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The Growth of Extended 'Entry Tournaments' and the Decline of Institutionalised Occupational Labour Markets in Britain

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Abstract
In recent years, British labour markets have been characterised by a decline of institutional regulation of entry routes into many occupations and internal labour markets. This paper examines this change by comparing occupational labour markets for selected occupations in which institutional regulation has remained largely intact with those in which entry has become more fluid. It argues that in the latter case, structured entry paths, which were characterised by competition at the ports of entry, have given way to extended entry tournaments in which competition is spread over a much longer time period. Using data from the New Earnings Survey panel for 1975-2001, it relates the comparatively greater growth in earnings inequality in these occupations to the emergence of extended entry tournaments. As pay at the top has risen, greater competition for entry at the bottom has held down pay and depressed conditions. It argues that many of the aspirant members of these occupations compete for entry for too long, and then become trapped as it is too late to change occupation.

Keywords: Wage Level and Structure; Wage Differentials by Skill, Training, Professional Labor Markets and Occupations
JEL Classifications: J31, J44

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1. Introduction

A great many labour markets are characterised by competitive entry. Young workers compete for entry into the firms that provide the best career opportunities, and they do so to become established in particular occupations. When labour markets are characterised by strong institutions, such competition is often concentrated at certain stages in workers' careers, and if they fail to get in, they move on to jobs in less good firms or less prestigious occupations. This chapter explores the dynamics of labour markets in which competition for entry has become prolonged over a considerable period of a person's working life, and given rise to extended entry tournaments. This can occur because the institutions that previously regulated entry have declined, or in the case of new occupations, may never have existed. Although it will be argued that such tournaments are not a general feature for all occupations, they are of interest because they appear to have developed as other more familiar labour market institutions have declined in recent decades. These extended entry tournaments may enrich our understanding of the increased income inequality within certain occupations. For example, Salverda and Mayhew (2009) argue that the decline of inclusive labour market institutions in many countries has contributed to increased pay inequality at the low-pay end. Likewise, Goos and Manning (2009), writing about job polarisation in Britain, suggest that the decline of protective labour institutions may explain why the growth of 'lousy' jobs relative to those in the middle, did not improve their relative pay during the period of their study.

The background to this study is provided by the spread of more flexible forms of economic organisation, and the expansion of project-based working which provide unfavourable ground for the traditional models of cost-sharing for training between employer and trainee. The theme was taken up by Osterman (1996) in his edited volume, 'Broken Ladders', on the decline of large organisation internal labour markets in the US, and by Arthur and Rousseau (1996) in theirs on the 'Boundaryless Firm'. Within the EU, the Supiot Report (1999) addressed a similar theme, and recommended reform of the employment relationship to cater for more transient and fluid employment relationships than in the past few decades, a theme taken up also in the discussion of 'flexicurity' (Wilthagen et al. 2007).

These changes set out from a pattern that held sway up to the mid-1980s. At that time, it was possible to characterise the labour markets for industrial skills in the leading industrial economies as falling into two broad categories: firm-based internal labour markets (ILMs), and occupational labour markets (OLMs). Whereas firms in the US, Japan and France were heavy users of the former kind, those in Britain, like their counterparts in Germany, were heavy users of occupational markets (Maurice et al. 1982; Eyraud et al. 1990; Sengenberger, 1987; Jürgens, 2003; Marsden, 1990). The years up to the late 1970s, roughly speaking, were dominated by what many have referred to as the industrial or 'Fordist' model of production, grouped around large production units, often with strongly institutionalised patterns of labour-management relations. By the early 2000s, the industrial labour markets in these countries had undergone profound transformation, and particularly in Britain, where industrial employment slumped, and new models were developing the fast-expanding services sectors. Whereas the internal and occupational labour markets of the 1970s were characterized by a high degree of institutional regulation, it is not clear that the organisation of entry and progression within some of the growing occupations of the service and the 'knowledge' economy conform to these models. In contrast to the relatively structured and well-defined ports of entry for established internal and occupational labour markets of the

industrial sector, those in many services activities appear to be more open, with more intense and prolonged competition for entry.

This chapter argues that 'entry tournaments' have prospered in some of these occupations, growing at the expense of more structured entry channels. Their growth is partly associated with the rapid growth of top pay, which serves to attract entry candidates, 'aspirants', but it is also associated with the deterioration of conditions for the lowest paid. The growth of project-based employment, with its shorter time commitments, has played a key part in opening up the competition to new aspirants. These ideas are explored by comparing the situation in service occupations in which such changes have been prevalent with those in which more established regulatory structures have been sustained.

2. The Growth of Project-Based and Transient Employment Relationships

Project-based employment is not the norm across the economy, as the stability of job tenure data demonstrate (Auer and Cazes, 2000). Nevertheless, it has grown in some sectors and has reinforced its presence in others where it was already established. It has attracted a good deal of attention in recent years because of the pressure on firms to respond more quickly to market changes, and because of the fluidity of projects as an organisational form. The development of this kind of working has been well documented in the media and IT sectors, and more recently in the higher education sector (e.g. Jones and Walsh, 1997; Saxenian, 1996; Tolbert, 1996; Heery et al., 2004). Project based working has many attractions in the creative and intellectual sectors. As Baumann (2002; 2003) has observed, the key added value arises in such cases at the stage of conception and design whereas production, and copying, is often relatively cheap. Many of the goods and services are akin to fashion goods, fast-changing, and with an emphasis on novelty. In contrast to mass production, in the media, IT and research sectors, there is a predominance of one-off or small batch production, so there are few economies of scale in employment.

The lack of economies of scale in employment has profound implications for the institutionalisation of training and labour market entry. Internal labour markets required the presence of a sufficiently large workforce so that employers may plan career progression over a reasonable period. Likewise, occupational labour markets have usually required a significant input from employers to fund the provision of training for transferable skills. This also requires a degree of scale and permanency of the organisation. Yet the pressures for greater organisational flexibility tend to militate against such organisational patterns, and so provide a less favourable environment for institutionalised patterns of labour market and occupational entry.

Two other reasons stand out for searching within these areas of employment for new patterns of labour market practices. First, the occupational pattern described for the 1970s and 1980s was predominantly based on industrial employment, yet this sector has greatly diminished in Britain, as in a number of other countries. In Britain, in the 1970s, it still accounted for about 40% of employment, but by the early 2000s, it represented less than 15%, and was still declining. It is therefore unlikely to provide indicators of new models of labour market institutions. Second, the growth of secondary and tertiary education since the 1970s means that employers can recruit people with a much higher level of general education, and with that, better developed skills for self-directed learning. This also affects the supply of workers

for such occupations, as it is less constrained by employers' investments in training than in the more institutionalised internal and occupational labour markets.

3. Growing Use of Tournaments to Regulate Labour Market and Career Transitions

The tournament metaphor applied to labour markets comprises a number of key observations which can be drawn from the literature (for example, Lazear and Rosen, 1982; Aoki, 1988; Lazear, 1998; Bognano, 2001). It emphasises the generally high level of competition among workers of similar status for access to higher status positions. These higher status positions should be fixed in number, or at least, their supply should be relatively inelastic with regard to the number of aspirants so that there is a degree of rationing of good positions. Aspirants gain access to the higher status positions based on their relative merit, a consequence of limited supply of good positions. The reward structure should be such as to attract a large enough pool of aspirants to maintain the intensity of competition, but also to compensate them for the higher risk of failure than in more structured labour market arrangements. One must consider also the consequences of failure to gain access to the high status positions. Sometimes former aspirants can move into other occupations, but when these have structured entry paths, they may find they have left it too late. Hence, one can anticipate that many will gradually slide into low status positions within their preferred occupation.

The internal and occupational labour markets that held sway for many types of work in the 1960s-1970s regulated a number of key labour market transitions. They regulated entry paths into good jobs: the 'entry ports' into firms' internal labour markets for many blue and white collar jobs; and through apprenticeship-type arrangements for access to skilled and professional occupations. Unlike in the tournament-oriented model, these structures serve to adjust the supply of entry positions roughly to that of vacancies within the occupation or work area. In the case of ILMs, Becker (1975) argued that firms will usually bear most of the cost of training because the skills are not transferable, and to minimise costs, they will seek to equate the flow of new entrants to their expected future needs, and organise job progression so that skills accumulate in an orderly way. Likewise, in occupational markets, although Becker's theory predicts that trainees should bear the cost of training because the skills are transferable, in practice, firms often share a substantial part of the cost. They can afford to do this if the skills can be made sufficiently 'sticky', for example if they are supplemented by firm-specific skills, or incentives for staying are provided (see Acemoglu and Pitschke, 1999; Stevens, 1994). They can also establish regulatory institutions to share the costs among employers and discourage free-riding. Thus, in this case too, employers have an incentive to restrict the number of training and entry positions, consequently limiting competition among aspirant members of the occupation.

