

**THE LONDON SCHOOL OF ECONOMICS
AND POLITICAL SCIENCE**

*THE 'TOP-TIER' GROWTH OF PAY INEQUALITY IN BRITAIN:
A COMPARATIVE AND LONGITUDINAL ANALYSIS*

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for the degree of Doctor of Philosophy

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Declaration

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Abstract

This thesis examines the recent growth in pay inequality in Britain that can be traced to change at the top of the distribution. It takes a broad perspective on the subject that draws on insights generated across multiple branches of social science, and tests these insights against comparative data. It argues ultimately that top-tier growth in British pay inequality is strongly connected to rising demand for the skills of upper- and middle-managers created by the reshaping of production systems in British organizations. On the way to this conclusion, the thesis addresses three main research questions:

1. What lies behind the apparent ‘top pay’ bias in pay inequality growth in Britain since the 1990s?

The thesis tests multiple explanations for the distributional bias observed in Britain in comparative perspective. It concludes that rising pay inequality at the top in Britain is connected to an apparent increase in relative demand for certain types of manager that is specific to that country.

2. Have organizational governance factors contributed to the rise in pay inequality at the top?

It is tested whether the apparent rise in relative demand for managers in Britain is in fact a byproduct of shifting patterns of organizational governance. The empirical analysis finds little evidence that governance factors have contributed greatly to the rise in pay inequality at the top.

3. Have changes in production systems contributed to the apparent rise in relative demand for managers in Britain?

The thesis tests the idea that recent changes in the typical approach to production have made certain types of manager relatively more valuable to British organizations. It finds firm evidence that this is the case, and that this trend has contributed to the rise in top-tier pay inequality.

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Chapter 1

Introduction

General introduction

A large body of research has confirmed that British levels of broad-based pay inequality – meaning the degree of inequality as measured across the entire distribution of pay in the labour market – rose substantially between the late-1970s and the mid-1990s (see, for example, Schmitt 1995; Gosling, Machin et al. 1996; Leslie and Pu 1996; Machin 1996; Machin 1997; Machin 1998). However, recent contributions to the literature have questioned whether this trend has continued since the middle of the last decade, and in some cases have wondered whether it has in fact been replaced by a trend towards rising pay inequality only at the top of the labour market (Dickens and Manning 2002; Goos and Manning 2003; Guy 2005). As this issue has yet to be directly investigated, questions remain as to what the exact form of this new trend might be, and – if its existence is confirmed – what might lie behind it.

A trend of this kind would be worthy of analysis because it would suggest that the British labour market continued to fragment among winners and losers during the years of steady and consistent economic growth that followed the economically volatile years of the 1980s and the recession of the early-1990s. In the period between the Second World War and the oil shocks of the 1970s, consistent economic growth in Britain (and most developed economies) was associated with a trend towards greater equality in labour market outcomes (Atkinson 1999a). It is perhaps unsurprising that the years of upheaval in the British economy and labour market in the late-1970s and 1980s – which featured deindustrialization, rapidly rising unemployment, and significant industrial conflict – were marked by rising pay inequality. However, it would mark a qualitative break with the past if it were confirmed that the return of consistent growth has also been associated with rising pay inequality. Such a finding would provide further evidence that the British labour market has changed in fundamental ways in the period since the end of the 1970s.

While there is a sizeable body of existing anecdotal evidence in the area of rising pay inequality biased towards the top of the labour market – see, for example the ongoing media coverage of ‘fat cat’ executive pay deals – there is something of a dearth of analysis based on data and sound measurement. Furthermore, the question of social and economic inequality is once again becoming a major issue in British public policy debate, partly because of the rising profile of the global super-wealthy in Britain (e.g., Roman Abramovich, Lakshmi Mittal, and so on), but partly because of a growing public perception that Britain more broadly is continuing to become a more stratified society. Although debates of this kind tend to focus on inequality in wealth, income, or even life chances, the fact that wealth and income are largely founded in earnings for the large majority of the population (Atkinson 1999a) means that the investigation of rising pay inequality is of great relevance to them. For this reason, detailed study of possible rising pay inequality at the top could contribute not only to the general understanding of the recent evolution of the British labour market and employment relations, but also to wider socio-economic enquiry and public debate about the direction in which the country is developing.

Given the potential broad relevance of the issue, therefore, this thesis takes up the challenge of investigating in detail the subject of changes in pay inequality at the top of the labour market. In outline, the thesis attempts first of all to identify any such trend in the British data for the period between the late-1970s and 2001/2002, defining ‘top-tier pay inequality’ as those aspects of pay inequality that relate to the top ten percent of the overall distribution. Having done so, it proceeds to explore a number of possible approaches to the explanation of this trend. The thesis looks at the issue of explanation from a number of angles. Initially, it tests hypotheses derived from the literature on past changes in broad-based pay inequality, but, finding these not to be relevant to the new form of trend, puts these aside in favour of alternatives sourced from across the spectrum of socio-economic enquiry.

The industrial relations tradition, with its ecumenical and pragmatic approach to empirical research, provides an ideal environment within which to pursue a wide-ranging research agenda of this kind. Thus, the thesis builds on the foundation of the existing body of relevant labour economics research on pay inequality trends, not least by emulating its use of large-scale quantitative data sets and methods of econometric analysis. Nonetheless, it is also intended to draw on other research traditions and theory where appropriate in order to attempt

imaginatively to address the key questions that arise. In particular, I draw on a number of findings from the literature on comparative capitalism in order to inform my analyses.

The empirical phenomenon of pay structures (and change therein) is of interest to researchers in multiple disciplines of the social sciences – with each discipline interrogating and interpreting the data on this issue for its own distinct purposes. Essentially, however, it is possible to discern two primary perspectives in the research literature on pay inequality: that of economics, and that of political science. The first of these understands pay differentials primarily as price signals that enable the matching of supply and demand in the labour market, directing labour to its most productive use (Okun 1975). Through this lens, pay inequality appears as a technical factor whose analysis can inform studies of labour market operation, of economic efficiency, of firm behaviour, and so on. In contrast, the second perspective – that of political science – tends to view pay differentials in the light of the question, ‘who gets what, when, how?’ (Lasswell 1936). As a consequence, pay inequality is understood as being more than the outcome of technical processes of market operation, as it is simultaneously the product of and an influence upon the hurly-burly of political competition in a society (Pontusson, Rueda et al. 2002).

The approach I take in the thesis, then, is one of applying and integrating different bodies of knowledge in order to guide my research and to generate hypotheses, while deploying an empirical strategy based on econometric analysis. All the same, the differing motivations and goals of the chapters mean that the exact form of the empirical analysis varies considerably from one chapter to another. Chapter two is intended to lay the foundation for the remainder of the thesis by establishing the facts in relation to British top-tier pay inequality in recent years, assessing existing explanations for rising pay inequality, and identifying plausible alternative directions of research. Chapters three and four respectively build upon this base by exploring plausible ‘non-market’ and ‘market’ explanations of the observed rise in British top-tier pay inequality, with the former examining the impact of corporate or organizational governance factors, and the latter looking at the influence of the role of managers in the organization of production.

The thesis is intended as an initial enquiry into the subject of top-tier pay inequality in Britain, which addresses certain questions but also raises others. It is my aim to provide a firm basis of fact about what form these trends have taken, and to assess a number of plausible

explanations for them. But, while I believe my conclusions to be robust, I understand them to be an opening contribution to a debate rather than the last word on the subject.

In organizing the thesis, I have adopted a three-paper format in which the chapters build upon one another and are closely interlinked. In this way, I hope to provide a strong element of continuity to my argument, while benefiting from the ability that this structure affords me to investigate a small number of key questions in great detail. The following section of the introduction provides a brief overview of the remainder of the thesis, with an emphasis on the key research questions and my manner of addressing them.

