated with lean production. Rigid job boundaries are an obstacle to team working, and to the devolution of certain maintenance tasks to semi-skilled workers. Indeed, they tend to perpetuate the divide between skilled and semi-skilled, and remove some of the incentives for the semi-skilled to take additional training.

Functional divisions within many French and British organisations also militate against flexible work organisation. On the basis of case studies of firms in France, the Netherlands and the United States, d'Iribarne (1989) characterises the French firms as dominated by a customary notion of non-interference in each other's work between different functional groups within the enterprise. Unwarranted interference would violate the professional 'honour' of a group by casting doubt on its competence to manage its own area of work. Such attitudes prevail both horizontally between workers in different functions, and vertically between management and the groups for which it is responsible. The logic of honour excludes routine management interference in the work of different groups unless something goes wrong. This pattern of inter-group relations was absent in the Dutch and US plants. Although open to other interpretations, d'Iribarne's observations suggest a pattern of management organisation which is very conservative. It is easy to see that if each group has its own area of competence, then it is hard to move workers between these.

Evidence of similar rigidities within British organisations which go beyond those associated with professional labour market groups are illustrated by recent research on engineers where collective bargaining is much weaker, or non-existent. In a study of engineers in Britain and Japan, Lam (1994) showed some of the barriers to job rotation existing in professional work. Whereas the Japanese firms were able to move engineers around so that they gained experience of the full product cycle from conception to customer service, the British organisations were highly segmented by function and by area of professional expertise.

Thus the dominant impression from a number of organisational level comparisons is that organisations in France and the UK are segmented internally, partly by occupational boundaries, but also by rigid intra-organisational divisions. There have been numerous attempts in both countries to break these barriers down in recent years, however, in most cases, progress would seem to have been limited.

Germany offers an interesting contrast with these two European countries. Comparisons of both France and Germany, and Britain and Germany have highlighted a tendency, in Germany, for skill to be more based on technical competence acquired through certified training than on OJT in particular job classifications or professional categories [see Maurice et al. (1982), and Jacobs et al. (1978)].²⁹ The broad-based technical competence underlying production skills has meant that rigid division of conception and execution, and the job classifications have been less prominent in Germany than in France. It has also meant that skill could be more easily based on widely recognised training rather than a form of job property rights as compared with Britain.

Moreover, it would appear that German firms have been able to build on the high level of initial vocational training in occupational skills, adding further training which is often more specific to individual firm's needs. The great majority of technicians and foremen have been promoted from the ranks of qualified skilled workers [Marry (1993)] thus providing good career opportunities for skilled blue collar workers. Although an increasing proportion of technicians also acquire recognised diplomas (44% in 1989), they do so with help from their employer [Géhin and Méhaut (1993)], so that although it is in theory transferable, such workers will normally have acquired considerable ties with the firm by the time of their promotion. The other technicians have skills which are not so widely recognised outside the enterprise. Thus, German firms seem to have been able to build ILM structures upon a system of occupational markets, giving occupationally qualified workers a strong incentive to accept internal flexibility, unlike their British counterparts.

In terms of internal flexibility within the enterprise, then, German firms would appear to be better placed than either their French or British counterparts, but what cannot be said without similar detailed comparisons between German and Japanese firms is whether these forms of flexibility are significantly more limited than in Japanese firms. There are, however, some reasons to believe they are. First, although skills are more broadly based than in France or Britain, job rotation will tend to be confined within occupational boundaries, and thus within functions, unlike in Japanese firms. Secondly, skilled workers enjoy much more of an élite status in Germany than in Japan as is illustrated by supervisory patterns. A two-plant comparison by Jürgens and Strömel (1987) illustrates that whereas in the German plant the supervisor would tend to come from the skilled group and to enjoy a large span of control, in the Japanese plant, there was a whole hierarchy of working supervisors reaching down into the work group. Their function is primarily to support on-the-job training and to lead small group activities, two important elements of work-force flexibility. Their function is not one of control.³⁰ Thirdly, although German unions have been active in developing their own proposals for team working [Turner and Auer (1984)], suggesting therefore an active dialogue with the employers on this subject, they appear to be some way behind the Japanese. Finally, the evidence of the plant level productivity comparisons from the automobile industry of Womack et al. (1990) suggest that although German plants compare well with those of other European countries, they lag behind those of Japan.

Thus, of the three European countries, Britain and France, and to a lesser extent Germany, appear to lie between the United States and Japan. They offer similar levels of employment stability to those found in Japan, but encounter similar problems of redeployment of workers to those found in the United States. Japan can afford employment stability because of internal flexibility, and the US can afford internal rigidity because of employment flexibility, but the European countries reviewed here have the worst of both worlds. In the United States, employers may maintain relatively high rates of hiring and lay-off so that unemployment durations are relatively short. In Japan, the ability to redeploy labour within the firm gives employers more flexibility with respect to their hiring policies. The somewhat rigid structures within many European firms reduces the scope for redeploying labour so that proportionately more of the adjustment burden has to fall on hiring.

This combination of employment stability and lack of internal flexibility could discourage employers from hiring new labour. First, it makes employment adjustments more difficult because it is harder to use redeployment of staff as an alternative. Secondly, if ILMs are fairly rigid, it will be harder for firms to use such practices as job rotation to enhance skills and to develop the kind of broad skills described by Koike. It therefore reduces the return employers can gain on investment in long-term jobs relative to capital. It would seem that Germany does better on this score than either Britain or France, but none of the three appears to approach Japanese levels of internal flexibility. Finally, lack of internal flexibility may reduce the ease with which temporary reductions in hours may avoid the need for job cuts. When employers' demand for labour falls, it rarely does so evenly across all categories of employee. Therefore, a uniform reduction of hours, which would share hardship among all, would be limited by the category whose hours could be cut least. Ability to redeploy staff across functions and job categories would reduce this constraint, and so help avoid temporary job reductions.

Thus on three counts, it is likely that a combination of employment stability and a lack of sufficient internal flexibility could discourage employers from hiring new labour, and so contribute to the relatively high unemployment durations noted in EU countries.