Structured internal and occupational labour markets provide stable frameworks for investment by both parties. They do this by introducing a degree of closure in the sense described by Clark Kerr (1954) in his account of access to 'industrial', or firm-specific, and 'craft', or occupational markets. In both cases, closure was associated with a form of regulated transition for new entrants: by recognised ports of entry into firm internal labour markets, and by occupation-specific training positions for occupational markets. In relation to the tournament metaphor sketched above, these structures, by limiting training places, they also limit the number of aspirants competing for entry, and they often also compress the time period over which it prevails.

Both methods of organising skills and labour markets came under pressure during the 1980s and 1990s. Firm internal labour markets involve a high overhead cost, and the skills adapt only slowly to changing circumstances. Established occupational markets also take time to adapt because of the large numbers of stakeholders who have to agree the new training norms: for example, the firms that provide training places and hire from such markets, and the workers who invest in occupational skills. Changing technology has put pressure on both forms, as has the increased weight of national and international competition. This has made it more risky for firms both to invest in building up and maintaining their internal labour markets, and to commit long term to the skill structures of occupational markets.

If one strips away these frameworks, it becomes possible for more aspirants to compete for entry into the occupation, and to do so over a longer period of time. During this period, they need to obtain work in order to acquire the necessary skills and develop their network contacts and reputation. The fluidity of employment relationships reduces the incentive for employers to provide systematic training, and so reduces one of the brakes on excess supply that characterises the more structured labour markets. Thus, whereas organised firm-ILMs, apprenticeships, and established professional training, generate a narrow range of entry paths, these more open competitions for occupational entry will be associated with a diversity of career tracks, such as those illustrated in Figure 1.

The figure provides a stylised representation of the entry process into an occupation where there is little pre-established structure in the entry segment, and aspirants have to find work assignments, represented by the small boxes, that bring them relevant experience, network contacts and help them build up their career portfolios and reputations. The three tracks illustrate different ways in which a given cohort of aspirants may progress, or not, towards gaining entry to the established segment of the occupation. Unlike in organisational careers where jobs are often organised into different career tracks which may be known in broad terms *ex ante*, in this example, there are few such guide posts. Workers know about their previous and present jobs or assignments *ex post*, but can only surmise where they are leading. The figure illustrates the idea that the tracks are not linearly upward, but contain considerable upwards and downwards variation so that there is always a good deal of uncertainty as to which track one is on, and therefore, about one's likely success in gaining access to the established part of an occupation, denoted by crossing the fuzzy grey line in Figure 1. This may occur by passing qualifications, but it may also be expressed by means of peer group recognition. A notable feature of entry in this example is that it remains open for a prolonged period of a person's working life. This contrasts with highly structured occupational and internal labour markets where there is usually a clear point at which the aspirant is either in or out. In these more open systems, there is also a risk that aspirants continue to compete for entry long after their opportunities in other occupations have started to close down. Thus, there is a likelihood that some will become trapped in the 'slow stream', and have to make do with precarious employment conditions and low pay because it has become too late to enter more structured occupations.

Given that some occupations provide institutionalised and predictable channels, why should aspirant employees compete to enter these occupations which offer only unstructured entry transitions? In particular why should anyone take the risk of becoming stuck on the slow track? In some creative occupations, hedonic motivation can provide a strong pull: 'art for art's sake'. High financial rewards may also provide a risk premium to compensate for the increased risk of failure to gain entry. As will be seen shortly, the rewards at the top of some

of these organisations have risen considerably in recent years. Those same rewards may also compensate them for the cost of acquiring skills, experience and contacts.

The looseness of institutional structures regulating entry may also contribute to aspirants becoming trapped. First, some aspirants may just be dazzled by the prizes, and like gamblers, just keep on placing more bets in the hope that one day their luck will change, and they will get that elusive break. Secondly, because the tracks shown do not correspond to well-organised career paths, it is difficult for aspirants to know *ex ante* on which track they are currently located. The tracks are observed *ex post*. The random element reflected in the fluctuating occupational status of successive assignments on all tracks makes reliable identification more difficult. For example, does the fourth assignment on the slow track mean that one is actually on the middle track, or is it just a piece of temporary good fortune? This means that by the time one realises one is condemned to life on the slow track, it may be too late to move to other occupations. One is trapped.

A third factor contributing to locking people in relates to the size of the stake associated with each assignment. Because one moves through many assignments rather than entering upon a single training programme, the financial stake at risk at each step is correspondingly smaller. Yet the eventual prize is unchanged. Thus, if aspirants write-off their past investments, and focus only the current one, then many will persist in taking on new assignments even though a hard look at their past experience should tell them they are on the slow track. This process too would tend to encourage aspirants to continue to seek assignments to build up their portfolios until they become trapped.

The final piece of the jigsaw concerns the advantages for firms. They benefit from their reduced training costs when employees bear more of the cost of gaining experience, and they also benefit from employees' apparent willingness to remain in the occupation's outer orbit long after their prospects of entry have declined. Such savings are likely to offset the pay cost of the small minority at the top. Such advantages for employers might apply across many occupations, but there is a further incentive advantage, related to the quality of performance, and which makes such tournaments more appropriate to some occupations than others: the subject of the next section.

The potential client benefits of tournaments in the less structured occupations

There is a special problem of quality assurance in occupations in which more transient project-based employment has flourished. By the time quality problems have become apparent, the project may have been long-completed and the team members dispersed. This contrast with organisations that provide long-term employment, in which career-pay and promotion provide incentives for long-term performance and for good quality work when that quality is not immediately apparent to the employer. It also contrasts with long-established professional work in well-structured occupations. They often have their own licensing arrangements and disciplinary bodies, and their work is also often integrated into long-term positions in organisations, such as medical occupations employed by the National Health Service. In the more transient employment relationships of project-based work, these mechanisms are often weak or lacking. Other incentive devices are needed. A notable feature of project-based work is that it involves intensive work at the stage of conception, but its reproduction is often low-cost and involves the work of other categories of employees (Baumann, 2003). A piece of investigative journalism, an advertising video, a research project or a new piece of software all require major initial investments, but unlike

manufactured goods or care services, reproduction and distribution are very cheap, and the services of those who carried out the project are no longer required.

In a nutshell, the argument is that when a greater role for project-based employment is combined with serious short-term quality of performance concerns, then employers can benefit by restricting the number of key positions, and paying a higher price, even though there may be many other equally competent people available to fill them. Apart from competition to enter, restricting the number and raising the reward increases the penalty for individuals who let their performance slip once in one of the top jobs. In effect, the top jobs become akin to 'positional goods' part of whose benefit derives from their restricted supply (Hirsch, 1977).

Journalism, the media, academia, software and consulting are interesting because they provide illustrations of occupations in which project-based employment and entry tournaments have come to play an increased role, compared with other more structured occupations such as engineering, law enforcement, and health care professions. The top 'prizes' in the first kind of occupations are restricted and often highly visible. The Sutton Trust's (2006) report on journalism highlighted the growing polarisation within that occupation. Top journalists can get very high pay, and the older institutionalised entry paths have been allowed to decay. The positional good dimension of top jobs can be explained as follows. All journalists depend on sources for their stories, and news which is regularly of great interest, such as in politics, depends on access to a small number of key sources. Senior politicians and government ministers have their circles of trusted journalists to whom they may provide important but unattributed information, e.g. 'sources close the Prime Minister', and confidential briefings so that journalists have the necessary background to interpret statements and events (The Guardian 19.6.06). Such confidences depend on knowing whom one can trust, and the need for trust restricts the number of people who can enter into these relationships. Indeed, not only is a degree of intimacy a product of the need for trust, but it also provides a potential sanction. Journalists who betray that trust know that they will be excluded from the circle.