Overview

The second chapter opens the empirically focused element of this thesis. It comprises a comparative assessment of the evidence in relation to the question of top-tier pay inequality growth in Britain since the late-1970s. It addresses two principal research questions. First, the chapter aims to identify a ‘top pay’ bias in pay inequality growth in Britain and to understand the ways in which it might be novel and/or specific to Britain. It does so by examining top pay developments in Britain in the light of preceding trends and of trends in comparable countries, namely France and Germany. Second, it begins this thesis’s analysis of factors that underlie the growth of British top-tier pay inequality, asking whether this is a continuation of previous trends or rather something new. Initially, the chapter tests the relevance of prevailing explanations for rising pay inequality, but eventually discards these in favour of an alternative explanatory framework centred on ‘jobs’. This alternative approach reveals that the rise in top-tier pay inequality in Britain is closely linked to the fortunes of senior managerial jobs, and that Britain appears quite distinctive in this respect. Furthermore, the economy-wide nature of the trend in favour of managerial jobs implies that this development is closely linked to changes *within* organizations. In this way, the chapter provides a factual foundation for the chapters that follow, and identifies plausible approaches to the explanation of top-tier pay inequality growth that they may test.

Chapter three takes up the task of exploring and testing the ‘non-market’ explanation of rising pay inequality, that is, the influence of corporate or organizational governance factors. In

doing so, the chapter draws on a set of ideas derived from political science. The core idea tested in this chapter is that ‘outsider-dominated’ organizations will tend to favour managerial interests relative to those of other employees, with the result that top pay will rise relative to the rest of the distribution, whereas ‘insider-dominated’ organizations will tend to treat all employees – managerial or not – on a relatively equal basis, with the result that pay will be more equally distributed. By testing these ideas on comparable, organization-level, time-series data for Britain and France, the chapter is able to probe the implications of the hypothesis in contexts marked by different top pay inequality trends. On the whole, however, the results indicate that, while the evolution of governance arrangements is of some significance for top pay outcomes – especially in Britain – it is not a major determinant of top-tier pay inequality growth.

This finding orients the thesis back towards market explanations of change in the dependent variable. Chapter four analyses top-tier pay inequality growth using a market-based conceptual framework, and focuses on the fortunes of the occupational group of managers in Britain within this framework. Noting the commonplace in the research literature that British management in the postwar period was distinctive in comparative terms for its low human capital, status, and importance to the conduct of production, the chapter probes developments since the 1970s in all of these areas as a means of better understanding why British managers appear to be in such high demand now. As a means of interpreting change, the chapter draws on insights generated in the fields of economic sociology and industrial relations (the ‘societal effects’ approach), integrating these within a supply-and-demand analysis of pay and employment outcomes. The findings of the chapter point suggest that the apparent large increase in demand for managers in Britain since the 1980s is strongly associated with considerable change along the key dimensions of skills production systems, industrial relations arrangements, and work organization within the typical British enterprise.

Chapter five offers a brief set of concluding remarks, summarizing the key insights generated by the preceding three chapters and outlining the principal argument of the thesis.

Chapter 2

Understanding the Recent Top-Tier Bias of Pay Inequality Growth in Britain

Introduction

In the last two decades the subject of pay inequality has attracted considerable academic attention in Britain. This interest followed the reversal of a long-term postwar trend towards overall pay compression (Schmitt 1995), as a result of which the distribution of pay has become ever more inegalitarian. It is widely recognized that this ongoing distributional shift has been an ever-present feature of the British labour market since the late-1970s, and has led to a substantial restructuring of the rewards for work, with a concomitant impact on overall income inequality and social stratification (Atkinson 1999a; 2002).

However, the trend towards greater pay inequality has not been uniform. Rather, there is evidence that it underwent a substantial shift in its form in the course of the 1990s, becoming to a much greater extent a phenomenon affecting only the top tier of the labour market. Prior to this period, between the late-1970s and the mid-1990s, the rise in pay inequality in Britain was a broad-based trend that affected the whole of the pay distribution. This is to say that while real pay – no matter whether measured by hourly wages, or weekly or annual earnings – rose on average, both tails of the distribution became progressively more elongated, which pattern was reflected in steadily rising gaps between the median and the 10th and 90th percentiles respectively (Schmitt 1995; Gosling, Machin et al. 1996; Machin 1996; Prasad 2002).

Of the explanations offered for this trend, two came to prevail. First, it was argued that the path of technological and organizational evolution had taken a sharp turn in the course of the 1970s as a result of the ever-wider introduction of novel information and computing technologies (ICT) in the workplace, and that these technologies were complementary with

highly skilled labour. The consequence of these developments was interpreted as a complementarity effect – widely labelled ‘skill-biased technical change’ (SBTC) – that raised relative demand for skilled labour while reducing relative demand for unskilled labour.

Within this framework, therefore, the rising dispersion of pay reflected the impact of a relative demand shift in a context in which the supply of high skills could not adjust quickly enough to maintain the previous distributional equilibrium.

The other key explanation concerned the fortunes of labour market institutions perceived to buttress the relative pay levels of low-skill workers – chiefly, the system of collective bargaining, the agreement of wage floors in low-paying industries, and features of the welfare state affecting the ‘replacement wage’. In Britain, from the late-1970s onwards, these institutions underwent significant change in ways that reduced their potential to compress the distribution of pay outcomes (Machin 1997; Howell 1999). For example, there occurred a steady fall in the prevalence of collective bargaining throughout the 1980s and into the 1990s; the Wages Councils that governed wage floors were hollowed out prior to their eventual abolition; and the real value of welfare state benefits available to the unemployed was progressively reduced. From this perspective, then, the weakening of the array of institutional supports for the pay of the low-skilled in particular contributed to the expansion of overall pay inequality observed in the British labour market.

Many analysts concluded that SBTC and institutional change were not rival explanations of British developments, but had worked in tandem to increase pay inequality across the breadth of the distribution, with the former stretching the right tail and the latter working to widen the left (Schmitt 1995; Gosling, Machin et al. 1996; Machin 1996). However, while a similar trend towards greater pay inequality was observed at the same time in a number of other developed countries – especially the US and Canada – it was by no means a universal phenomenon. For instance, West Germany and France showed little sign of growing pay inequality in this period (Katz, Loveman et al. 1995). In comparative perspective, therefore, researchers tended to conclude that although SBTC was a development that transcended national borders, its pay inequality-raising impact was subdued in countries with strong and stable labour market institutions (see, e.g., Freeman and Katz 1995; Blau and Kahn 1996; Gottschalk and Joyce 1998; Tachibanaki 1998).

In recent years, research using newer data has raised questions about the predominant form of change in the British distribution of pay. Namely, it has indicated that the broad-based trend towards greater pay inequality in Britain fell away in the course of the 1990s – indeed, some research suggests that the outline of the distribution of pay between the 10th and 90th percentiles changed little after mid-decade. But, it seems that overall pay inequality has continued to rise owing to continuing change in the shape of the top end of the distribution (Prasad 2002; Goos and Manning 2003). Only limited evidence for this shift has been assembled in the academic arena, although non-academic sources tend to corroborate the story (for instance, Towers Perrin 2007; Towers Perrin 2008). As a consequence, the issue of rising top-tier pay inequality has yet to be satisfactorily explored and mapped out.

Interestingly, a similar trend has been noted in the US in the same period, and has led to a reopening of debate about the factors that underlie rising pay inequality, as the combination of SBTC and institutional change does not seem adequate to explain this novel and particular form of distributional change (Card and DiNardo 2002; Autor, Levy et al. 2003; Lemieux 2006; Lemieux 2007). To a large extent, the reassessment has been driven by two observations: first, that even as the rate of technological change in production accelerated in the US after the turn of the 1990s (especially as regards investment in and implementation of information and communication technologies [ICT]), the rate of broad growth of wage inequality decelerated almost to nothing; and second, that rises in pay inequality concentrated above the top decile of the distribution appear to have little to do with labour market institutions such as wage floors and collective bargaining. Evidently, both of these observations are valid for Britain as for the US, and invite further analysis of the factors driving change in pay inequality in Britain since the mid-1990s.

This chapter is intended as an initial step towards addressing the questions that have been raised regarding the form and causes of rising top-tier pay inequality in Britain. In exploring these two issues, it addresses two principal research questions. The first of these concerns the precise nature of the mooted ‘top pay’ bias in pay inequality growth in Britain since the mid-1990s. The paper seeks to identify this and to confirm whether or not the trend possesses aspects which are novel and/or specific to Britain. It does so by taking an explicitly comparative approach to the analysis of the distribution of pay, examining developments in Britain in the light of preceding trends and of contemporaneous developments in comparable countries (the countries analysed are France and Germany).