9. Management policies to combat unemployment

Much of the debate so far about the role of firms in the fight against unemployment has proceeded on the assumption that, in a competitive economy, firms are generally pursuing optimum commercial policies which should work out best in the long run for employment. If they are not, governments are unlikely to have better information on which to advise them. Thus, it has generally been assumed that subsidies of one kind or another would be required in order to compensate firms for the difference between the private cost of measures to support full employment and the public gain.

Despite its exploratory nature, this review of the potential impact of a number of employee management policies on unemployment suggests a rather different approach. It has focused on a number of management practices which firms adopt either unilaterally or as a result of negotiation with employees. It emerged that some of the most powerful reasons behind wage and hours rigidity arose from problems in these relationships, and notably from problems of lack of trust on both sides. Many of the internal labour market arguments stressed a similar problem. The problem of trust relations extends beyond those between employers and employees, and in the case of training for occupational skills, it affects the co-operation among employers needed to support training for transferable skills. Subsidies have little to contribute to the solution of such problems. In contrast, promoting the conditions for 'cooperative exchange' discussed in the industrial relations paper have a great deal to offer. It remains therefore to explore these ideas in connection with a number of policies.

It has often been argued that if wages were more flexible in response to labour market pressures, and in particular, in response to fluctuations in firms' product markets, then cyclical unemployment could be reduced. Because such lay-offs often involve loss of firm-specific skills by workers, they can easily become the prelude to entry into longer term unemployment. Because the spread of 'lean production' and 'TQM' practices is likely to strengthen firms' internal labour markets by increasing the emphasis on organisation specific 'contextual' skills, the difficulties in finding another skilled job are likely to become more serious.

Both strands of contract theory, implicit contracts and efficiency wages, highlight an important link between wage fixity and problems of mutual trust between employers and their employees. In the first case, a fixed wage was chosen because it was hard for employees to rely on information from their employers about the state of business because of the 'rewards for pessimism'. In the second case, efficiency wages, wage rigidity emerged from the incentives set up by employers to ensure that their employees did not provide sub-standard performance. Varying these incentives in relation to product market shifts then encountered problems of how the employer could convince employees of the good faith of statements about business conditions.

The root problem behind more flexible pay systems, in both cases, lies in the lack of trust between the parties. It would be utopian to suggest that distributive conflict between employers and employees could be abolished. What could be stressed, however, is the need to reduce the area of distrust surrounding such relations.

If one reflects on the problems of making credible statements in which one's own interest is involved there are a number of relevant examples. It was mentioned earlier that for reasons of lack of suitable undisputed information on firms' results, the French legislation on profit sharing had opted for profits as recorded in fiscal balance sheets. This is a very rigid method, and one which separates results from the efforts put into achieving them. However, in some countries, the giving of even commercially sensitive information to employee representatives has been long-standing. If pay is to be made more

sensitive to a firm's business conditions, then the information has to be available over a long period of time. Traditionally, trade union bargainers used to complain that management continuously only gave such information 'when the cupboard was bare'. Such action was unlikely to boost confidence. On the other hand, in many large German and Japanese firms, management continuously provide worker representatives with a good deal of important information, and consult them on important investment decisions. As such, it becomes much easier for the representatives to assess the good faith of claims made in hard times.

Wage flexibility is not a notable feature of German pay systems where other forms of flexibility are important, but it is of Japanese ones, an important source being the bonus system. Although the latter rarely drops below two thirds of its average level, a number of studies testify to its sensitivity to output performance. When one considers the opposition of employees in many firms to cuts in profit-related bonuses, the apparently widespread acceptance of the bonus system in Japan is remarkable. Although one can only speculate on the reasons for this, it is important to see it in the context of the large amount of information sharing and co-operation between Japanese management and enterprise unions that prevails in most large firms.³¹ This, combined with the expectation of long-term employment for core employees, creates an environment in which short-term concessions appear reasonable. The enterprise union can vet the information provided by management because it is provided regularly, and the long-term employment means employees stand to benefit from any future improvements.

Wage fixity may also harm the functioning of internal labour markets, and in particular, reduce the extent to which labour may be redeployed flexibly within them. The same process which makes for fixity also encourages detailed linking of work done to pay rates, and so favours a proliferation of job classifications and accompanying pay rates. Thus, it becomes harder to move staff around inside the firm without crossing job and pay classifications which, even in the absence of unions, will generate a need for extensive individual negotiations. Apart from discouraging such movements, it also reduces the extent to which job rotation can be used to broaden the skills of individual employees. Job rotation can help redeploy staff at times of economic difficulty for individual firms, reducing the need to lay people off. It was also argued earlier that flexibility of working hours depended upon the ability to redeploy staff between job positions, the reason being that firms seldom need to reduce the supply of labour uniformly across all activities. Thus, obstacles to the flexible deployment of staff within internal labour markets can cause firms to seek bigger lay-offs than would otherwise be necessary.

Policies directed towards internal labour markets are likely to increase with the rise of lean production and related management philosophies. The productivity gains associated with broader-based skills, the development of diagnostic and elementary maintenance skills among semi-skilled workers, active involvement of workers in seeking production improvements and flexible allocation of labour are such that the practice is spreading beyond the automobile industry and across countries. All of these characteristics appear to favour further development of internal labour markets, at least for those workers whose performance is critical to that of the firm. Thus, despite the growth of self-employment and fixed-contracts in some sectors, it is likely that internal labour markets will be reinforced in those sectors where employee discretion is required. This raises two problems: the likelihood that insider pressures will be enhanced, and that of reduced skill transferability.

Increased investment by firms in their workers' skills, and especially in contextual skills related to the special competencies in which the firms specialise, widens the gap between the value of employees' output and the total cost of hiring them. Negotiation, whether collective or individual, over the resulting rents raises pay above the competitive, market-clearing, equilibrium. It has also been widely argued that the same pressures cause faster pay increases, thus forcing governments to run the economy at a lower capacity.

The reduced skill transferability associated with internal labour markets also adds to unemployment. Although it might partially offset insider pressures because the risk of giving up a skilled for an unskilled job will reduce the potency of individual threats to quit, other bargaining tactics remain.

Skill transferability is partly a matter of the technical characteristics of the skills involved, but even more important are the diversity with which the same tasks are combined and applied in different firms, and lack of recognition. Occupational skills also contain an important contextual element in all workplaces, but they remain transferable because firms tend to organise their vacancies so as to accommodate such skills, and, even more important, they are recognised by both the firm and the workers' peer group.