At the opposite end, the crowding effect at entry was highlighted by the Sutton Trust, which noted that apart from a limited number of graduate internships: 'The only openings on national dailies are provided by freelance shifts, where money is poor and there is no job security. A lucky few will secure that coveted permanent post', Sutton Trust (2006: 12). It observed that similar conditions applied to entry into television journalism. The same report also noted that in earlier decades, newspapers and the broadcast media had provided more systematic entry routes into the occupation, and that it had been possible for a former generation of newspaper editors to rise from non-journalist positions on their newspapers to prestigious editorships (The Guardian 19.6.06). Client organisations may also benefit from the low pay and flexible employment of the aspirant members as this releases resources which can contribute, in part, to the funding of higher pay at the top.

In the media sector also there are mechanisms that tend to focus potential rewards on a small number of key activities. Although new technology makes it easy to post work on the internet, as on 'YouTube', getting a creative work to the right audience, and one that is large enough to cover production costs, is another matter. Major creative works of a kind that can gain a wide audience and generate large revenues are necessarily small in number so that recruitment of top artists by the production companies is critical. Of course, many other artists can earn a living in less high profile activities, in smaller specialist films, or in

advertising videos for example, but their incomes will be closer to the average. High rewards also bring sanctions: a string of disappointing performances will force the former 'star' to return to secondary roles. The British Film Institute has conducted a number of surveys on employment and careers in the British film industry. These highlight the precarious employment of new entrants, and the difficult transition to becoming a permanent and recognised member of the sector. It also highlights, in common with journalism, the very low starting rates of pay, and the frequent interruptions to income in between projects (Pettigrew et al. 1997). Similar processes of occupational entry have been observed in the US, in Hollywood, by Jones and Walsh (1997).

In the academic world, where career paths were once highly institutionalised, one may observe the emergence of similar processes, albeit on a more limited scale. For example, funding of major research projects has become more focused on an elite group of research universities. A recent study by Lam (2003; 2005) highlights how major companies that want to conduct joint research with universities target 'star' scientists. Such targeting serves a number of functions. The companies know that the research universities themselves provide a degree of peer group quality control through selection and promotion decisions at which they would not be competent. The sums of money are big enough for the scientists to maintain teams of researchers to work on key areas of commercially relevant basic research, but by their size, they also represent a concentration of resources. Finally, as in the journalist example, concentration provides sanctions: there are competitor universities and departments that would undertake the work if the chosen team fails to deliver, or is careless with commercially sensitive information. The 'prizes' for top academic scientists may be financially less attractive than in many activities, but as alternative incentives there are scientific prestige and provision of the research resources.

A similar process may be at work in university teaching with the growth of a global market for international students. Leading universities attract international students by having famous professors, or at least those who are well-known in the universities sending students for further study. Ranking of universities in international league tables also tends to highlight the most successful, raising their visibility, and enabling them to attract the most able students. Competition for entry means that whatever the quality of the education actually provided, students' success in gaining entry is a key labour market signal for their future careers. Alumni networks may reinforce this particularly if they are active in job markets. The Parisian Grandes Écoles provide a similar illustration in which reputation enables these schools to cream off the best applicants. In such cases, the fact that potential students and their families can only digest limited information about university quality favours the small group with the highest reputation. It therefore becomes essential for individual universities to remain among the leading group if they are to continue to succeed in recruitment, and this puts pressure on the universities to move towards a 'star system' for recruitment.

At the opposite end of the academic labour market, in Britain, many universities, and particularly the major research universities, now have very high levels of temporary employment among their academic staff: two thirds of those at Cambridge and Oxford, and just over half at LSE, figures that correlate strongly with the university research ratings.[1]

[1] These figures were extracted from the university performance league tables for 2000, published by the Times Higher Education Supplement in its issue of 14.4.2000. The median percentage of non-permanent staff across Britain's 97 universities was about 40%. Overall, there is a correlation of 0.77 between university research ratings in the national Research Assessment Exercise and the percentage of non-permanent staff. The RAE is

Many of these workers are engaged on research projects, as research assistants, post-docs, but also teaching assistants who 'free up' the research time of permanent faculty. However, their numbers far surpass what can be absorbed into established university careers.

In the software and management consulting occupations similar processes appear to be at work. The quality of creative work is hard to assess in advance, and client organisations rely heavily on their contractors to provide top quality performance. If a client organisation hires the services of a top software or management consultant, then it knows that its reputation is at stake if poor quality work is provided. Thus, for sensitive or important projects, the client has good reason to opt for the supplier with the strongest reputation. A system of enhanced rewards for top performers in such circumstances can be functional.

Thus, in all of these examples, even though the entry tournaments may not have emerged by design, they would appear to fulfil a positive economic function for the organisations using them. In the less structured careers and looser organisational attachments of project based employment, the reputations of individuals and teams for the quality of their work shape their future prospects. By focusing resources on those with the top reputations, client organisations gain additional leverage should performance fall below expectation. Thus the top journalist who betrays confidences of influential politicians, the top academic scientist or the leading software engineer who mismanages a major project for a client organisation will suffer a loss of reputation and access to future collaborations.

The contrast with the more structured occupations is striking. These groups were chosen because they continue to benefit from strongly institutionalised labour markets: in the police case from a strong internal labour market, and in case of engineers, legal and health-care professionals, from strong occupational markets. Engineers, solicitors and health-care professions have a strongly entrenched form of occupational licensing which establishes a well-codified system of entry into these occupations. The police service too has a well-codified system of rules governing entry into its internal labour market. The partial exception to this picture is that of medical doctors. The LFS gives the picture for all medical practitioners, but the NES earnings data relate only to employees, and thus cover mostly hospital doctors, as opposed to general practitioners who are self-employed. Although the rules are clear concerning the work of fully qualified doctors, a substantial proportion of those working in hospitals are 'aspirant' doctors who are still undergoing their training. These are the so-called 'junior doctors' who can be pressed into working extremely long hours because they are in a weak bargaining position prior to acquiring full professional status. However, excess supply in this case is limited because the employer pays a large share of the direct costs of training, although it may arise temporarily from inadequate planning.

It is also questionable, in these occupations, whether tournaments at the top would play the same kind of beneficial role outlined for those in group A. The health care and police services are organised to provide a good quality of service to all citizens equally. This is strong contrast to the drug company seeking to engage with top scientists in order to develop new market-beating compounds, or to film companies seeking to make a blockbuster film. In these cases there are big rewards for the groups which can develop a superior product compared with their competitors.

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one measure of success in the competition for research funds, and it also serves as a quality index in the search to attract overseas students.

4. Employment Conditions in 'Tournament' and in 'Structured' Occupations

One may explore these issues more systematically by comparing two groups of occupations: Group A, in which entry channels have become more open and careers have become less clearly defined, and Group B, that have by and large retained their established career structures and entry channels. Group A reflects the conditions outlined in Figure 1, whereas Group B represents those where structured internal and occupational labour markets have proved more resilient. A crude indicator of difference and change can be found in the evolving employment status of those in such occupations, and notably the growth in self-employment as this implies a radical change in the relationship between individual workers and the organisations hiring their services (Table 1). As the self-employed, almost by definition, do not have organisation-based careers, it also implies a change in the way in which the occupation is organised. Instead of promotion, people have to work on building reputation, peer recognition, and their ability to command improved conditions in the market place (Tolbert, 1996). Another indicator of changed career practices can be found in the share of part-time employees (Table 2). Generally, those in part-time positions find it difficult to stay on the career ladder. Among the Group A occupations, the growth of part-time employment has generally been stronger than for Group B, the big exception being nurses for whom the career hierarchy is in any case rather flat.

The practice of maintaining employees' pay during short absences from work has long been associated with career employment. In the mid-twentieth century, this was one of the key differences between the employment conditions of 'hourly paid' blue collar workers, and 'weekly paid' white collar workers. Thus an erosion of this principle in qualified white collar occupations could signal a major change of status for certain groups within them. Across the economy as a whole, the practice of paying employees during short absences spread, but it decreased in a number of group A the occupations, mostly notably among journalists, higher education academics, and medical practitioners.