The second research question relates to the factors contributing to the top pay bias in inequality growth. Thus, the chapter investigates what lies behind the ongoing growth of top-tier pay inequality, asking whether this is a continuation of previous trends or rather something new. To this end it initially tests the extent to which the prevailing explanations for rising pay inequality – i.e., SBTC and change in certain labour market institutions – can account for top-tier growth in pay inequality. However, it also applies a ‘job’ analysis framework, derived from the insights of some of the most recent literature on changes in British pay inequality, to the data in order to explore plausible alternative explanations for change at the top of the pay distribution. To identify the extent to which these explanations rest on ‘universal’ or country-specific factors, all of these tests are conducted using not only British data, but also against French and German data.

This chapter has three main sections. The first section is intended to set the scene for the investigation of the two research questions noted above, and presents the chapter’s literature review, its empirical strategy, and a description of the data it uses. First, therefore, it sorts through the British and international literature on change in pay inequality to identify the relevant debates and theoretical positions, and establishes the current state of knowledge in the area. Second, it introduces the chapter’s approach to empirical analysis. Third, it describes the scope of the data used in the course of this paper’s analysis, and discusses the relative strengths and weaknesses of the various data sets. It further makes the case for defining ‘pay’ in terms of the price facing employers in the labour market – or, at least, a measure that approximates this – as both the prevailing explanations for rising pay inequality and alternative accounts turn on employer decision making with regard to the profile of the workforce and relative pay.

The second main section of the chapter addresses the first key research question sketched above. The results it generates indicate that the pattern of top-tier pay inequality growth is long-established in Britain, and that there is considerable across-country variation in trends in this area. The third main section of the chapter addresses the second research question, i.e., that relating to the factors underlying change in pay inequality. It initially tests the usefulness of the prevailing explanations of rising pay inequality in accounting for top-tier inequality growth. As these analyses conclude that the prevailing explanations are of limited applicability, they open the door to consideration of alternative explanations. Here, the

chapter introduces the ‘job’ analysis approach to analysis of change in the distribution of pay, and applies it to the data. This element of the study produces a number of new insights into the development of top-tier pay inequality in Britain, in particular that it appears to be associated with the relative pay fortunes of a narrow set of senior general and specialist managerial job types and their incumbents.

In its conclusions, the chapter teases out the implications of these findings for our understanding of rising top-tier pay inequality in Britain, and speculates on plausible paths of research that may lead to more definitive explanations of its causes. In doing so, it maps out the research agenda of the remainder of the thesis.

Literature review

It is by now a well known fact that pay inequality in Britain rose rapidly and continuously in the years between the late-1970s and the early-1990s. Numerous studies report this outcome for a number of different measures of pay – hourly wages, monthly earnings, and annual earnings (Schmitt 1995; Gosling, Machin et al. 1996; Leslie and Pu 1996; Machin 1996; Machin 1997; Machin 1998). That these studies employ a variety of data sources to obtain very similar results suggests that the observation of rising pay inequality is an extremely robust one.¹

A number of key features of the distributional shift can be distilled from this body of research. First, the rise in inequality was not limited to the periphery of the labour market, being as apparent among samples of full-time male workers as among samples that include groups with a lesser attachment to the labour market (part-time workers, women, etc.) (Gosling, Machin et al. 1996). Second, real wages grew steadily during this period even at the very bottom of the distribution, in contrast, say, to the contemporaneous experience of low-paid workers in the US, who suffered falling real remuneration (Schmitt 1995; Gosling, Machin et al. 1996). Third, the rise in inequality affected the whole distribution, with growth in disparities occurring on both sides of the median. Thus, for example, Machin (1996) shows

¹ The sources used include employer-reported data such as the New Earnings Survey, and surveys of individuals and households such as the Family Expenditure Survey and the General Household Survey.

that between 1977 and 1992 the p50-p10 percentile ratio rises from approximately 1.45 to 1.8, and the p90-p50 percentile ratio rises from 1.65 to 1.9. Lastly, it is stated that the rise in inequality was largely unrelated to the ongoing and rapid shift of economic activity from manufacturing into services or to the growing rate of labour force participation among women (Schmitt 1995). Overall, therefore, the distributional trend between the late-1970s and early-1990s can be defined as a broad, continuous shift towards greater inequality.

A glance at the equivalent German and French research literatures is enough to convince an observer that the British experience of greatly expanding pay inequality in the 1970s and 1980s was not universal among large EU states. In Germany, for instance, studies covering the period from the late-1970s until unification in 1990 find little change in any aspect of the German wage distribution except one: the narrowing of the gap between the lowest paid and the median (Abraham and Houseman 1995; Fitzenberger, Hujer et al. 2001). Thus, the p50-p10 percentile ratio is found to have dropped from around 1.5 to 1.4 in the course of the 1980s (p.377, Abraham and Houseman 1995), the reverse of the contemporaneous trend in Britain. In all other respects – upper-tail inequality, returns to age, experience, and education, inter-industry and inter-occupational patterns, and so on – the structure of pay is seen to remain very stable during this period. Moreover, as in Britain, German researchers have exploited both employer and household data to examine pay inequality trends, and both varieties of survey have generated results that support these conclusions.

Developments in France in this period somewhat resemble those observed in Germany. An early analysis of the French experience uses social security records (DADS) for 1967-1990 (Katz, Loveman et al. 1995). Focusing on the results from the mid-1970s onwards, the pattern that emerges is one of a substantially static wage distribution between the 10th and 90th percentiles, with mild compression in the early-1980s being followed by an equally mild dispersion in the second half of the decade. Most of the variation in the distribution can be traced to inequality shifts confined to female workers. Such aspects of the wage structure as the returns to education and experience remain stable throughout the 1980s. Mitani's (1998) analysis of a related data set produces results that are consistent with this picture. In addition, these findings have been corroborated by Piketty's (2001) more recent study of the long-term evolution of the distribution of pay that draws on a different data set generated from personal tax returns.

This brief comparison of Britain, France, and Germany from the 1970s to the early-1990s shows that the British experience of rising broad-based pay inequality was not shared elsewhere. Indeed, French and German pay structures remain remarkably static in outline during this period. What might lie behind these fundamental differences? As a first step in answering this question, I look at the prevailing explanations in the literature for British pay inequality trends. Subsequently, I investigate how useful these explanations are when they are called to account for patterns of change observed in other countries. The dominant accounts of British inequality trends can be bracketed into two groups: those that interpret relative wage shifts as the outcome of changes in the interaction of supply and demand for different types of human capital, and those that see them as deriving from alterations in the form of labour market institutions. The key types of institutions considered by most observers to be relevant to the analysis include unions and collective bargaining, and minimum wage regulations. It should be noted that the two sets of explanations are neither contradictory nor mutually exclusive. Indeed, many commentators conclude that the observed trends are the product of both types of influence.

For the first group of explanations, the key underlying assumption is that there took place in the 1970s a transition in the pattern of labour demand that relatively favoured more highly skilled workers, and that this relative bias towards the highly skilled has remained a constant feature of the labour market up to the present (Schmitt 1995; Machin 1998; Card and Lemieux 2001; Prasad 2002). As for the cause of such an apparent bias in demand, there have been two main candidates: globalization, in the particular sense of rising international trade and market integration; and skill-biased technological change (SBTC). The first hypothesis presumes that globalization affects the distribution of pay in the developed countries by a form of supply shock, although from the perspective of a single developed-country labour market it manifests itself as a drop in relative demand for low-skill workers. The basic story departs from the following point: as barriers to trade become lower, developed-country employers will increasingly locate their production facilities according to cost rather than market access. Thus, low-skill workers in the tradable (and labour-intensive) sector of developed economies are increasingly exposed to competition from equally skilled but cheaper workers based in the developing world, with attendant negative pressure on their pay. In conjunction with the integration of markets, advances in communications and transport infrastructures further reduce the costs of transnational production and progressively expose more and higher-skilled workers to low-wage competition. The outcome, therefore,

within a single developed-country labour market, is a fall in relative demand for low skills that leads to relatively lower wages for these workers and growing wage inequality in the left tail of the distribution.

The SBTC account begins from the premise that new – principally, ICT – technologies are complements in production with high skills. The rapid decline in the real cost of such technologies – as captured by, say, the vertiginous drop in the price of a unit of computing power over the last couple of decades – encourages their rapid and widespread adoption among employers, and is the catalyst for an increase in demand for complementary high skills. Where skill supply growth is insufficient to match that of demand, the predicted outcome is that the price of high skills rises while that of low skills drops, which patterns are manifested in increased pay inequality, especially in the top half of the distribution (for surveys of the literature, see Chennells and Van Reenen 1999; Acemoglu 2002).