Encouraging occupational labour markets has much to contribute. By reducing the gap between output value and total replacement costs they contribute to reducing insider bargaining power. Employers can more easily replace workers with occupational skills. Although this also reduces the cost to employees of quitting, the size of gap over which negotiation may take place will be smaller. Secondly, occupational skills may be transferred to other employers when a particular firm, needs to cut its labour force. Thus individual and social waste of skills is avoided. The contrast between skilled worker mobility in Britain and France was particularly illuminating in this respect.

If occupational markets confer these important benefits, why are they not more widespread? It was argued above (§5) that successful occupational markets depended upon co-operation among employers because of the threat posed by free-riding. Co-operation with employee representatives is also important, as was argued in the industrial relations paper (§ 3.5), because this increases the acceptability of sharing the training costs with trainees. This reduces the incentive for firms to seek a free ride, and so reduces the demands placed upon inter-employer co-operation. A highly successful example of employer-led occupational training is provided by the German apprenticeship system. There, employer organisations play a critical role in encouraging full participation by employers, and the support of unions and works councils enables an effective system of cost-sharing through low apprentice allowances. Although few can rival the strength of the German system for occupational skills, many countries have such systems in certain sectors. Even Japan has such a system in construction [Koike (1988)]. In addition, many countries have experience in promoting inter-employer co-operation in training at the local level. Therefore, there are many precedents, and many bases on which to build without having to import one country's model.

At first sight there is a tension between the development of contextual skills as encouraged by lean production and TQM, and the occupational path to reduce insider and transferability problems. Such tension is of major importance to many OECD countries because few offer the degree of employment security found in many large, and medium-sized, Japanese firms. However, the German example again offers some clues. Occupational skills can be broad-based and enable a good deal of job rotation even though it may fall short of the Japanese level. It may also be possible to build additional skills on to an occupational base. For example, the great majority of German technicians started work as blue-collar apprentices and received additional training after qualifying as skilled workers. The tension between the additional skills and occupational transferability was eased in many cases by the additional training conforming to publicly recognised standards.³² Whether such a system can be fully adapted to the demands of lean production, or develop its own equally competitive solution cannot be resolved a priori. However, encouraging co-operation among employers for the development of systems of occupational skills may be an important alternative for countries where the group structure of firms does not enable such extensive use of employee transfers to avoid redundancies as occurs in Japan. Occupational markets may also help to limit some of the insider problems inherent in strong internal labour markets, particularly where employers are unable to offer the kind of long-term employment that is characteristic of large Japanese firms. In Japan insider pressures may be moderated by the prospect of participating in the firm's long-term prosperity, but with shorter term employment prospects in the internal labour markets of many other countries, such countervailing forces appear much weaker.

Thus, the main burden of this paper has been to argue that finding ways of promoting greater co-operation both within the firm and between firms can help to reduce some of the rigidities in OECD economies which have contributed to the current high unemployment problems. Management policies cannot resolve all of the unemployment problems, but this paper does suggest a potentially fruitful area for

further work in devising policies which involve neither additional subsidies nor extensive government intervention.

Notes

1. This paper was prepared for the OECD as a part of its 'Jobs Study'. I should like to thank Mr. Scott Kelly for invaluable research assistance, and to thank Dr. A. Lam for extensive advice on Japanese management and management practices generally. I should also like to thank H. Hazama, T. Ishikawa, K. Koike, M. Miyamoto, and T. Tachibanaki, and O. Hirota and N. Kameyama of the Japan Institute of Labour for their valuable help on various points in this paper. The views expressed are those of the author.
2. An extensive body of research underlines the extremely difficult task managers have in organising production and in motivating workers, and the very limited means they have in terms of information (restricted information) and their ability to analyse the complexity of the situations they face (bounded rationality) [see for example, Simon (1957, and Williamson (1975)]. As a result they often work far removed from the optimal combinations of resources assumed by competitive theory, under conditions of 'x-inefficiency' [see Liebenstein, (1966)].
3. Wall Street Journal (25.10.90, pp. B1, B5). Cascio drew two conclusions about employee opposition: that they felt powerless to influence profits; and senior management in the fibres unit still managed to benefit from a company wide bonus scheme.
4. Data from the 1991 British Labour Force Survey reveal an intriguing phenomenon for this debate, notably high levels of unpaid overtime. In 1991, employees worked an average of 7.09 hours of paid weekly overtime, and an average of 7.32 unpaid overtime hours, [Watson (1992)]. The article did not make comparisons with earlier years.
5. Often, such job rotation takes place over several years rather than within shorter periods. This increases the importance of long-term employment so that job-rotation has the time to lead to enhanced skills.
6. Osterman (1988, Ch. 4) provides some tentative evidence of loss of morale among white collar workers in 'salaried' ILMs as a result of the recent wave of employment reductions, but systematic evidence is lacking.
7. For a fuller explanation of this argument see Marsden (1986 and 1990).
8. See for example: Noll et al. (1983) and Jones (1986).
9. Ryan's (1984) study of training for transferable skills in a US shipyard found evidence of employers doing just this. The most transferable and valuable parts of the welders' training were given only at the end when the workers were already well settled in the firm.
10. Although hard to quantify, loss of 'morale' was one of the features identified by the labour market studies of Reynolds (1951), and more recently by Bewley and Brainard (1993) as causes of a firm's inability to change its position in the local labour market pay league.
11. This was the case of both Marsden et al. (1985) on the British industry, and of Katz (1985) on that of the US. Both studies were linked to the first Future of the Automobile Programme.
12. Le Monde 19.1.93. Other articles at that period give more details of the debate. In June 1994, the chief executive of BMW announced similar productivity growth targets (Financial Times, 3.6.94).