Thus, in the Group A occupations, there appears to have been a significant shift in the nature of career employment, and consequently an erosion of the entry paths that used to guide aspirant members into them. In contrast, the occupations in Group B appear to have maintained their established internal labour markets, as in the case of the police, or the established structures for occupation and entry in the other cases.

5. Changing Opportunity Structure in the 'Tournament' and 'Structured' Occupations

A further piece of the jigsaw is provided by earnings data for employees in these occupations over the period. If a shift towards the entry tournament model sketched out above captures key elements of change in the occupations in Group A, then one would expect the prospect of increased earnings at the top to go hand in hand with greater uncertainty about entry at the bottom. Indeed, according to tournament theory, high potential rewards for the successful are required to encourage sufficient numbers of new aspirants to compete to enter the occupation and progress within it. Thus one would expect the earnings of the aspirants to drift behind those at the top. In contrast, in the occupations where entry is more structured, one would expect the institutions regulating entry to generate a greater degree of solidarity among

members of the occupation. Although the NES provides data for employees only, it is likely that there are strong spill-over effects between employee and self-employed earnings as there is a certain amount of mobility between these two statuses.

The overall pay picture for Britain between 1975 and 2001 has been one of steadily rising pay inequalities, with those on the highest levels of pay pulling away most from the rest of the employed population (Belfield, 2006). The charts in Figure 2 summarise the changes for the individual occupations under consideration and for all employees across the whole economy. They show changes in real weekly earnings at selected percentiles, p10, p90, and p95, between 1975 and 2001, deflated by the 2001 retail price index. Weekly earnings were chosen for the charts because they reflect better the earnings attached to the jobs on offer in these occupations, and notably capture important elements of the pay associated with the kind of part-time and short-term jobs that aspirants often accept in order to get a foot on the ladder. Table 3 summarises the same data, showing changes between the three-yearly averages at either end of the period, but does so for hourly earnings as well, and also with and without the effects of pay loss from short absences, another indicator of precarious work conditions. The charts also compare weekly pay with and without loss of pay from absence for the lowest decile.

The growing gap in absolute real earnings between p95 and p10 is a feature of all the less structured occupations of Group A, whether we consider weekly or hourly earnings, and whether or not we include the effect of pay loss from short absences. The one exception in this group concerns hourly pay not affected by absence among academics. In contrast, among the more structured occupations of Group B, on the whole, those at the bottom decile have narrowed the gap in real pay with those on the 95th percentile. The main exception appears to have been for weekly pay including pay loss from short absences among salaried doctors and nurses. In the first case, there has been a rise in the share whose pay was affected by absence, and in that of nurses, there has been a large increase in part-time working, and thus in both cases, probably some erosion of their occupational status since the 1970s.

Thus the overall picture is one of less structured careers and increased exposure to economic uncertainty in the first set of occupations, and of the maintenance of established employment structures and protections in the second group. Accompanying this divergence of employment statuses, there have been parallel changes in earnings inequalities. In the first set of occupations, consistently with the tournament metaphor, there has been a widening of pay inequality, especially with the very top earners surging ahead, and the lowest earners facing stagnating real earnings and increased uncertainty. An analysis of the composition of the lowest paid 20 percent shows that there has also been a tendency for the part-time working and exposure to loss of pay to concentrate in the older age groups in the bottom 20 percent of earners in these occupations, a symptom of being trapped in that position[2]. In contrast, the Group B occupations, in which employment and career structures have been maintained, one can see that earnings inequalities have mostly fallen somewhat.

An important feature of the argument about tournament occupations concerns the degree to which older workers may become trapped in the low paying segment. The NESPD provides some tentative evidence on this. The panel element of the NES provides a set of overlapping career snapshots as some employees remain in the sample over several years. Table 4 presents a set of pooled logit regressions for the selected occupations showing the predictors

[2] Not shown in this article, but available from the author.

of an individual employee's being in the bottom or the top quintile range (20%) of weekly earnings for their occupation in a given year. The results for the individual occupations are in the appendix. To capture the career element, lagged earnings are included for the previous three years. Three was chosen as a compromise between length of career information and loss of observations from attrition. There is considerable inertia in both the bottom and top 20% in both sets of occupations, as shown by the strongly positive coefficients for the employee's presence in the bottom or top 20% in the preceding years. As expected, being part-time, having pay affected by absence, and being female increase the chance of being in the bottom 20% of earners. The number of yearly observations for an individual is likely to reflect employment stability, and so to correlate with higher pay.

Behind the two groups of occupations lies a contrast between the loosely structured careers on Group A occupations and the organisationally-based careers of Group B occupations. As might be expected, career progression in the more structured Group B occupations would carry the lower paid out of the bottom 20%, reflected in the negative relationship between being aged over 40 and low pay. In contrast, in the more loosely structured occupations of Group A, being aged over 40 increases the likelihood of being in the bottom 20%: consistent with the idea of many older workers being trapped. Job changing reveals a similar contrast. The frequency of recent job changes helps those in the loosely structured Group A occupations reach the top paid 20%, but it has the opposite effect in the more structured Group B occupations. For these, it seems that frequent job-changing means exclusion from career progression. Similarly, being newly hired in the loosely structured occupations has little significant effect on pay, whereas in the more structured Group B occupations, the increased likelihood of being low paid is consistent with the practice of hiring into lower paid entry positions, and at the bottom of career ladders.

The interaction between job changing and being aged over 40 is also revealing. Whereas frequent job changes benefit those in the loosely structured Group A occupations overall, for those aged over 40, the relationship switches: frequent job changes for older workers signal exclusion from the top 20% of earners. Likewise, whereas being a new hire is associated with a reduced chance of being low paid overall, for new hires aged over 40, the chance of being low paid is increased. Being a new hire aged over 40 is also associated with lower pay in the more structured occupations, but to a markedly lesser degree.

Thus, although there is considerable pay inertia among both groups of occupations as those in the bottom and top 20% of earnings tend to stay put from year to year, the effects of the two types of career systems are revealed by the relationships with age and job changing.

6. Conclusions

Before concluding, it is worth considering some alternative interpretations to that favoured in this paper. Skill biased technical change has been a powerful and relatively successful argument to explain the growing pay inequality in labour markets across a number of countries during the period since the 1970s (Autor and Levy, 2003). However, the effects of technology on jobs are fairly widely diffused, and do not seem to explain the different experience of the two sets of occupations considered in this paper. Likewise, increased educational supply could generate a crowding effect at the bottom of the labour market and help to explain why workers on the bottom decile in general have done badly. However, it does not explain why they should have done relatively well in the more structured

occupations. The job polarisation thesis of Goos and Manning (2009) can explain many of the features observed in this chapter, but would also need to explain the differences between the two groups of occupations. However, there is not obvious reason why jobs in the middle of the Group A occupations should have become more routinised than those in the middle of Group B. The thesis advanced in this chapter is not necessarily in contradiction with any of these models, and could well be complementary. Likewise, in relation to Salverda's and Mayhew's (2009) argument about the influence of inclusive industrial relations, the present chapter could be considered to highlight an additional institutional mechanism to those they emphasise such as encompassing collective agreements and extension clauses.

The focus of this paper has been on the changing pattern of labour market careers in selected occupations and its effect on segmentation in Britain since the 1970s. In that decade, it was possible to describe Britain as one of the countries in Europe, along with Germany, in which occupational structures dominated employment compared with the importance of firm internal labour markets in countries such as France and Italy. The massive decline of the industrial sector in Britain makes it a less promising area in which to search for newly emerging patterns of labour market segmentation. Consequently, the this chapter has focused on service activities, and contrasting a selection of those in which less institutionally structured project-based forms of employment have developed with a similar selection of those in which stronger patterns of institutional regulation have remained intact. The special conditions that favour the first group mean that it is unlikely to become a general model for the whole economy. Nevertheless, because its organisation responds to growing needs for flexible patterns of production and service provision, and because it is adapted to many aspects of creative activities for which there is a strong demand, one can expect it to grow in these areas.

It was argued that the actors in these sectors still have to deal with such issues as skill acquisition and flows of suitable job applicants, but because of the more transient nature of employment, and of many employing organisations, it was less suited to traditional methods of training. It lacks the stability for the provision of internal labour market training, and it also lacks some of the foundations for apprentice-type training for occupational markets. It was argued that this discourages employers from funding training for transferable skills, and that therefore more of the burden falls onto the aspirant members of the occupation. Employees have to acquire these skills mostly in employment, working on project assignments, and build up their portfolios as they move from one assignment to another. The relatively open entry at this stage brings about a large number of aspirants competing for assignments, to get their foot in the door. Employers can make this work by allowing the pay of the top earners to drift upwards in order to increase the potential rewards for successful transition into the occupation.