While the early literature on rising pay inequality in the US and Britain gave serious billing to both theses (e.g., see Schmitt 1995) and strong arguments were made for the role of increased trade on developed-country pay distributions (Wood 1994; Wood 1995), a general consensus has developed that the evidence for the impact of globalization on the distribution of pay in the developed countries is relatively weak (for surveys, see Burtless 1995; Freeman 1995). In large part, this is because of the within-industry nature of inequality growth where it has occurred, and the strong contribution of right-tail expansion to the widening of the wage distribution. Both observations can be interpreted to undermine the globalization thesis, as on the one hand one would expect it to lead to the growth of inter-industry inequality – between the traded and untraded sectors – and on the other it has little to say about the rise of inequality among more highly skilled workers. The SBTC thesis is better placed to account for these developments, and so has acquired much wider acceptance as a plausible explanation for the apparent shift in relative labour demand.

The first group of explanations for inequality developments in the British labour market, therefore, assume a SBTC-led demand bias as the cornerstone of their argument. Subsequently, they account for the rapid rise in British pay inequality during the 1980s and its deceleration thereafter as regards the impact of variation over time in the rate of growth of high skills. Essentially, relatively slow growth in the skills base in the 1980s means that demand growth outstrips supply growth, driving up the relative price of skills, whereas the

subsequent more rapid supply growth of the 1990s realigns the trajectories of supply and demand and produces stable relative prices. In these analyses, 'skills' are typically proxied by the level of educational qualification, and this story is buttressed by evidence that the returns to education rose rapidly in the first period before stabilizing in the second (Schmitt 1995; Machin 1998; McIntosh 2005).

The second class of explanation – 'institutions' – largely focuses on the twin impacts of the decline of trade unionism and the phasing out and subsequent refoundation of minimum wage regulations. The collapse of union strength in Britain in the face of the legal reforms of the Thatcher and Major governments, economic turmoil in many heavily unionized industries, and high unemployment was without equal in the developed world. Membership density dropped from approximately 55% in the late-1970s to less than 30% by the turn of the century, and collective bargaining coverage sank from 70% to 35% during the same period (Visser 2005). Given that unions are known to exert an egalitarian influence on wage structures (Freeman 1980; Metcalf 2001), it is not surprising that several studies have concluded that the contraction of the union sphere contributed to rising pay inequality (Schmitt 1995; Machin 1997; Gosling and Lemieux 2001). In the area of minimum wage regulations, from 1979 onwards Conservative governments weakened and eventually abolished the system of Wages Councils that set minimum rates in a number of low-wage industries. These moves have been found to have contributed to rising pay inequality in the lower reaches of the distribution (Machin 1997; Gosling and Lemieux 2001). In contrast, the adoption of the National Minimum Wage in 1999 was found to have raised the wage floor of the labour market and mildly reduced lower-tail inequality following its implementation (Dickens and Manning 2002).

Of the two institutional factors, union decline is generally perceived to be the more important for the explanation of overall inequality developments, as it directly affected a greater share of workers than either the old or new forms of minimum wage setting. For example, Machin estimates that, had union recognition remained at its 1983 level, the rise of wage inequality would have been approximately 40% less over the 1983-1991 period than was in fact observed (Machin 1997). He concludes that, while the downgrading of the wages councils had a positive and significant impact on wage inequality, its impact was of a lesser order. Overall, though, the view of the literature seems to be that institutional change and SBTC

contributed in more-or-less equal measure to the broad and rapid rise in British pay inequality that took place between the late-1970s and the start of the 1990s.

Before assessing the usefulness of the British explanations in relation to the trends observed in France and Germany, it is perhaps worth diverting our path briefly to consider the evolution of the international comparative literature on pay inequality. While the experience of rising pay inequality in the Anglophone world in the 1980s – and particularly in the US – led to the production of a very large literature on the subject (for surveys, see Levy and Murnane 1992; Gottschalk and Smeeding 1997), this experience was not strongly felt elsewhere in the developed world, and so analyses on the subject initially remained thin on the ground. Having posited a skill-biased demand shift as the primary driver of rising inequality in their own countries, Anglophone country researchers faced a puzzle when looking at developments beyond their own borders. Elsewhere, pay inequality did not appear to be rising as rapidly (or at all), yet the SBTC and globalization theses were universal in aspect, and so surely should have traction in all developed countries. After all, trade was rising in GDP across the developed world, and it would be reasonable to assume that general-purpose technologies like ICT diffuse quickly across borders, with the result that employers in all developed countries face similar menus of technological options. Thus, if the theses were to be valid anywhere, they must be valid everywhere. However, continental Europe and Japan tended to show little sign of significantly greater pay inequality (Freeman and Katz 1995; Blau and Kahn 1996; Tachibanaki 1998).

Mirroring the explanations that predominate in accounting for the British experience, two accounts emerged that could reconcile the observation of an absence of change in pay inequality with the posited existence of a global underlying shift in labour demand towards the highly skilled. First, in countries exhibiting little inequality growth it could be possible that the supply of highly skilled workers had expanded in line with demand. Second, political-institutional features of these labour markets – minimum wages, collective contracts, etc. – may have compressed pay relative to a competitive counterfactual outcome at the cost of higher unemployment. Consequently, the universal demand shift towards high skills could be tempered at the national level by supply shifts and a certain set of labour market institutions. This interpretation of the evidence became so commonplace in the comparative literature that it acquired titles such as the ‘transatlantic consensus’ (Atkinson 1999b) or the ‘unified theory’ (Blau and Kahn 2002).

The empirical assessment of the evolution of the distribution of pay in France and Germany has taken place within the context of this overarching interpretation. However, the evidence that SBTC factors can account for developments in these countries is not overwhelming. For example, analysts of German developments find that, over the last two decades of the 20th century, the growth of the relative supply of high skills is rather similar to the rates observed in the US and Britain, and so would not appear much better able to soak up demand-side pressure (Abraham and Houseman 1995; Prasad 2000). In the French case, the difficulty of gaining access to adequate education-level data makes it hard even to assess the rate of growth in the supply of general skills, forcing interested researchers to fall back on somewhat fragile inference (Katz, Loveman et al. 1995; Mitani 1998). Consequently, it remains to be shown whether differences in skill supply growth rates (against a common background of an increasing bias in labour demand towards high skills owing to SBTC) can explain observed variation in the evolution of pay inequality.

In the matter of the relevant institutions, more robust evidence is available. Both Germany and France have had denser and more durable systems of collective wage setting and minimum wage enforcement than Britain, and it is generally to these that analysts point when accounting for the absence of any notable change in the distribution of pay in these countries in the 1970s and 1980s (Abraham and Houseman 1995; Katz, Loveman et al. 1995; Mitani 1998; Prasad 2000). This argument is usually reinforced with reference to the higher rates of unemployment observed in Germany and France than in the international benchmark of the US, which are claimed as the byproduct of choosing a different point on the inequality-employment trade-off curve.² All the same, this argument has not gone unchallenged, as some recent research on the subject has forcefully questioned the existence of a clear, institutionally mediated trade-off between employment and the degree of pay inequality (Atkinson 1999b; Freeman and Schettkat 2001; Howell 2002; Schettkat 2003).

On the whole, though, the prevailing explanations of rising British pay inequality in the late-1970s and 1980s (i.e., SBTC and the weakening of labour market institutions) can be applied at least partially to the development of the French and German distributions of pay prior to the

² Britain's unemployment performance in the 1980s was no better than that of France and certainly weaker than that of West Germany at the same time that it experienced high rates of pay inequality growth across the distribution and they did not. This observation is not straightforwardly consistent with the hypothesis that countries must choose between rising pay inequality or rising unemployment.

early-1990s. Given that both of these countries experienced little growth in pay inequality during this period, the prevailing explanations would require that the growth in the relative supply of skilled labour grew more rapidly than in Britain, and/or that labour market institutions remained unchanged or even became more influential in the field of pay setting. While the evidence for the latter development is strong – i.e., that French and German collective bargaining, minimum wage, and welfare state institutions weathered the 1970s and 1980s rather better than their British equivalents – the evidence that skill supply growth differed substantially across countries is less clear-cut. As a result, it may be argued that while the ‘unified theory’ approach to explaining different national trajectories of change of pay inequality may not be fully complete, it can plausibly account for much across-country difference in developments in this area. On balance, then, it is reasonable to conclude that SBTC and the relevant labour market institutions hold the key to patterns of change (or stasis) in the distribution of pay in Britain in the decade and a half prior to 1990, and that this conclusion holds up when subjected to comparative scrutiny in the form of simultaneous analyses of developments in France and Germany.