13. The scale of such tasks varies between different types of work. In automobile production this may involve as little as being able to undertake a wide range of tayloristic-type tasks (Koiike), but in engineering, it can extend to job rotation between departments such as R&D, production and marketing [Lam (1984)].
14. This is derived from the restriction of employment in the J-firm and higher capital-labour ratios than would apply in a normal competitive firm. As a result, the worker's marginal value product is less than the average value product, and the difference can be used to pay a wage premium [Aoki (1988), p. 174].
15. This study was of course carried out before the current crisis and restructuring of IBM.
16. Use of Employee Involvement in Fortune 1000 firms in 1990:
 Low users 36%
 Average users 34%
 High users 7%
 Reward-oriented users 7%
 Total 100% N=313
 Source: Lawler et al., (1992).
17. The full set included eliminating layers of management, changing management style, improving union-management relations, move decisions to lower in the organisation, broaden skill development and increase information flow, improve management decision-making and health and safety.
18. Because of employment reductions in the activities employing many blue collar foremen, it was decided to compare the numbers of supervisory staff with those of other workers in the same broad occupational group, and whom they might normally be thought to supervise. Because NES sample is only 1%, it was decided to take the average for three years to minimise the effect of statistical error.
19. Demographic changes are controlled for by taking age-tenure profiles, but other changes in the structure of employment could affect the comparisons over time and between countries.
20. A small part of the decline in the tenure patterns of older male workers may be due to the decline in employment share of supervisors who are mostly older workers.
21. There are some theoretical alternatives, such as offering high pay to compensate for the higher cost of being dismissed. In theory, this would prove costly, and in practice, workers' norms about pay differentials may make it difficult for firms to offer high enough monetary rewards.
22. There was a wide-ranging discussion of similar notions of dualism in firms' employment policies in the late 1960s and early 1970s in the US and to a lesser extent in Europe around the notion of labour market dualism [see for example Gordon (1972), Edwards, Reich and Gordon (1973), Doeringer and Piore (1971), and for the UK, Bosanquet and Doeringer (1972), and Germany, Sengenberger (1978)]. Much of this discussion revolved around dualism in the context of mass production whereby large firms engaged in mass production offered relatively stable employment to semi-skilled workers in internal labour markets, often regulated by last-in-first-out lay-off rules. Such firms sought to capture the stable section of product markets, leaving small firms to work on the unstable sections, and to act as sub-contractors for the large firms, providing an additional buffer against market fluctuations.

23. This evidence relates primarily to the UK, and it has been suggested that tax law and employment legislation in the UK provide few incentives to differentiate employment status [Hakim (1990)]. However, recent calculations by the OECD suggest that dismissal costs are relatively high in the UK, although it also highlights the difficulty of such estimates [OECD (1993), Ch. 3 & 4].
24. Nickell and Wadhvani summarised the insider weights as follows: Insider weight, λ , in UK between 0.8 & 0.18, compared with Sweden 0.04, Norway 0.03, Finland 0, Germany 0.1, US 0.3, & Japan 0.33.
25. A more detailed econometric study by Hashimoto and Raisian (1988) comparing Japan and the US confirms the lesser sensitivity of employment to changes in output in Japan, and also highlights some important features of hours and pay variability in relation to changes in output (Table 7).
26. For example, job rotation, although spreading, is not used in all firms. In 1990, only 60% of firms with over 5,000 employees claimed to use the practice, and a further 15% said they planned to introduce it. The figures were less for smaller firms. Work transfers were widespread in large firms, but less so in smaller ones. Across all firms sizes, just over 10% practice job rotation, and about 20%, work transfers [JEPA (1992), p. 197, Ministry of Labour Employment Management Survey (1990)]. It should of course be remembered that the criterion of 'job rotation' is different in a country in which job boundaries are relatively diffuse compared with one where they are narrow.
27. It might be objected that Lincoln and Kalleberg's (1990) comparison of the US and Japanese workers does not fit this picture because Japanese workers did not report their jobs as being any broader or more complex than those of the US counterparts. This may be due to a misunderstanding of the nature of job rotation in many Japanese firms which typically takes place over a fairly long period of time. Thus the tasks undertaken by a Japanese worker at a particular point in time may not be any more varied than those of her or his US counterpart, but over time there is more movement, and in particular, more potential for redeployment.
28. A number of American writers have observed many similarities between the system of job classifications and its regulation in French firms and those in US firms [Lorenz (1992), Osterman (1988), Piore].
29. These observations have been further highlighted by a number of recent comparisons of training [Steadman and Wagner (1987, 1989), Campinos-Dubernet and Grando (1988)].
30. They do not, for example, carry out employee performance appraisals. I am grateful to Professor Hazama for pointing this out to me.
31. Concluding a review of research on the productivity effects of employee participation in decision-making, Levine and d'Andrea Tyson (1990) highlighted the interdependence of participation and related institutions such as profit sharing, long-term employment, dismissal rights, and greater equality of status and rewards.
32. See Drexel (1993). Formerly most technicians were promoted from skilled positions with experience and firm-based training, but now about half have official technician diplomas on top of their apprenticeship training.

Bibliography

- AKERLOF, G. A. (1982), "Labor contracts as a partial gift exchange". *Quarterly Journal of Economics*, 97:4, November, pp 543-569.
- ALOGOSKOUFIS, G. and MANNING, A. (1988), "Wage-setting and labour market adjustment in Europe", Japan, and the USA. CEPR Discussion Paper no. 232.
- AMBROSINI, M. (1991), "Cambiamento dell'impresa e nuove relazioni di lavoro: le politiche del management." Seminario internazionale, La partecipazione nell'impresa degli anni '90, CNEL, ENI-ISVET, Rome, April.
- AOKI, M. (1988), *Information, incentives, and bargaining in the Japanese economy*. Cambridge University Press, Cambridge.
- ATKINSON, J. and MEAGER, N. (1986), *Changing working practices: how companies achieve flexibility to meet new needs*. National Economic Development Office, London.
- AUDIT COMMISSION (1991), "Reviewing the organisation of the provincial police forces." Police Papers no. 9, Audit Commission, HMSO, London.
- BEAN, C. R. (1994), "European unemployment: a survey." *Journal of Economic Literature*, 32:2, June, pp. 573-619.
- BECKER, G. S. (1975), *Human capital: a theoretical and empirical analysis, with special reference to education*. University of Chicago Press, Chicago.
- BEHREND, H. (1964), "Price and income images and inflation." *Scottish Journal of Political Economy*, 11:2, June, pp. 85-103.
- BEHREND, H. (1966), "Price images, inflation and national incomes policy." *Scottish Journal of Political Economy*, 13:3, November, pp. 273-296.
- BERGGREN, C. (1992), *Alternatives to lean production: work organisation in the Swedish auto industry*. ILR Press, Ithaca, New York.
- BEWLEY, T. and BRAINARD, W. (1993), "A depressed labor market as explained by participants." Paper at the LSE's Centre for Economic Performance conference on the Economics and Psychology of fairness, November 1993.
- BISHOP, J. (1987), "The recognition and reward of employee performance." *Journal of Labor Economics*, 5:4, Part 2, Oct. pp. S36-S56.
- BLANCHARD, O. and SUMMERS, L. (1986), "Hysteresis and the European unemployment problem." NBER Macroeconomics Annual, pp. 15-78.
- BRECHLING, F. and O'BRIAN, P. (1967), "Short-run employment functions in manufacturing industries: an international comparison." *Review of Economics and Statistics*, 49:3, July, pp. 277-87.
- BROWN, W. and WADHWANI, S. (1990), "The economic effects of industrial relations legislation since 1979." *National Institute Economic Review*, No. 131, Feb, pp. 57-70.