A rough and ready test of this hypothesis was provided by comparing the earnings patterns within broad occupations, some likely to include these tournament-style transitions and some with more traditional ones. It was found that the pay of those on the tenth percentile fared worse in the former than in the latter group of occupations. Clearly, at this stage of the work, these results are suggestive, and more work needs to be done on related aspects of the tournament entry model. For example, Landers et al. (1996) looking at entry into US professions observed that willingness to work very long hours was a part of the process. Likewise, other indicators of precarious employment among the aspirant entrants need to be explored, such as job durations. It is also necessary to explore further the filtering process between those on the fast and medium tracks in Figure 1 and those on the slow track who

never manage the transition. There is plenty of anecdotal evidence in the occupations considered that after a certain age, a good proportion of those on the 'slow track' drift into a sort of secondary labour market within these occupations, working occasionally and for low pay and little security. More work also needs to be done in order to assess how far the entry tournament processes contribute to our understanding of other changes in labour markets over the period.

Although one can understand why such tournament style transitions might develop in these occupations, there is an important question as to whether it is desirable for society as a whole. Apart from the question about desirable levels of overall inequality, there is a related question as to the cost of access. One finding of the Sutton Trust was that over recent decades, the growth of entry by long periods of precarious employment had made journalism into a much more elitist occupation. Aspiring entrants needed the support of their families while they worked on low and uncertain pay, so that family capital had become a greater determinant of success. This was visible in the increased proportion of top journalists from independent, fee-paying, schools and from elite universities. Likewise, university-based scientific research requires large numbers of researchers on doctoral student grants and on post-doctoral schemes, all of which involve low levels of income. The ability to sustain this for long periods requires either that family life is postponed, or that families provide a measure of financial support. Students from low-income households who have already built up debts from their undergraduate studies would find such burdens extremely hard to bear.

The other less desirable face of these developments concerns those who get caught in the secondary segment within their chosen occupation. The link between being aged over 40, job changing and low pay in the loosely structured occupations, shown in Table 4, highlights the problem of those who are potentially trapped on low incomes and a succession of temporary assignments. A 'bohemian' lifestyle may be attractive in one's twenties, but it becomes less so when raising a family, or contemplating old age without an adequate pension.

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Appendix on Sources and Definitions

Note on sources and definitions: the New Earnings Survey is based on a one percent sample of employees across all economic sectors of Great Britain, and is carried out by the Office for National Statistics (ONS). The sample is based on national insurance numbers, and returns by employers. Earnings relate to cash earnings before tax and other deductions, and relate to a specific pay period in April each year, and include a proportionate amount of regularly paid bonuses. The tables and charts in this paper were calculated from NES panel data (NESPD) which comprises a subset of variables for the period 1975-2001. From 2001, the NES was superseded by the Annual Statistics on Hours and Earnings, ASHE. The panel element of the data set arises because every year returns are requested for about 75% of the previous year's sample.

The Labour Force Survey collects information from households and therefore covers a wider range of employment statuses, and notably the self-employed, who are excluded from the NES. The LFS does not include data on self-employed earnings for the years of this study.

A major problem for the study of occupations over the period was the change from the 'KOS' classification system to the 'SOC1990' system from 1991 onwards. For the LFS and the NES a visual matching of the closest occupations was made by the author using detailed information on the categories used in the two classifications. Because of the break, several of the tables show results for the period just before and just after the changeover. For the NES, it was possible also to use the panel element in the survey to assist with matching between the two classifications, and thus use the information on the occupational affiliation of the same individuals before and after the changeover. I am grateful to Richard Belfield for making available his back-mapping of the SOC1990 onto the earlier years for this study. As both methods have their drawbacks, some tables in this paper show results using both methods.

Occupations used (SOC 1990):
Group A:
Journalists: soc1990==380
Media excluding journalists: soc1990>=381 & soc1990<=386
HE Academics soc1990==230
Mgt consultants: soc1990==253
Software engineers: soc1990==214

Group B:
Engineers: soc1990>=210 & soc1990<214 | soc1990>214 soc1990<219
Legal professionals: (soc1990>=240 & soc1990<=242)
Police (all ranks): soc1990==152 | soc1990==610
Medical practitioners: soc1990==220
Nurses & midwives: (soc1990>=340 & soc1990<=341)

Tables and Charts

Table 1: Changing employment status within selected occupations 1975-2000: Self employed as % of total employment in occupation

	1975	1981	1990	1991	1995	2000 Q4	change 75-90/ 91-00
Group A occupations							
Authors, writers & journalists	22.7	23.4	37.1	42.4	42.6	43.5	+/+
Media excl journalists & sports	28.2	39.3	47.7	45.4	50.7	48.8	+/+
Higher education academics	0.0	0.0	0.0	0.8	2.7	4.9	=/+
Software engineers	1.1	3.5	6.5	18.3	24.1	20.1	+/+
Management consultants	na	30.4	47.8	34.4	36.9	29.5	+/-
Group B Occupations							
Engineers (excl software)	6.3	6.9	11.8	11.5	13.1	10.6	+/=
Legal professionals (j, b & s)	51.5	52.1	50.8	50.8	39.9	39.7	=/-
Police officers all grades	0.2	0.0	0.0	0.5	0.0	0.3	=/=
Medical practitioners	28.8	32.9	34.8	40.1	35.3	34.6	+/-
Nurses and midwives	0.4	0.8	1.4	1.8	0.9	0.9	=/=
All occupations	8.2	9.6	13.5	13.1	13.7	12.1	+/=

*1981-2000 Q4. Note change of occupational classification 1990-1991. For this reason figures are shown for both 1990 and 1991, and the column showing change shows it separately for both periods.
Source: Labour Force Survey.

Table 2: Part-time and pay affected by absence in selected occupations 1975-2001

Panel a. Employees working part-time by occupation
(3-year averages: % of total numbers in the occupation)

Occupation	1975-7	1988-90	1991-93	1999-01	Change
Group A occupations					
Authors, writers & journalists	2.7	5.0	9.6	10.6	+/+
Media excl journalists & sports	5.9	6.5	7.8	9.4	+/+
Higher education academics	6.7	12.0	16.5	24.7	+/+
Software engineers	0.8	1.5	1.1	3.4	=/+
Management consultants	na	Na	5.6	5.1	/=
Group B occupations					
Engineers (excl software)	0.3	0.4	0.7	1.8	=/=
Legal professionals	4.4	7.0	6.7	7.7	+/=
Police officers all grades	0.1	0.1	0.2	1.1	=/=
Medical practitioners	25.3	29.0	28.0	25.6	+/-
Nurses and midwives	24.3	32.9	35.5	41.9	+/+
All occupations	14.2	18.4	20.6	25.1	+/+

Panel b. Employees whose pay was affected by absence in selected occupations (3-year averages: % of total numbers in the occupation)

Occupation	1975-7	1988-90	1991-93	1999-01	Change
Group A occupations					
Authors, writers & journalists	2.3	1.8	4.3	4.9	=/+
Media excl journalists & sports	4.1	4.7	5.6	3.1	-/-
Higher education academics	2.3	4.2	7.6	10.0	+/+
Software engineers	2.7	2.9	3.7	2.5	=/-
Management consultants	na	Na	4.9	2.6	/-
Group B occupations					
Engineers (excl software)	3.5	3.5	3.4	2.3	=/-
Legal professionals	2.0	3.2	4.2	2.8	=/-
Police officers all grades	2.3	1.5	1.4	1.5	-/=
Medical practitioners	5.3	9.5	10.9	8.4	+/-
Nurses and midwives	8.4	10.6	10.4	9.6	+/=
All occupations	10.1	9.2	8.8	7.1	-/-

Source: NESPD. Note change of occupational classification 1990-1991. Legal professionals include judges, barristers and solicitors.