If this is the conclusion that emerges from the literature relating to the 1970s and 1980s, the question arises as to its relevance to more recent developments. Research conducted using British data series that stretch up to the end of the 1990s and beyond has indicated that the pattern of change in the distribution of pay changed character rather sharply in the early- to mid-1990s. Analyses of this kind show that the by-then-well-established broad-based (i.e., whole-distribution) trend towards greater pay inequality fell away at this point, as the rate of inequality growth in the portion of the distribution lying between the 10th and 90th percentiles decelerated considerably (Machin 1998; Prasad 2002; Goos and Manning 2003). At the same time, however, there is limited evidence that pay inequality continued to increase at the very top of the distribution, i.e., at and above the 90th percentile (Prasad 2002; Goos and Manning 2003). This finding is particularly striking given the relatively static nature of the rest of the distribution. Certainly, taken collectively, these findings suggest that the evolution of the British distribution of pay entered a new phase at some point in the mid-1990s, and that the development most worthy of exploration is the apparent top pay bias in change in the distribution.

No clear explanation for this shift in Britain can be found in the literature. Regarding the left tail of the distribution, there is no doubt that institutional factors have had some impact.

Certainly, the introduction of the National Minimum Wage in 1999 acted to neutralize or reverse the preceding trend towards rising pay inequality, as it was found to have raised the wages of the bottom 6-7% of workers up to the new wage floor, and to have reduced inequality in the left tail of the distribution by a small but significant amount (Dickens and Manning 2002). In addition, the long decline of union membership and collective bargaining coverage slowed or even ceased in the late-1990s (Visser 2005), which development may plausibly have helped to prevent further growth in pay inequality. However, it is unclear whether institutional factors had much to do with the change in the shape of the distribution of pay above the median in 1990s Britain, principally because their greatest influence upon pay setting is usually understood to be exerted at the bottom of the distribution. In this area, the literature provides very little in the way of explanation, either of the reduction of pay inequality growth between the median and 90th percentile or of its expansion above the 90th percentile.

A similar problem confronts researchers working on pay inequality trends in the US. Like Britain, the US experienced a period of broad-based and rapid growth in pay inequality between the 1970s and the early-1990s, which has been superseded by a period in which overall pay inequality has continued to rise largely because of shifts at the top of the distribution (Autor, Katz et al. 2005; Lemieux 2006). In a sense, however, the debate about this shift in the US is one step ahead of that occurring in Britain. There, a number of authoritative studies have tested the ability of the formerly prevailing SBTC and institutional change hypotheses to explain the new evolution of the distribution of pay, and have generally found them to be unable to do so to any effective extent (Card and DiNardo 2002; Howell 2002; Lemieux 2006). As in Britain, though, alternative paths of theoretical reasoning about the factors underlying the new top pay bias remain very much at an early stage of development. Among these, perhaps the most promising possible explanations are the liberating impact of de-unionization on top pay, the increased prevalence of pay for performance, and changes in the relative demand for the types of tasks performed by workers in high-paying occupations (Lemieux 2007).³

Comparing the British experience of top pay bias with developments in similar countries, the evidence that this kind of trend has emerged in France and Germany is less clear. And, in any

³ Chapters three and four of this thesis address questions that relate to the first and third of these possible explanations.

case, the relevant analyses limit themselves to the description of change rather than attempting its explanation. In Germany, there is even a degree of ambiguity about the form of recent patterns of change. For example, Prasad (2000) looks at GSOEP household survey data for the period 1984-1997 and concludes that results for the early- and mid-1990s indicate that nothing changed after the 1980s – hence his phrase, ‘the unbearable stability of the German wage structure’. However, the most recent assessments of developments since unification argue that in the early-1990s a trend developed towards greater inequality, which has continued into the new millennium. Thus, Gernandt and Pfeiffer (2006), working with GSOEP data, state that wage inequality began an upward march in 1994, affecting all types of workers, with its impact largely confined to the lower half of the distribution. For his part, Kohn (2006) examines the large-sample IAB social security records data set for the period 1992-2001 and finds that not only has left-tail inequality risen, but also wage dispersion has increased above the median, although perhaps to a lesser degree. Consequently, the existing research finds little evidence of any top pay bias in the evolution of the German distribution of pay.

In France, it appears from the literature that the evolution of the distribution of pay in the 1990s does not differ substantially from the trends of the 1970s and 1980s, i.e., little change is observed. For instance, Piketty (2001) uses a long data series, derived from tax returns, to generate a picture of wage inequality trends among all types of worker during the period 1950-1998. His results are consistent with those of the 1970s and 1980s, and suggest that the p90-p50 ratio, at least, is even more stable in the 1990s than before. In contrast to other studies, Roux (2001), looking at DADS data for 1976-1998, finds a steady rise in the interquartile ratio of monthly earnings that begins in the early-1980s and runs up until the end of the series. However, this rise in pay inequality is almost entirely confined to the group of part-time workers, whose share of employment rises strongly during this period. The distribution of full-time monthly earnings – for men and women – tracks the largely stable path described by Piketty and others (Piketty 2001; Romans and Séroussi 2003; Ortega 2004). All the same, research in the 1990s focused on intra-organizational pay differentials suggested that inequality was on the rise in this dimension, as employers were increasingly treating managerial ‘cadres’ and other employees rather differently when making pay-setting decisions (Ponssard 2001; Barreau and Brochard 2003; Godechot and Fleury 2005). These findings open the door to the possibility that a form of top-tier pay inequality growth has taken hold, even if it has not yet been seen to feed through into broad labour market statistics.

In summarizing the literature discussed above, a number of key points are apparent. First, although overall pay inequality has been rising in Britain since the late-1970s, we may distinguish between a first period (lasting approximately from the late-1970s to the early-1990s) in which inequality increased across the distribution, and a second period (early-1990s into the new millennium) in which inequality only rose significantly at the very top of the distribution. Second, although in the first period Britain's experience of a broad-based rise in pay inequality contrasts with France and Germany's experience of relatively little change in the distribution of pay, it is arguable that the evolution of all three countries' distributions of pay during that time can be substantially explained with reference to SBTC and the fortunes of certain labour market institutions. Third, it seems less likely that SBTC and institutional factors can adequately explain the top-tier rise in inequality observed in Britain in the second period, not least because there is firm evidence from the US that they cannot explain a parallel trend there. Fourth and finally, looking closer to home, it is not clear that the top-tier rise in inequality observed in Britain in the second period has any parallel in France and Germany, which at least raises the possibility that parochial factors are at work. With these conclusions in mind, I now advance to discuss the scope and approach of the chapter's empirical analyses.

Empirical strategy and research questions

Collectively, the conclusions and open questions identified by my review of the literature outline a research agenda for this chapter. First, while a turn towards a top-tier bias in pay inequality growth has been noted for Britain, it remains at the moment only incompletely defined and poorly understood. Second, it is clear from the literature that there has as yet occurred little testing of explanations of such a top-tier bias, not least because the explanations themselves remain incompletely theorized. This chapter, therefore, seeks to cast light on both of these issues in relation to the experience of Britain, taking account of the historical evolution of its own distribution of pay, and placing it in comparative context by parallel study of developments in the similar countries of France and Germany.

The research design adopted by the chapter is, as noted above, comparative across time and across countries. Its use of econometric methods of analysis of large-scale (economy-wide), long time-series pay data for Britain, France, and Germany permits the identification of the

broad trends in question and their precise definitions. The inclusion of comparator countries in the analysis enables the testing of whether recent British trends constitute a general or parochial phenomenon, and thereby deciding which kind of explanation is most appropriate.⁴ The choice of comparator countries is determined by both their similarities and their differences. Britain, France, and Germany are all mid-sized economies at similar levels of development, and are located spatially and geopolitically in Europe. Thus, it is to be expected that all three countries are subject to the same set of ‘universal’ influences, such as technology or trade shocks. But, they differ substantially as regards labour market characteristics and institutional structures, and so one would anticipate that they would filter the impact of such influences in different ways. Indeed, the fact that they followed different trajectories in the 1970s and 1980s in the evolution of their respective distributions of pay – Britain experienced a considerable rise in inequality, while France and Germany exhibited less or no such change – is consistent with this notion. Consequently, variation in more recent or as yet unexplored aspects (e.g., the top tier) of the evolution of these countries’ distributions of pay may usefully aid identification of the underlying factors at work.