- BÜCHTEMANN, C. (ed.) (1993), *Employment security and labor market behavior: interdisciplinary approaches and international evidence*. ILR Press, Ithaca.
- CALMFORS, L. and DRIFFILL, J. (1988), "Centralisation of wage bargaining. Economic Policy: a European forum." No. 6, April, pp. 14-61.
- CAMPINOS-DUBERNET, M. and GRANDO, J-M. (1988), "Formation professionnelle ouvrière: trois modèles européens." *Formation Emploi*, 22, April-June, pp. 5-29.
- CAPPELLI, P. and CROCKER-HEFTER A. (1993), "Distinctive human resources are the core competencies of firms." EQW Working paper WP18, National Center on the Educational Quality of the Workforce, University of Pennsylvania, Philadelphia.
- CAPPELLI, P. and ROGOVSKY, N. (1994) "New work systems and skill requirements." *International Labour Review*, 133:2, pp. 205-220.
- CAPPELLI, P. (1993), "Are skill requirements rising? Evidence from production and clerical jobs." *Industrial and Labor Relations Review*, 46:3, April, pp. 515-530.
- CASCIO, W. (1992), *Managing human resources: productivity, quality of work life, profits*. McGraw-Hill, New York.
- CLÉMENCEAU, P. and DE VIRVILLE, M. (1981), "Garçons et filles face à leur insertion professionnelle." *Economie et Statistique*, No. 134, juin, pp.27-42.
- COLE, R. E. (1979), *Work, mobility and participation: a comparative study of American and Japanese industry*. University of California Press, Berkeley.
- COUTROT, T. and PARAIRE, J-L. (1994), "Le développement récent des politiques de motivation des salariés." *Premières Synthèses*, 94.23, No. 47, 18 April, Ministère du Travail, de l'Emploi et de la Formation Professionnelle, Paris.
- CROZIER, M. (1963), *Le phénomène bureaucratique*. Seuil, Paris.
- D'IRIBARNE, Ph. (1989), *La logique de l'honneur: gestion des entreprises et traditions nationales*. Seuil, Paris.
- D'IRIBARNE, Ph. (1990), *Le chômage paradoxal*. Presses Universitaires de France, Paris.
- DAUBIGNEY, J.P, FIZAINE, F. and SILVESTRE, J.J. (1971), "Les différences de salaires entre entreprises." *Revue Economique*, no. 2, pp. 214-246.
- DOERINGER, P.B, and PIORE, M. J. (1971), *Internal labor markets and manpower analysis*. Heath, Lexington.
- DORE, R. (1973), *British factory - Japanese factory: the origins of diversity in industrial relations*. George Allen and Unwin, London.
- DORE, R. (1987), *Taking Japan seriously: a confucian perspective on leading economic issues*. Athlone, London.
- DREXEL, I. (1993), *Das Ende des Facharbeiteraufstiegs? Neue mittlere Bildungs- und Karrierewege in Deutschland und Frankreich: ein Vergleich*. Campus Verlag, Frankfurt.

- ECONOMIC COMMISSION FOR EUROPE, (1982), *Economic Survey of Europe in 1981*. United Nations, New York.
- EDWARDS, R., REICH, M. and GORDON, D. (eds.) (1973), *Labor market segmentation*. Heath, Lexington, Massachusetts.
- EYRAUD, F., MARSDEN, D. W. and SILVESTRE, J. J. (1990), "Internal and occupational labour markets in Britain and France." *International Labour Review*, vol 129, no. 4, pp. 501-517.
- EYRAUD, F., (1981), "Action syndicale et salaire: une comparaison France/Grande-Bretagne." Thèse pour le Doctorat ès Sciences Economiques, Université d'Aix-Marseille II.
- EYRAUD, F. (1983), "The principles of union action in the engineering industries in Great Britain and France: towards a neo-institutionalist analysis of IR." *British Journal of Industrial Relations*, Vol XXI, No. 3, Nov. 1983, pp. 358-378.
- FELDSTEIN, M.S. (1967), "Specification of the labour input in the aggregate production function." *Review of Economic Studies*, October, pp. 375-86.
- FENDER, B. (1993), "Promoting people: a strategic framework for the management and development of staff in UK universities." Committee of Vice-Chancellors and Principals of the Universities of the UK, London.
- FLANAGAN, R. J. (1993), "Hiring behavior and unemployment." In Büchtemann C. ed.
- FOULKES, F. (1980), *Personnel policies of large nonunion companies*. Prentice-Hall, Englewood Cliffs, New Jersey.
- FOULKES, F. (1988), "Employment security developments in the non-union sector." *Industrial Relations Research Association series*, Proceedings of the 41st. Annual Meeting, December 28-30, New York.
- FREYSSINET, J. (1982), *Politiques d'emploi des grands groupes français*. Presses universitaires de Grenoble, Grenoble.
- GALLIE, D. (1978), *In search of the new working class: automation and social integration within the capitalist enterprise*. Cambridge University Press, Cambridge.
- GÉHIN, J-P., and MÉHAUT, P. (1993), *Apprentissage ou formation continue? stratégies éducatives des entreprises en Allemagne et en France*. L'Hartmann, Paris.
- GLYN, A. and ROWTHORN, R. (1988), "West European unemployment: corporatism and structural change." *American Economic Review*, 78:2, May, pp. 194-199.
- GORDON, D., EDWARDS, R. and REICH, M. (1982), *Segmented work, divided workers: the historical transformation of labor in the United States*. Cambridge University Press, Cambridge.
- GUILLOTIN, Y. and GIGARD, A. (1992), "La mobilité hiérarchique des salaires en France de 1967 à 1982." *Economie et Prévision*, no. 102-103, 1/2, pp. 189-204.
- HAKIM, C. (1990), "Core and periphery in employers' workforce strategied: evidence from the 1987 ELUS survey." *Work, Employment and Society*, 4:2, June, pp. 157-188.