Table 3. Summary of growth in real weekly and hourly earnings at selected percentiles 1975-2001
Change on average between three-year periods 1975-77 and 1999-2001, full and part-time combined. 'Pnaa' excluding, and 'Paa', including those whose pay was affected by absence. Constant 2001 prices.

Occupation	P10	P95	gap	P10	P95	gap	P10	P95	gap	P10	P95	gap
	Pnaa weekly	Pnaa weekly		Pnaa hourly	Pnaa hourly		Paa weekly	Paa weekly		Paa hourly	Paa hourly	
Group A occupations												
Authors, writers & journalists	146.5	194.9	++	161.5	206.9	++	128.4	180.5	++	144.1	201.2	++
Media excl jnls & sports	166.1	169.7	+	160.2	175.1	+	145.9	161.8	+	147.7	165.4	+
Higher education academics	139.7	152.2	+	160.2	142.2	-	19.5	137.4	++	139.7	147.7	+
Software engineers	131.7	171.0	++	138.5	174.5	++	104.4	187.4	++	106.3	178.1	++
Management consultants*	239.1	314.3	++	239.1	314.3	++	104.7	143.6*	++	104.7	143.6	++
Group B occupations												
Engineers (excl software)	169.2	160.9	-	171.9	153.4	-	133.8	153.7	+	131.2	148.4	+
Legal professionals	256.1	191.8	--	256.1	191.8	--	254.1	161.4	--	255.9	154.1	--
Police officers all grades	186.1	143.0	--	197.9	158.6	--	185.5	142.6	--	194.1	159.0	--
Medical practitioners	237.1	170.4	--	218.8	166.9	--	108.4	166.1	++	169.8	163.7	-
Nurses and midwives	145.2	150.6	+	203.2	160.7	--	104.3	169.9	++	196.0	182.4	-
All occupations	107.4	179.4	+	132.7	183.3	++	93.2	173.1	++	127.6	180.7	++

* 1991-2001 only. 'Management consultants' were not shown separately for 1975-1990.
Key: 'gap': The single signs, +/-, denote increases for p95 of up to 25 percentage points greater than p10 over the period; the double signs, ++/--, denote increases more than 25 points. Earnings deflated by retail price index, 2001=100.
Note: estimates of hourly pay are based on smaller sample numbers because of lesser availability of hours worked.
Source: NESPD.

Table 4: Summary of logit coefficients: factors predicting the probability of an employee's pay being in the bottom or top 20% of weekly earnings

	Group A				Group B			
	Bottom 20%		Top 20%		Bottom 20%		Top 20%	
	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig
Bottom or Top: lag1 yr	2.909	****	2.996	****	2.116	****	2.379	****
Bottom or Top: lag2 yrs	1.362	****	1.604	****	1.171	****	1.379	****
Bottom or Top: lag3 yrs	0.897	****	1.256	****	0.776	****	1.094	****
No of job changes	-0.139	-	0.365	****	0.059	****	-0.008	-
Age >40 years	0.247	***	-0.064	-	-0.163	****	-0.021	-
No job changes age > 40	0.049	-	-0.239	****	-0.040	-	0.165	****
New hire (last 12 mo)	-0.509	*	0.050	-	0.363	****	-0.176	****
New hire * age>40	0.941	***	0.083	-	0.277	****	-0.133	-
Female	0.257	****	-0.272	****	0.255	****	-0.279	****
Part-time	2.875	****	-3.104	****	2.670	****	-2.537	****
Pay affected by absence	3.326	****	-1.695	****	3.116	****	-1.665	****
No of years in survey	-0.033	****	0.005	-	-0.035	****	0.021	****
Occupation dummies	yes		yes		yes		yes	
Year dummies	yes		yes		yes		Yes	
N	23,714		23,714		142,202		142,202	
Pseudo R2	0.622		0.588		0.511		0.509	
Clusters	4,818		4,818		18,987		18,987	

Significance levels: **** 1%; *** 2%, ** 5%, * 10%. Robust standard errors used, allowing standard errors to differ between clusters (multi-year observations for individual employees in the panel data set). Unbalanced panel.

Note on variables: Number of job changes: computed from the number of times the employee was reported as a new hire in the previous three and current years. New hire: if the employee had been with the current employer for less than 12 months. Pay affected by absence: whether the employer reported that the employee's pay in the survey period had been affected by absence. Number of years in the survey: computed from the number of years the employee's id appears in the sample.

Source: New Earnings Survey Panel Data Set, ONS.

Figure 1: Career tracks for an unstructured occupational entry for a given cohort

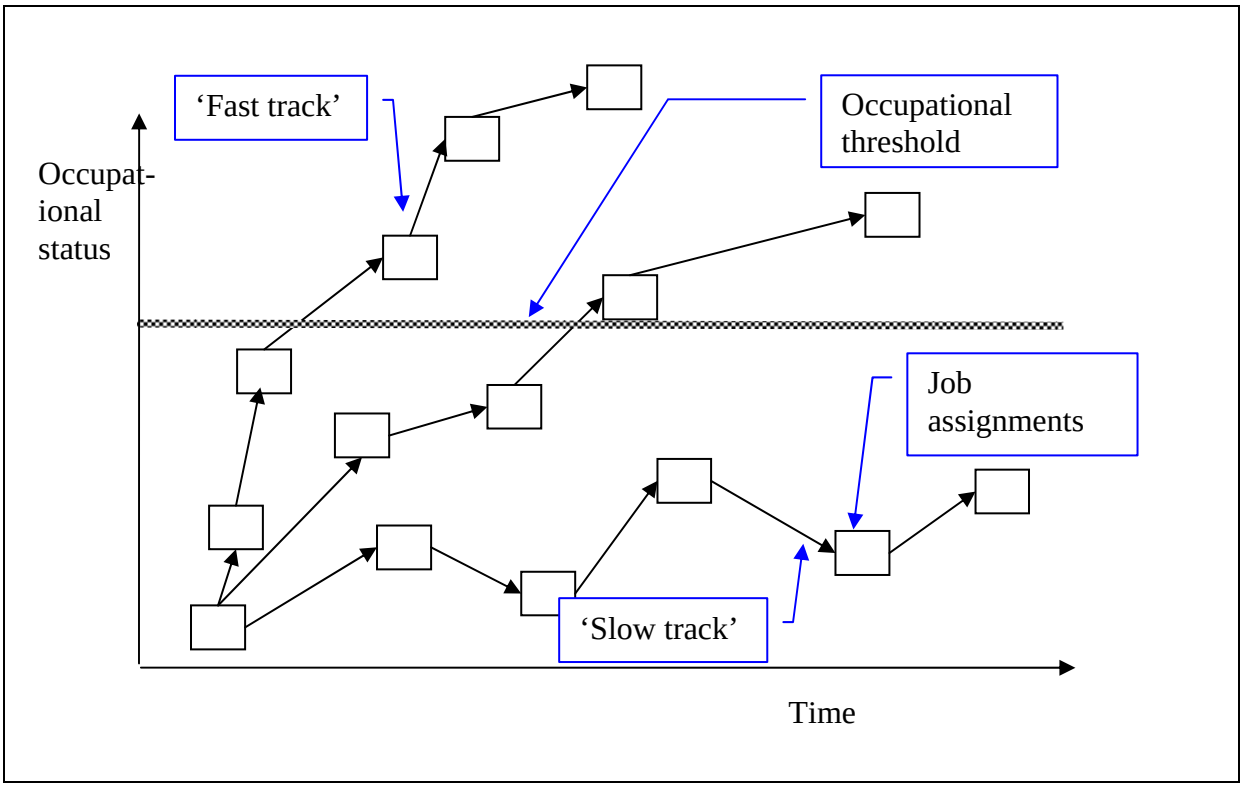
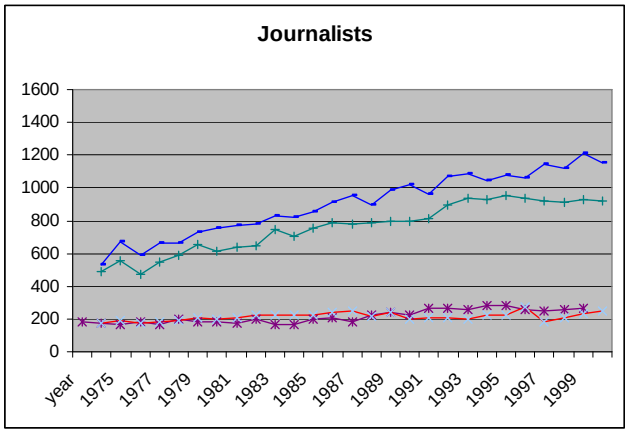
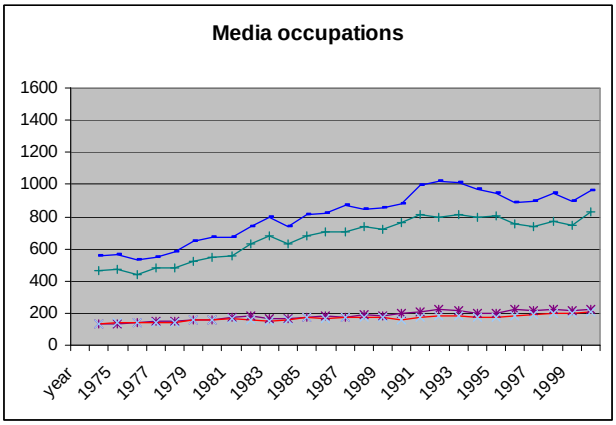
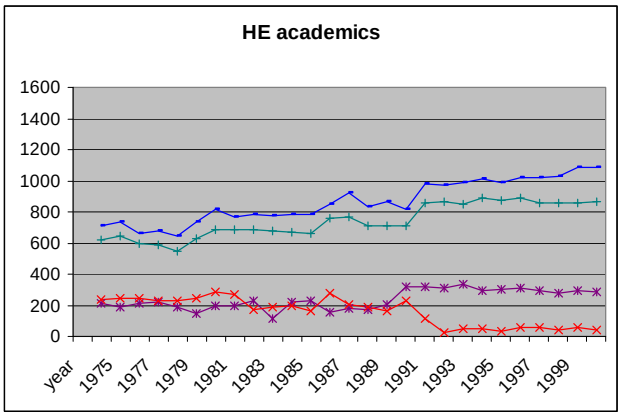