The research agenda of the chapter is intended as much as an exploratory and descriptive journey as an explanatory analysis. This is because the core subject matter – the evolution of pay in Britain at and above the top decile relative to the rest of the distribution between the late-1970s and the early-2000s – has yet to be closely studied. Consequently, part of the role of this chapter within the broader thesis is to establish descriptive facts about top pay phenomena as a foundation for the more focused and explanation-oriented chapters that follow.

With these aims in mind, the chapter is organized around two poles of enquiry. First, it seeks to establish the nature of the mooted shift towards a top pay bias in pay inequality growth in Britain. In doing so, it sifts the evidence for such a shift actually having taken place in the 1990s, and explores the extent to which it may constitute a novel development in Britain. Further, it poses the question of whether any such trend is specific to Britain, or whether evidence can be found of similar patterns of change in the similar countries of France and Germany. By addressing all of these questions, it is intended that the chapter establish a firm platform of descriptive fact on which to base the remainder of the thesis.

⁴ The prevailing explanations for the broad-based growth in British pay inequality in the 1980s were a mix of universal (SBTC) and country-specific (institutional change) varieties.

The chapter's second pole of enquiry concentrates on sorting through a set of possible explanations for the top pay bias in inequality growth. Following the literature review, it begins by taking the prevailing explanations for the broad-based growth in pay inequality observed in the 1970s and 1980s – i.e., general-skill SBTC and change in the form of labour market institutions – and testing for their contribution to the pay inequality growth observed in the 1990s at the top of British the labour market. As it is found that these factors are of low explanatory value when applied to the top-tier form of pay inequality growth that has become more prominent in recent years, the chapter then introduces an alternative approach to analysis. This other approach – labelled 'job analysis' – draws on the thinking and findings of a number of researchers in the US and UK who have themselves noted the increased prominence of top-tier pay inequality growth in their countries in recent years (e.g., Autor, Levy et al. 2003; Goos and Manning 2003; Lemieux 2007).

These researchers have argued that the pay trend at the top of the labour market is, like the broad-based growth in inequality that preceded it, consistent with an underlying shift in demand towards the types of individuals whose relative pay is affected by the trend. However, they have further contended that a trend of this variety, which is highly focused on a minority element of the labour market, requires an explanation that is itself capable of differentiating between the individuals whose pay behaves in line with the trend and those whose pay does not. They have proposed, therefore, to analyse change in the distribution of pay from the perspective of 'jobs' – which are operationally defined by the employee groups produced by the intersection of highly disaggregated occupation and industry classifications. The intention of this approach is to search for evidence of demand shifts for particular skills or characteristics that attach to particular occupations (or career ladders) and/or industrial contexts (which may imply that employer characteristics are important to the ultimate explanation). While not offering a complete explanation for top-tier growth in pay inequality, this analysis permits the identification of proximate causes and the generation of likely hypotheses about the nature of the underlying causes of change. Like the first analytical stage of this chapter, therefore, the job analysis is designed to expand the basis of fact surrounding the issue of (British) top-tier pay inequality growth, and to steer and underpin the more narrowly focused analyses presented in Chapters 3 and 4.

Data description

Both of the chapter's poles of enquiry draw on a common group of data sets. This group is composed of pay microdata for Britain (i.e., the UK minus Northern Ireland), France, and West Germany/the western Länder of the unified Germany (hereafter, 'Germany') for the last quarter or so of the 20th century, although it focuses its analytical efforts on the period since 1990. In the cases of Britain and France, I refer to two surveys for each country, one collected by employers and another conducted at the household level. For Britain, these are respectively the New Earnings Survey (NES) and the Labour Force Survey (LFS), and for France the Déclaration Annuelle des Données Sociales (DADS) and the Enquête Emploi (EE).

Regarding Germany, I use household data only – the German Socio-Economic Panel Study (GSOEP). However, there are strong reasons to believe that this data set provides a representative picture of pay inequality developments in the country. GSOEP household microdata have been analysed elsewhere in combination with employer-collected data (both the microdata of the IAB social security records data set, and tabular data of the Survey of Compensation in Industry and Trade published by the Federal Statistical Office), and the two different sources of data have been found to produce very similar results (pp.373-383, Abraham and Houseman 1995). In addition, studies of pay inequality that use one type of data corroborate the results of parallel studies that use the other type in any given period of overlap (Abraham and Houseman 1995; Fitzenberger, Hujer et al. 2001; Gernandt and Pfeiffer 2006; Kohn 2006). I limit my analysis of German data to the former West Germany for two reasons: to maintain coherent sample dimensions either side of the 1990 watershed of unification; and to maintain the comparability of the country cases, which would be compromised by introducing into the picture what is, in the shape of the former East Germany, in effect a transition economy.

While five surveys used are not identical in design, they all possess a set of key features that enable the following analyses to be conducted in a similar manner for different countries. First, they provide cross-sectional samples of individuals which are representative of the relevant populations during the survey period – national adult population, workers in employment, etc. Second, they all collect sufficiently detailed data on earnings and hours during the survey period to support the accurate calculation of a measure of effective hourly

remuneration (for at least a number of the years in question). Lastly, all of the surveys consist of long time series, permitting the description and analyses of trends in wages, employment composition, etc.⁵

As regards measurement issues, there are numerous ways of defining pay (and, therefore, pay inequality), each with its own implications for interpretation. For the purposes of empirical research, therefore, there is no single ‘best’ definition of a measure of pay. Rather, it is appropriate to use different measures to address different questions, for instance when these questions may implicitly or explicitly take the perspectives of different labour market actors. The remainder of this section of the chapter describes three key choices that must be made in relation to measurement in order to underpin my analysis of trends in pay inequality. These choices are as follows: the time period over which pay rates are to be calculated; the appropriate definition of ‘pay’; and the definition of the relevant sample for my analyses. The existing literature on pay inequality is rather poor guide to the matching of approaches to measurement to given research questions, as it almost exclusively consists of analyses of trends among gross hourly wages, no matter the exact focus of the paper.⁶ Puzzlingly, contributions to this literature rarely carry an explanation of why they make use of this measure rather than alternatives. Regarding its approach to measuring pay (and its distribution), this chapter in some respects follows the conventions found in the literature (e.g., by focusing on hourly amounts), but in others breaks from them (e.g., by concentrating on a measure of ‘compensation costs’ rather than on gross earnings alone).

A first step towards the definition of the appropriate measure of pay for the question at hand relates to the issue of the time period over which labour and its remuneration are recorded. This is important because the decisions of whether and how much to work, or how much and what sort of labour to buy, are ultimately decisions about resources that are finite in time. For instance, pay may be delivered in return for the number of hours worked in a week or month, as has traditionally been the case with blue-collar workers, or it may be delivered in the form of an annual salary whose amount is divorced from any exact specification of the hours to be worked, as has traditionally been the lot of white-collar and professional workers. As pay is a

⁵ The appendix to this chapter contains a detailed description of each of the data sets used.

⁶ Thus, studies of the impact of demand shifts on the labour market (cf. Blau and Kahn 1996; Johnson 1997; Acemoglu 2003) and studies of the political or societal implications of changes in pay inequality (cf. Atkinson 1999a; Pontusson, Rueda et al. 2002) alike make exclusive use of gross hourly wages in their analysis of pay inequality.

rate over time, examination of the distribution of pay across the economy implies the need for standardization of the time basis of pay across groups of workers paid on a variety of schedules. Although there is no single ‘best’ approach to standardization – the period over which standardization should be effected depends on the questions being addressed – this chapter standardizes wherever possible on the basis of pay per hour worked. This is because hourly pay is a more precisely defined measure than, say, weekly or monthly pay (e.g., one worker’s ‘week’ may be longer than another’s), and the ranking of pay outcomes that underlies the analysis of the distribution of pay encourages the use of the most precise measure of pay available.