- HASHIMOTO, M. and RAISIAN, J. (1988), "The structure and short-run adaptability of labor markets in Japan and the United States." In Hart, R. A. (ed.) *Employment, unemployment and labor utilisation*, pp. 314-343, Unwin Hyman, London.
- HILL, S. (1991), "Why quality circles failed but total quality management might succeed." *British Journal of Industrial Relations*, 29:4, pp.541-568.
- HUNTER, L., MCGREGOR, A., MCINNES, J. and SPROULL, A. (1993), "The 'flexible firm': strategy and segmentation." *British Journal of Industrial Relations*, 31:3, September, pp. 383-408.
- HUNTER, L. (1978), "Labour shortages and manpower policy." Manpower Services Commission, HMSO, London.
- JACOBS, E., ORWELL, S., PATERSON, P. and WELTZ, F. (1978), *The approach to industrial change in Britain and Germany*. Anglo-German Foundation, London.
- JAPANESE ECONOMIC PLANNING AGENCY (JEPA) (1992), *Economic Survey of Japan, 1991-92*, Japanese Government, Tokyo.
- JONES, I. (1986), "Apprentice training costs in British manufacturing establishments: some new evidence." *British Journal of Industrial Relations*, vol. 24, no. 3, November, pp. 333-362.
- JÜRGENS, U. and STRÖMEL, H-P. (1987), "The communication structure between management and shop floor: a comparison of a Japanese and a German plant." In Trevor, M. (ed.), *The internationalisation of Japanese business: European and Japanese perspectives*. Campus, Frankfurt.
- KAHNEHAN, D., KNETSCH, J. and THALER, R. (1986), "Fairness as a constraint on profit-seeking: entitlements in the market." *American Economic Review*, Vol. 76, No. 4, September, pp. 728-741.
- KATZ, H. C. (1985), *Shifting gears: changing labor relations in the US automobile industry*. MIT Press, Cambridge, Mass.
- KOIKE, K. and INOKI, T. (eds.) (1990), *Skill formation in Japan and Southeast Asia*. University of Tokyo Press, Tokyo.
- KOIKE, K. (1988), *Understanding industrial relations in modern Japan*. Macmillan, Basingstoke.
- LAM, A. (1994), "The utilisation of human resources: a comparative study of British and Japanese engineers in the electronics industries." *Human Resource Management Journal*, Spring.
- LANG, K. and LEONARD, J.S. (1987), *Unemployment and the structure of labor markets*. Basil Blackwell, New York.
- LAWLER, E., MOHRMAN, S. and LEDFORD, G. (1992), *Employee involvement and total quality management: practices and results in Fortune 1000 companies*. Jossey-Bass, San Francisco.
- LAYARD, R., NICKELL, S. and JACKMAN, R. (1991), *Unemployment: macroeconomic performance and the labour market*. Oxford University Press, Oxford.
- LAZEAR, E. (1981), "Agency, earnings profiles, productivity, and hours restrictions." *American Economic Review*, Vol. 71, No. 4, Sept. pp. 606-620.

- LESLIE, D. and WISE, J. (1980), "The productivity of hours in UK manufacturing and production industries." *Economic Journal*, Vol. 90, No. 357, March, pp. 74-84.
- LIEBENSTEIN, H. (1966), "Allocative vs. "X-Efficiency". *American Economic Review*, Vol. LVI, no.3, June, pp. 392-416.
- LINCOLN, J. R. and KALLEBERG, A. L. (1990), *Culture, control and commitment: a study of work organisation and work attitudes in the United States and Japan*. Cambridge University Press, Cambridge.
- LINDBECK, A. and SNOWER, D. J. (1988), *The insider-outsider theory of employment and unemployment*. MIT Press, Cambridge Mass.
- LORENZ, E. (1987), "Les chantiers navals en France et en Grande-Bretagne 1890-1970." *Le Mouvement Social*, No. 138, janvier-mars, pp. 21-44.
- MACKAY, D. I., BODDY, D., BRACK, J., DIACK, J. A. and JONES, N. (1971), *Labour markets under different employment conditions*. George Allen and Unwin, London.
- MARGINSON, P., EDWARDS P. K., MARTIN, R., PURCELL, J. and SISSON, K. (1988), *Beyond the workplace: managing industrial relations in the multi-establishment enterprise*. Blackwell, Oxford.
- MARRY, C. (1993), "Peut-on parler autrement du 'modèle allemand' et du 'modèle français' de formation?" *Formation Emploi*, 44, October-December, pp. 23-28.
- MARSDEN, D. W. and RICHARDSON, R. (1994), "Performing for pay? The effects of 'merit pay' on motivation in a public service." *British Journal of Industrial Relations*, 32:2, pp. 243-262, June.
- MARSDEN, D. W. and RYAN, P. (1990), "Institutional aspects of youth employment and training policy in Britain." *British Journal of Industrial Relations*, Vol. 28, no. 3, Nov. pp. 351-370.
- MARSDEN, D. W. and RYAN, P. (1991), "Institutional aspects of youth employment and training policy: reply." *British Journal of Industrial Relations*, 29:3, September, pp. 497-505.
- MARSDEN, D. W., MORRIS, T. WILLMAN, P. and WOOD, S. (1985), *The car industry: labour relations and industrial adjustment*. Tavistock, London.
- MARSDEN, D. W. (1982), "Career Structures and Training in Internal Labour Markets in Britain and West Germany." *Manpower Studies*, No.4, Spring, pp. 10-17.
- MARSDEN, D. W. (1986), *The End of Economic Man? custom and competition in labour markets*. Wheatsheaf.
- MARSDEN, D. W. (1988), "Short-run wage flexibility and labour market adaptation in Western Europe." *Labour*, Spring, pp. 31-54.
- MAURICE, M., MANNARI, H., TAKEOKA, Y. and INOKI, T. (1988), "Des entreprises françaises et japonaises face à la mécatronique: acteurs et organisation de la dynamique industrielle." Laboratoire d'Economie et de Sociologie du Travail (CNRS), Aix-en-Provence.
- MAURICE, M., SELLIER, F. and SILVESTRE (1982), *Politique d'éducation et organisation industrielle en France et en Allemagne*. Presses Universitaires de France, Paris.