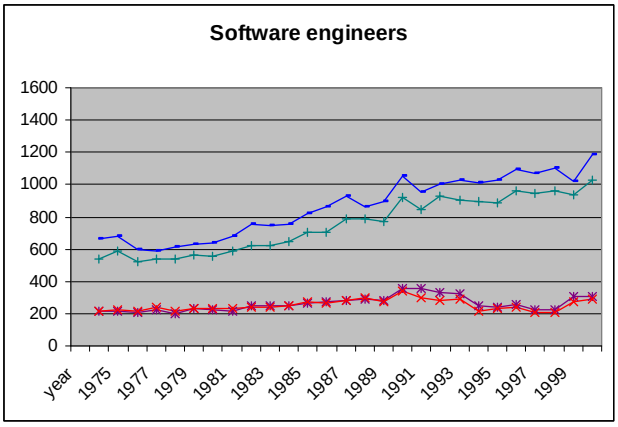
Figure 2: Growth of weekly earnings 1975-2001 at constant 2001 prices for selected percentiles and occupations

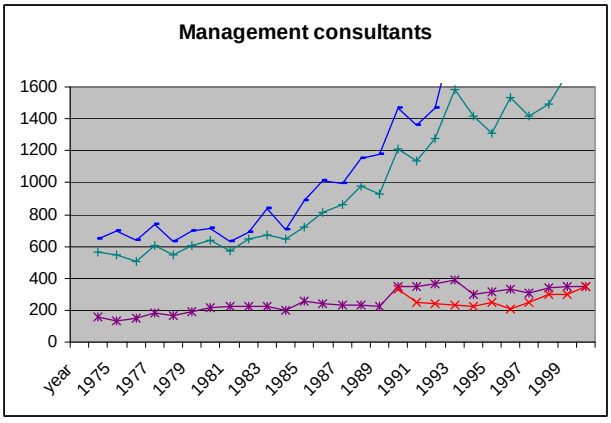
Group A occupations



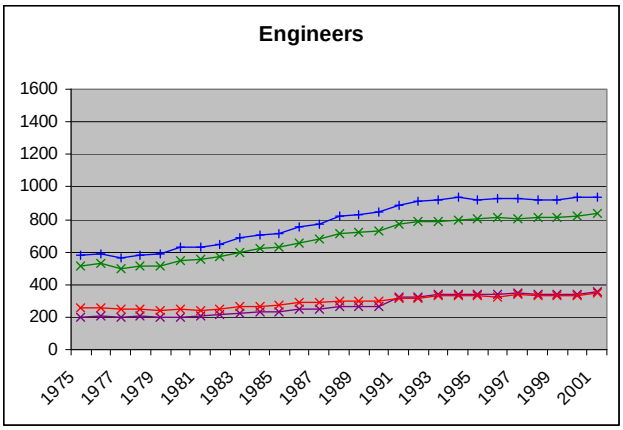


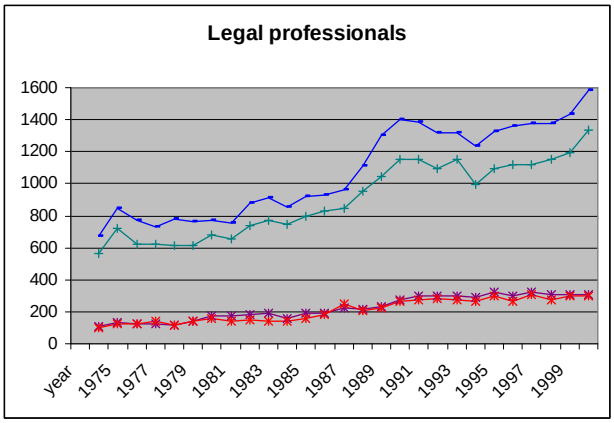


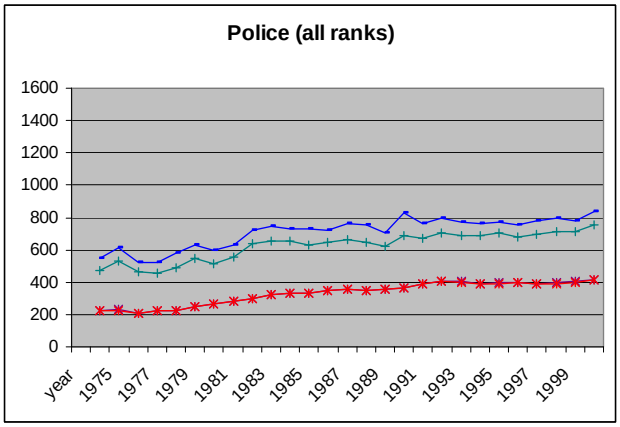


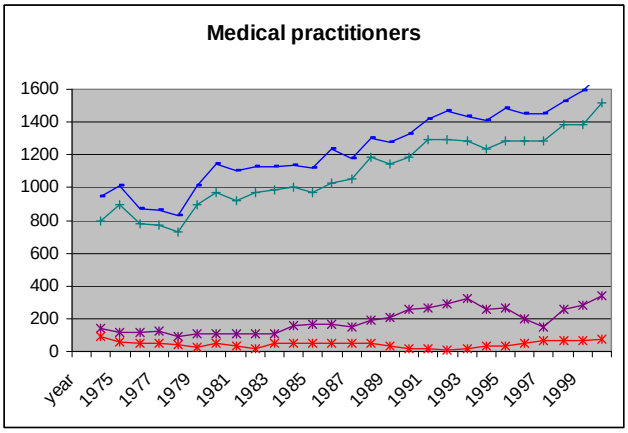


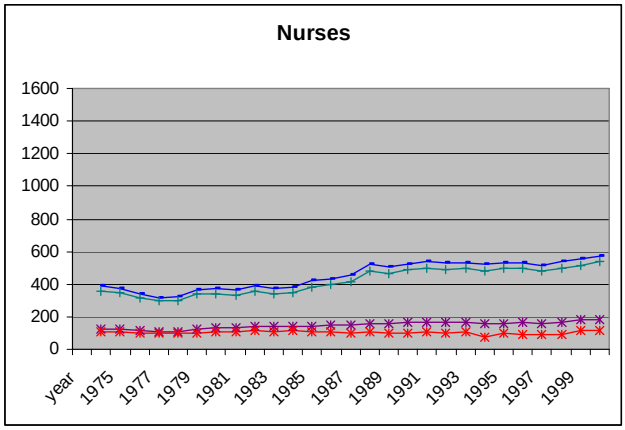
Group B occupations

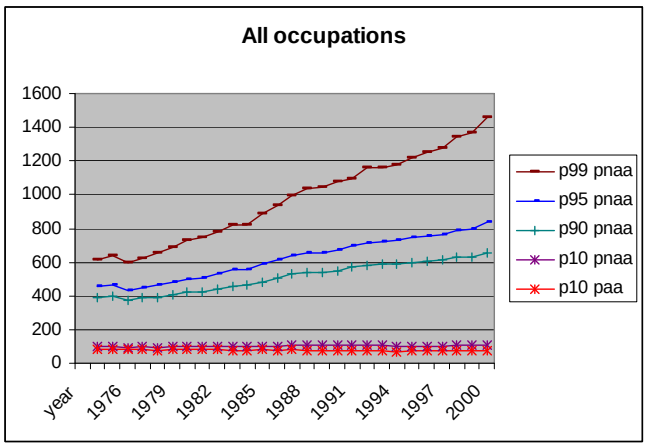












Key: pnaa: pay not affected by absence, paa, including pay affected by absence. P99 shown for all occupations combined only.
Percentiles: p95, p90, and p10 for those whose pay was not affected by absence. Additionally, at p10 shown also for those whose pay was affected by absence.
Earnings deflated by Retail Price Index, 2001=100.
Full and part-time combined.
Source: New Earnings Survey 1975-2001.

Appendix Table 1. Logit regression coefficients on the probability of being in the bottom or top quintile weekly earnings for selected occupations 1975-2001

Panel A. Group A: Less structured occupations:

	Journalists				**Media (excl journalists)**				**HE academics**				**Mgt consultants**				**Software engineers**			
	Bottom 20		Top 20		Bottom 20		Top 20		Bottom 20		Top 20		Bottom 20		Top 20		Bottom 20		Top 20	
	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig
Bottom or Top: lag1 yr	2.893	****	3.516	****	2.873	****	2.796	****	2.265	****	3.429	****	3.558	****	3.330	****	3.299	****	2.598	****
Bottom or Top: lag2 yrs	1.472	****	1.972	****	1.620	****	1.758	****	0.805	***	1.645	****	1.620	****	1.927	****	1.144	****	1.045	****
Bottom or Top: lag3 yrs	0.954	****	0.763	****	1.121	****	1.411	****	0.684	**	1.284	****	0.780	-	1.301	****	0.761	****	1.260	****
No of job changes	-0.347	*	0.495	****	-0.191	-	0.367	****	0.446	-	0.308	*	0.390	-	0.316	-	-0.305	-	0.164	-
Age >40 years	0.272	-	-0.276	*	0.435	****	-0.314	****	0.140	-	0.667	****	0.940	***	-0.471	*	-0.035	-	-0.110	-
No of job changes * age > 40	0.453	-	-0.255	-	0.153	-	-0.228	-	-0.794	*	-0.140	-	-0.790	-	-0.203	-	0.383	-	0.137	-
New hire (last 12 mo)	-0.572	-	-0.456	-	-0.627	-	0.040	-	-1.222	-	1.298	****	-0.158	-	1.041	-	0.094	-	-0.115	-
New hire * age>40	0.435	-	-0.148	-	0.792	-	0.287	-	2.267	**	-0.541	-	0.961	-	0.451	-	-0.438	-	-0.919	-
Female	0.137	-	-0.505	****	0.539	****	-0.094	-	0.074	-	-0.382	****	0.290	-	-0.279	-	0.268	-	-0.323	*
Part-time	3.388	****	-3.849	****	1.930	****	-2.167	****	4.857	****	-4.516	****	3.061	****	-2.439	***	2.078	****	-2.507	****
Pay affected by absence	3.184	****	-1.603	*	3.323	****	-1.908	****	4.776	****	-1.837	****	3.135	****	-1.045	**	2.739	****	-1.277	**
No of years in survey	-0.068	****	0.002	-	-0.056	****	0.011	-	-0.033	*	0.012	-	-0.043	-	0.035	-	-0.009	-	0.007	-
Year dummies	yes		yes		yes		yes		yes		yes		yes		yes		yes		yes	
R2	0.6376		0.6483		0.6159		0.5822		0.7635		0.6548		0.6332		0.6388		0.5205		0.4379	
N	4342		4346		7087		7087		7027		7027		1263		1263		3296		3296	
Clusters	742		742		1681		1681		1182		1182		390		390		892		892	