When calculating hourly pay, a distinction must be made between contractual hours and the number of hours actually worked, as the latter quantity is often greater than the former. Use of contractual hours in the calculation of hourly pay, therefore, would risk the overestimation of the actual rate of pay for an unknown proportion of workers in a given sample. For this reason, this chapter uses data on hours worked for the calculation of hourly pay. All the surveys used in the empirical portion of this paper contain reliable data on hours worked, with the exception of the French data sets in the years prior to 1994, for which it is only possible to calculate pay rates on a daily basis.

For the definition of ‘pay’, a second key issue relates to the perspective of the labour market actor in question. This is owing to the impact of government policies of taxation and redistribution on the employment relationship, which ensure that the price of labour confronted by the employer is not equal to the price of labour received by the employee. For instance, ‘pay’ may refer to the earnings taken home by a worker at the end of each week, month, or year, net of income taxes, employer and employee social security contributions, and so on. Alternatively, it may refer to the costs incurred by the employer in order to engage a given type of labour for a given period of time. These costs would include taxes and social security contributions notionally paid by the employer and employee, plus fringe benefits and other non-pecuniary compensation. A third possible definition is that of gross earnings or wages, which comprise taxes and social security contributions paid by the employee, but exclude employer payments of this kind and benefits.

Each of these alternatives can be thought of as ‘pay’, and their differing distributions are of interest to particular types of study. For example, the net pay measure captures the

consumption wage, or the ‘supply price’ of labour – so called because it reflects the effective rate of compensation received by the worker in return for their time and/or effort, which forms the basis of the individual’s labour supply decisions. Consequently, the analysis of net pay inequality is informative in relation to study of the distribution of consumption or the question of social stratification. Labour costs form the price schedule facing employers under a given labour market equilibrium, and so form the starting point for employer decision making about (change in) such issues as employment composition, quantities, and so on. Therefore, the distribution of labour costs is of particular relevance to studies of patterns of labour demand and employer behaviour.

Gross earnings or wages, while often the default datum recorded in surveys of pay, and typically the measure of pay on which casual discussion of the labour market centres, ultimately do not directly steer the decision making of either party to the employment relationship. Furthermore, gross earnings are a particularly poor measure for use in international comparative and/or longitudinal analyses. This is because the point at which a measure of this type falls in the gap between net earnings and labour costs is influenced by the structures and notional apportionment of direct taxation, social security contributions, and benefits/social insurance charges. Thus, effectively, the nature of a nation or region’s government and welfare arrangements, or change in those arrangements, strongly influences the ‘meaning’ of a measure of gross earnings for the study of pay inequality in that locality.

In the countries of interest to this paper, for example, there is a great deal of variation in the relative importance in total labour costs of net earnings, income tax, and employee and employer social security contributions. Table 1 presents OECD data on the composition of labour cost for the UK, France, and Germany in 2002. It can be seen that gross earnings are a reasonable proxy for labour costs across the range of the UK labour market, as employer social security contributions are of limited scale (8% of labour costs) and are relatively non-progressive. In Germany, there is a greater disconnect between gross earnings and labour costs than in the UK, as employer social security contributions constitute 17% of labour costs (and are rather more progressive in form). France differs from the UK to an even greater extent, as employer social security contributions dwarf income tax and employee contributions to make up nearly a third of labour costs. In addition, French employer-paid social charges on employment are relatively more progressive again than those in the UK or Germany, and thus vary to a large extent from one end of the pay distribution to the other. As

a consequence of these differences, comparison of gross earnings across these countries is a rather difficult exercise: it is not necessarily a case of comparing apples with apples.

Bearing these observations in mind, and given that the explanations of change in pay inequality that are tested in this chapter are primarily concerned with the impact of demand shifts – that is, employer decision making – on the distribution of rewards in the labour market, this paper focuses as much as possible on pay defined as the price of labour facing the employer, i.e., labour costs. All the same, there are practical limitations on the extent to which this price can be calculated. For the most part, these constraints derive from the fact that the data sets used can only capture the cash element of compensation, and so exclude consideration of non-cash compensation, e.g., private pensions, share-based compensation, car allowances, etc. On this point, to the extent that such non-pecuniary compensation tends to be rising (non-linearly) in the cash wage (Pierce 2001), wage-based measures will underestimate overall compensation inequality, and in particular the fortunes of the most highly paid. In light of this fact, the inequality and top-pay results reported in this paper should be treated as conservative estimates. Similarly, if the typical mix of cash to non-cash compensation varies systematically across countries – say, in response to incentives created by the tax system – then this feature will bias comparisons of pay structures made among these countries. Evidence on executive compensation – such large pay packages are likely to reflect national tax conditions, etc. – suggests that French firms deliver a greater proportion of total direct compensation in the form of long-term incentives (e.g., options and shares) than their UK and German equivalents (p.41, Hay Group 2004). While this result does not consider the impact of indirect compensation (e.g., benefits such as pensions, life insurance, car allowances, etc.), it at least indicates that French results regarding cash compensation inequality will understate total compensation inequality to a greater degree than will those for the other two countries.

Practical constraints notwithstanding, I use a similar technique in all three countries to create an imputed measure of total cash compensation costs, i.e., total labour costs excluding private pension, insurance, etc., payments (or, gross earnings plus employer social security contributions). I contend that this metric is more appropriate than gross wages for the testing of hypotheses that turn on employer decision making (e.g., SBTC), as it takes account of any progressivity of employer payroll tax systems, and is sensitive to changes in the structure of employer payroll contributions over time. Certainly, it does not constitute a perfect measure

of the relative prices for different types of labour that face employers, as it does not capture the element of labour costs made up of private pension or insurance payments, payments in kind, training subsidies, and so on. However, as many employees receive no such 'extra' forms of remuneration, the distribution of cash compensation costs will approximate much more closely to that of total labour costs than will the distribution of gross wages.

Despite the application of a common method, it should be stated that the pay measures employed are not perfectly comparable across countries, or even across surveys within the same country, for the reason that they use different sampling techniques and slightly differing definitions of hours and earnings.⁷ However, all surveys use methods of data definition and collection that are consistent across time. Hence, any differences among the surveys can be treated as fixed effects that do not change over time, and can ultimately be factored out of analyses of trends and of change of the variety that feature in this chapter.

The third key choice to be made in relation to measurement concerns the definition of the sample for the analysis. Because the NES and DADS samples relate only to employees, the broadest common population across the three countries for which I can draw inferences is that composed of all employees in employment at the time of the survey. As a consequence, I exclude self-employed workers from my results. Evidently, the decision to exclude the self-employed would have implications for the comparative analysis of change in the distribution of employees' earnings if the relationship between the distributions of employment and self-employment earnings were significantly different across countries, and if there were significant variation in the profile of self-employment across countries and across time.

Regarding the first of these issues, there is little evidence of systematic variation across countries in the relationship between the distributions of employment and self-employment earnings. In all three countries, the distribution of self-employment earnings is more

⁷ The NES provides sufficient information to calculate the preferred form of wage measure; that is, total earnings in the reference week (including pro rata shares of compensation which is delivered on an irregular basis, such as annual bonuses) and total hours worked in the reference week. DADS is similar in scope, reporting information on total days/hours worked and total net cash remuneration during a given year (or less, if the job exists only for a portion of the year). In contrast, the LFS and EE ask the individual to report earnings received at the most recent pay date, and combine this information with data on usual total hours worked per pay period to produce their hourly wage measures. In the same way, the GSOEP wage measure used does not account for the impact of elements of compensation such as 13th or 14th month bonuses. As a result, the LFS, EE, and GSOEP pay measures tend to underreport earnings for a given individual. As irregular elements of compensation are likely to rise with the wage rate, these data sources yield perhaps more conservative estimates of the level and rate of change of pay inequality than the NES and DADS.

dispersed than that of employment earnings, and the self-employed are overrepresented in both the left- and right-hand tails of the distribution of all labour income (Blanchflower 2000; Torrini 2006). Further, Torrini (2006) studies European Community Household Panel data for 2001 to find that in all three countries the p90-p50 ratio for self-employment earnings is about a third greater than that for employment earnings, and that in Britain and France the p10-p50 ratios are arrayed such that inequality is about a third less among the self-employed. This pattern of consistency across countries is only broken by the observation that in Germany the p10-p50 ratio is about a third greater among the self-employed than among the employed. However, the impact of this difference appears limited, as a study of the evolution of the distribution of all labour income in Germany in the 1990s finds no connection between the rise in the rate of self-employment and change in the distribution of earnings (Gernandt and Pfeiffer 2006).