- MENDIUS, H-G., SENGENBERGER, W. et al. (1976), *Betrieb- Arbeitsmarkt- Qualifikation 1*. Aspekte Verlag, Frankfurt.
- METCALF, D. (1982), *Alternatives to unemployment: special employment measures in Britain*. Policy Studies Institute, London.
- METCALF, D. (1987), "Labour market flexibility and jobs: a survey of evidence from OECD countries with special reference to Europe." In Layard, R. and Calmfors, L. (eds.), *The fight against unemployment*, MIT Press, Cambridge, Mass.
- MILKOVITCH, G. T. and WIGDOR, A. K. (eds.) (1991), *Pay for performance: evaluating performance appraisal and merit pay*. National Academy Press, Washington D.C.
- NATIONAL BOARD FOR PRICES AND INCOMES (1970), *Overtime working*. HMSO, London.
- NICKELL, S. and WADHWANI, S. (1990), "Insider forces and wage determination." *Economic Journal*, 100:401, June, pp. 496-509.
- NICKELL, S. (1990), "Unemployment: a survey." *Economic Journal*, 100:401, June, pp. 391-439.
- NOLAN, P. and BROWN, W. (1983), "Competition and workplace wage determination." *Oxford Bulletin of Economics and Statistics*, Vol. 45, No. 3, Aug. pp. 269-287.
- NOLL, I., BEICHT, U., BÖLL, G., MALCHER, W. and WIEDERHOLD-FRITZ, S. (1983), "Nettokosten der betrieblichen Berufsausbildung." Bundesinstitut für Berufsbildung, Beuth Verlag, Berlin.
- OECD (1987), *Employment Outlook 1987*, OECD, Paris.
- OECD (1989), *Employment Outlook 1989*, OECD, Paris.
- OECD (1993), *Employment Outlook 1993*, OECD, Paris.
- OSTERMAN, P. (1982), "Employment structures within firms." *British Journal of Industrial Relations*, 20:3, November, pp. 349-361.
- OSTERMAN, P. (1987), "Choice among alternative internal labor market systems." *British Journal Industrial Relations*, 6:1, February, pp. 46-67.
- OSTERMAN, P. (1988), *Employment futures: reorganisation, dislocation, and public policy*. Oxford University Press, New York.
- PETERS, T. J. and WATERMAN, R. H. (1982), *In search of excellence: lessons from America's best-run companies*. Harper and Row, New York.
- PIORE, M. J. and SABEL, C. F. (1984), *The second industrial divide: possibilities for prosperity*. Basic Books, New York.
- POLLERT, A. (1988), "The 'flexible firm': fixation or fact?", *Work, Employment and Society*, vol.2, no. 3, pp. 281-316, September.
- QUINN MILLS, D. (1988), *The IBM Lesson*.

- REGALIA, I. and RONCHI, R. (1989), "Le relazioni industriali nelle imprese lombarde: la rilevazione del 1988." Research paper 20, IRES Lombardia, Milano.
- REYNOLDS, L. G. (1951), *The structure of labor markets*. Harper and brothers, New York.
- ROBINSON, D. (ed.) (1970), *Local labour markets and wage structures*. Gower, London.
- RYAN, P. (1984), "Job training, employment practices, and the large enterprise: the case of costly transferable skills." In Osterman, P. (ed.), *Internal Labor Markets*, MIT Press, Cambridge, Mass.
- SAKO, M. (1991), "Institutional aspects of youth employment and training policy: a comment on Marsden and Ryan." *British Journal of Industrial Relations*, 29:3, September, pp. 485-490.
- SENGENBERGER, W., LOVEMAN, G. and PIORE, M. (eds.) (1990), "The re-emergence of small enterprises: industrial restructuring in industrialised countries." International Institute for Labour Studies, ILO, Geneva.
- SENGENBERGER, W. (1978), *Die gespaltene Arbeitsmarkt: auch ein Strukturproblem des Arbeitsmarkts*. Campus Verlag, Frankfurt.
- SHEEHY, P. (1993), "Inquiry into police responsibilities and rewards." Cm 2280, HMSO, London.
- SISSON, K. (1993), "In search of HRM." *British Journal of Industrial Relations*, 31:2 June, pp. 201-210.
- SLICHTER, S. (1950), "Notes on the structure of wages." *Review of Economics and Statistics*, 32:1, February, pp. 80-91.
- SOLOW, R. (1980), "On theories of unemployment." *American Economic Review*, 70:1, March, pp. 1-11.
- SOLOW, R. M. (1990), *The labor market as a social institution*. Blackwell, Cambridge Mass.
- SORGE, A. and STREECK, W. (1988), "Industrial relations and technical change: the case for an extended perspective." In Hyman, R. and Streeck, W. (eds). *New technology and industrial relations*, Blackwell, Oxford.
- STEEDMAN, H. and WAGNER, K. (1987), "A second look at productivity, machinery and skills in Britain and Germany." *National Institute Economic Review*, No. 122, Nov. pp. 84-95.
- STEEDMAN, H. and WAGNER, K. (1989), "Productivity, machinery and skills: clothing manufacture in Britain and Germany." *National Institute Economic Review*, No. 128, May. pp. 40-57.
- STREECK, W. (1985), *Industrial relations and industrial change in the motor industry: an international view*.
- TAIRA, K. (1970), *Economic development and the labour market in Japan*. Columbia University Press, New York.
- TURNER, L. and AUER, P. (1994), "A diversity of new work organisation: human-centred, lean, and in-between." *Industrielle Beziehungen*, 1:1, pp. 38-60.
- WALTON, R. (1985), "From control to commitment in the workplace." *Harvard Business Review*, March-April, pp. 77-84.