Panel B. Group B: More structured occupations:

	Engineers				**Legal professionals**				**Police (all ranks)**				**Medical practitioners**				**Nurses & midwives**			
	Bottom 20		Top 20		Bottom 20		Top 20		Bottom 20		Top 20		Bottom 20		Top 20		Bottom 20		Top 20	
	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig	Coef.	sig
Bottom or Top: lag1 yr	2.847	****	2.667	****	2.508	****	3.737	****	1.405	****	1.655	****	2.341	****	2.692	****	1.935	****	2.546	****
Bottom or Top: lag2 yrs	1.498	****	1.464	****	0.830	****	1.540	****	1.283	****	1.300	****	1.159	****	1.146	****	0.933	****	1.325	****
Bottom or Top: lag3 yrs	1.027	****	1.060	****	1.258	****	0.651	***	1.188	****	1.060	****	0.859	****	0.982	****	0.455	****	1.131	****
No of job changes	-0.283	****	0.064	-	-0.384	**	0.070	-	0.194	****	0.067	-	0.099	-	-0.289	****	0.078	****	0.036	-
Age >40 years	0.234	****	-0.173	****	0.675	****	-0.535	****	-1.003	****	0.165	****	-0.375	***	-0.195	-	-0.097	**	0.021	-
No of job changes * age > 40	0.303	****	0.154	*	-0.378	-	0.194	-	-0.362	*	0.350	****	0.015	-	0.419	****	-0.072	-	0.073	-
New hire (last 12 mo)	-0.475	**	0.523	****	0.197	-	0.361	-	-0.313	*	0.272	**	0.292	-	-0.489	**	0.564	****	-0.416	****
New hire * age>40	0.821	****	-0.292	-	1.370	*	-1.307	**	1.163	****	-0.520	***	-0.556	-	-0.060	-	0.203	*	-0.103	-
Female	0.726	****	-0.696	****	0.582	****	-0.266	*	0.356	****	-0.491	****	-0.684	****	-0.659	****	0.208	***	-0.184	****
Part-time	3.269	****	-2.014	****	2.816	****	-2.144	****	5.234	****	-1.562	-	4.081	****	-2.087	****	2.840	****	-2.666	****
Pay affected by absence	2.429	****	-1.056	****	3.749	****	-2.272	****	2.366	****	-0.369	**	4.900	****	-1.959	****	3.251	****	-2.067	****
No of years in survey	-0.012	**	0.014	****	-0.139	****	0.013	-	-0.065	****	0.027	****	-0.034	****	0.043	****	-0.059	****	0.027	****
Year dummies	yes		yes		yes		yes		yes		yes		yes		yes		yes		yes	
R2	0.5158		0.4896		0.5619		0.5805		0.4099		0.3171		0.7226		0.6011		0.5342		0.5801	
N	28733		28733		3,726		3,726		26,257		26,257		9,028		9,028		74,464		74,464	
clusters	5995		5995		819		819		2,500		2,500		1,286		1,286		8,442		8,442	

Notes: Quintile ranges calculated for each occupation in each year using average gross weekly earnings of employees, including pay affected by absence for employees present for at least 3 years in the sample, deflated by the retail price index.
Note on variables: Number of job changes: computed from the number of times the employee was reported as a new hire in the previous three years. New hire: if the employee had been with the current employer for less than 12 months. Pay affected by absence: whether the employer reported that the employee's pay in the survey period had been affected by absence. Number of years in the survey: computed from the number of years the employee's id appears in the sample.
Significance: **** 1%, *** 2%, ** 5%, * 10%. Logit regression with unbalanced panel allowing standard errors to vary by cluster, in this case, individual employees. Source: New Earnings Survey Panel Data Set, ONS.

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