- WATSON, G. (1992), "Hours of work in Great Britain and Europe: evidence from the UK and European labour force surveys." *Employment Gazette*, November, pp. 539-557.
- WILLIAMSON, O. E. (1975), *Markets and hierarchies: analysis and antitrust implications*. Free Press, New York.
- WOMACK, J., JONES, D. T., and ROOS, D. (1990), *The machine that changed the world*. Rawson Associates, New York.

Table 1. **Assembly plant productivity: volume producers hours/vehicle**

	J/J	J/NA	US/NA	US & J/E	E/E
Best	13.2	18.8	18.6	22.8	22.8
Weighted					
Average	16.8	20.9	24.9	35.3	35.5
Worst	25.9	25.5	30.7	57.6	55.7

J/J: Japanese owned plants in Japan
 J/NA: Japanese plants in North America
 US/NA: US owned plants in North America
 US & J/E: US and Japanese owned plants in Europe
 E/E: European owned plants in Europe

Source: Womack et al. (1990), p. 85.

Table 2. **Indicators of supplier performance**

	J/J	J/NA	US/NA	All Europe
Die change times (minutes)	7.9	21.4	114.3	12.7
Lead times for new dies (weeks)	11.1	19.3	34.5	40.0
Job classifications	2.9	3.4	9.5	5.1
Machines/worker	7.4	4.1	2.5	2.7
Inventory levels (days)	1.5	4.0	8.1	16.3
No. of JIT deliveries	7.9	1.6	1.6	0.7
Parts defects/car	0.24	NA	0.33	0.62

J/J: Japanese owned plants in Japan
 J/NA: Japanese plants in North America
 US/NA: US owned plants in North America
 US & J/E: US and Japanese owned plants in Europe
 E/E: European owned plants in Europe

Source: Womack et al. (1990), p. 157.

Table 3. **Percent of employees covered by TQM practices in 1990 (United States)**

	None	020639 40 %
Direct exposure to customers	4	24
Self-inspection	10	25
Work simplification	13	22
Cost-of-quality monitoring	18	22
Collaboration with suppliers in quality efforts	13	19
Just-in-time deliveries	24	21
Work/manufacturing cells	41	13

Based on the 77% of Fortune 1000 firms using TQM practices.

Source: Lawler et al. (1992), Tab. 16.1.

Table 4. **Percentage of foremen and supervisors in their respective occupations 1981/83 - 1988/90 (United Kingdom)**

Occupational Group	1981-83	1988-90
XII Material processing (excl. metals)		
Foremen %	7.69	5.51
XIV Processing, making, repairing (metal & electrical)		
Foremen %	7.26	5.51
XV Painting & repetitive assembling		
Foremen %	5.61	4.50
Inspectors and testers %	15.35	12.52
XVII Transport operating, materials, moving, etc.		
Foremen %	5.15	3.89
XVI Construction, mining & related		
Foremen %	10.84	10.69

Source: *New Earnings Survey*, based on sample numbers, full-time adult males.

Table 5. **Distribution of employment by current enterprise tenure 1991**

	United States	United Kingdom	France	Germany	Japan (1990)
< 1 year	28.8	18.6	15.7	12.8	9.8
	38.3	45.0	57.6	59.0	62.6

Source: OECD (1993).

Table 6. **Sensitivity of employment to changes in output**

	Output		Lagged Employment	
	1973-80	1981-87	1973-80	1981-87
United States	0.43	0.31	0.41	0.63
UK	0.19	0.14	0.77	0.78
Germany	0.19	0.16	0.85	0.80
Italy	0.02	0.08	0.38	0.87
France	0.07	0.04	0.86	0.93
Japan	0.08	0.11	0.88	0.92

Source: OECD (1989), pp. 43-44.

Table 7. **Regression coefficients on output -- Japan and the United States**

Japan		United States	
Employment (1959-83)		Employment (1958-83)	
- Non-production workers	0.43	- Total	0.54
- Production workers	0.55	- Full-time	0.71
- Regular workers	0.29	- Voluntary p-t	0.68
- Non-regular workers	0.60		
Real hourly earnings (1965-83)		Weekly hours (1957-83)	
- Non-production workers			
- Base pay	0.34*	- Total	0.20
- Bonus	1.10	- Overtime	2.22
- Production workers			
		Real hourly wage prod. (1957-83)	
- Base pay	0.39	- Overall ave.	0.17
- Bonus	1.19	- Straight time	

Note: Regression specified as year-to-year changes in log of variable on log of real output in manufacturing; * not significant.

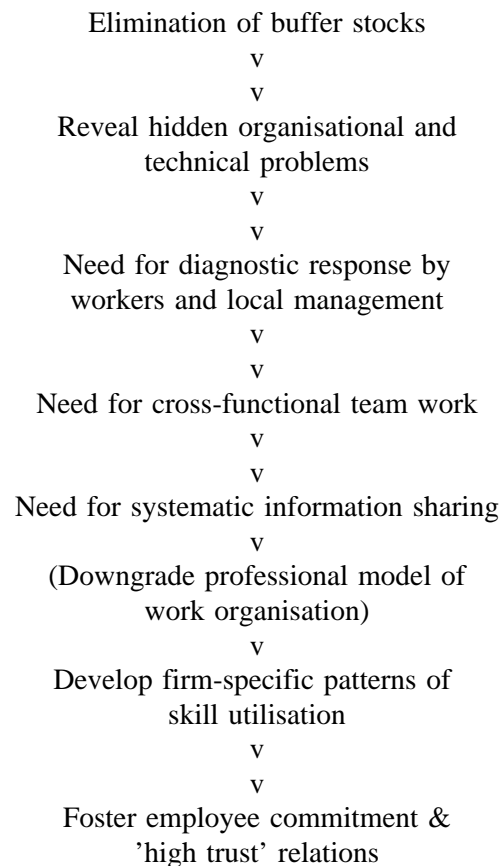
Source: Hashimoto and Raisan (1988).

Figure 1. **Typology of production systems**

	Standardised price-competitive products	Customised quality competitive products
Low volume	Specialised component production	Craft production
	1	2
	3	4
High volume	Mass production ('Fordism')	Diversified quality production

Source: Sorge and Streeck (1988).

Figure 2. **A simplified view of the logic of lean production**



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