On the second point, Table 2 presents the evolution of self-employment in the three countries over the period 1970-2000. It can be seen that there is no common trend among the countries. Britain's self-employment rate expands greatly in the 1980s, but shows a pattern of steady decline in the 1990s; France evinces a trend of steady diminution in the rate of self-employment over the whole period; and Germany's rate dips mildly in the 1980s and rises – equally mildly – in the 1990s. In all three locations, the degree of change in self-employment is rather less in the 1990s than in the 1980s. Looking across countries, the self-employment rates are more similar at the end of the period than at the beginning. On the whole, therefore, the degree of difference in (change in) self-employment across countries is quantitatively minor, especially in the period after 1990, which constitutes the main focus of this paper. Coupling this observation with the finding that there appears to be little difference across countries as regards the relationship between the distributions of employment and self-employment earnings, it is reasonable to conclude that the exclusion of the self-employed from the field of the analysis will not systematically bias the results obtained for employees. Indeed, given the consistent preponderance of employment over self-employment in all three countries, it follows that the results obtained for pay inequality among employees may stand as a solid proxy for distributional developments among all types of workers.

Having presented the data to be used and my approach to measurement of the key variable, I now proceed to the analysis. The next part of the chapter addresses the first of my research questions, seeking to identify and describe in detail the mooted turn towards a 'top pay' bias

in the evolution of the British distribution of pay. Moreover, it attempts to establish the extent to which this apparent trend represents a novel development in the British labour market, and, through comparison with France and Germany, the extent to which it is (or is not) a parochial phenomenon.

Exploring the ‘top pay’ bias in British pay inequality growth

My initial concern in this section of the chapter is to look for evidence that will confirm the existence of the emergence of a ‘top pay’ bias in Britain in the course of the 1990s. In order to do this, I study the evolution of the distribution of pay using percentile ratios, which enable the tracking of the relative distance separating the median from other points in the distribution. I present these ratios in their log form, as this represents a useful approximation of the percentage differential between the median and each other point of interest in the distribution. Unlike most analyses of pay inequality, I calculate these ratios not only for the 90th and 10th percentile (or the upper and lower quartiles), but also for the 95th and 99th percentiles.⁸ This is because my reading of the literature has led me to believe that the greatest degree of change in the British distribution of pay from the early-1990s onwards has occurred in its upper reaches, and I wish to understand which parts of the top tail of the distribution are affected.

The evolution of the log percentile ratios for the sample of all employees in Britain, France, and Germany is presented for the period 1976-2001 in Table 3.⁹ I show the ratios for my preferred measure of pay – hourly compensation cost – and for gross hourly wages, as it may be seen that the two measures evolve almost in parallel, and the longer time series of the gross wage data enables a longer-term perspective than would be possible using only the compensation cost data. From the British results, it is apparent that overall pay inequality – however measured – has grown in that country throughout the period in question. It is reassuring that my gross wage results between the 90th and 10th percentiles are largely

⁸ As will be seen in my comparison of Britain with France and Germany, I can only calculate the 99th percentile in a robust manner for France and Britain. Unfortunately, the relatively small size of the German data sample (3,000-5,000 observations in each period rather than the 100,000+ in the British and French data sets) does not permit this statistic to be calculated with confidence, as it is too sensitive to the impact of outliers.

⁹ This is the complete period for which NES data are available.

consistent with the findings of existing studies that use this definition of pay: they show a rapid growth in pay inequality above and below the median between the late-1970s and the early-1990s, and a slowing of the rate of this growth during the 1990s. The finding that inequality growth was more rapid above than below the median in the 1980s is consistent with the findings of other NES-based studies, but to some extent contradicts the results of analyses based on the GHS and FES (e.g., Schmitt 1995; Gosling, Machin et al. 1996). However, this discrepancy is very likely to be due to the NES's documented lesser effectiveness than the household surveys in accurately capturing the evolution of the lower end of the pay distribution.¹⁰

For the purposes of this chapter, though, the most important British results in the table are those relating to the 95th and 99th percentiles. Both of these points of the distribution have moved considerably further away from the median than the 90th percentile, with the rate of change apparently rising in position in the distribution. Thus, looking at gross wages, the p99-p50 ratio rises by approximately 50% over the quarter-century in question, while the p90-p50 ratio increases by 30% or so. For the period in which the data series overlap, it appears that top-tier inequality of compensation cost has grown even more rapidly than that of gross wages. Unlike the ratios relating to the 10th and 90th percentiles, these statistics show no sign of growing more slowly in the 1990s. If anything, their rate of growth accelerates during this period relative to the 1970s and 1980s.

A helpful way of summarizing the evolution of the distribution of pay between two points in time is to plot the annualized rate of growth of pay at each percentile of the relevant distribution. In a plot of this kind, a flat line signifies equal rates of growth at every point in the distribution, with the result that rising average real wages would be accompanied by an unchanged pay structure. Deviations from a flat line signify differential rates of growth, and, thereby, change in the shape of the distribution. Figure 1 presents hourly compensation cost plots of this type for Britain, France, and Germany in the period between 1984 and 2001/2.¹¹ The figure consists of three plots in total: one for the whole period, and one for each of the sub-periods 1984-1992 and 1992-2001/2. The choice of 1992 as the intermediate point in the

¹⁰ Please see the data set descriptions in the appendix to this chapter for detailed explanation of this point.

¹¹ Note that the period ends in 2001 for Britain and France, and in 2002 for Germany. This minor difference is due to the fact that it is not possible to calculate the compensation cost variable for Germany in 2001. The dates 1984 and 2001/2 are chosen because they enclose the maximum duration for which data are simultaneously available in all locations (and therefore permit accurate comparison across countries).

series is intended to probe the above finding that the rate of change in the British distribution of pay fell in the early-1990s.

Illustrating the trends apparent in Table 3, the first element of Figure 1 clearly shows the bias of pay growth in Britain towards better-paid employees, there being a positive correlation between percentile rank and the rate of growth over the whole period. This relationship is topped by a noteworthy 'spike' in the growth rate above the top decile. The plots for the two sub-periods confirm that the growth spike above the 90th percentile and the positive bias towards the upper end of the distribution are durable features of the overall British growth pattern, although this latter trend is less pronounced in the heart of the distribution – i.e., between the 10th and 90th percentiles – after 1992. Further, these spikes are of similar orders of magnitude in both periods.

As a cross check on the NES-derived results for Britain shown in Table 3 and Figure 1, Figure 2 compares gross wage growth across the distribution for the NES and the LFS over the period in which the two pay data series overlap (1994-2001). The differences between these surveys are considerable as regards sampling and data collection techniques, and variable construction. Nevertheless, they both indicate the existence of sizeable growth spike during this period at the top of the distribution. While they are less consistent in the picture they paint lower down the distribution – particularly in its lower half – it is likely that these can be traced to their respective limitations in capturing the pay of lower-paid employees.¹² At the top of the distribution, though, there are no such concerns about the surveys, and the LFS results reinforce the conclusion that there has been a bias in relative pay growth towards the top tier of the distribution.

Taking stock of the findings in relation to Britain, four intermediate conclusions can be stated. First, the data examined here are consistent with the established literature on the evolution of British pay inequality in that they show a considerable rise in overall inequality in Britain since the late-1970s. Second, the results strongly support the notion that the pattern of overall pay inequality growth shifted in the early-1990s, with broad-based inequality growth (i.e., between the 10th and 90th percentiles) slowing, and top-tier inequality growth (i.e., that driven

¹² It is known, for example, that the NES is not fully representative of part-time and short-tenure employees, both of which types feature strongly among the less-well paid (Stuttard 2002). Regarding the LFS, the degree of measurement error stemming from the self-reported nature of that survey's pay and hours data is likely to be greater among the same groups of employees.

by pay at and above the 90th percentile) continuing to expand at a barely reduced rate. Third, it seems that the top-tier growth spike in British pay is as longstanding as the overall rise in pay inequality, that is, pay growth has been relatively much higher above the 90th percentile since the late-1970s. Thus, the top-tier bias in pay inequality growth is not a recent phenomenon – rather, it became more prominent in the 1990s as the distribution of pay below the 90th percentile began to crystallize. Fourth, given the different order of magnitude of relative pay growth above the 90th percentile, it seems possible that there have been two separate processes of change at work in the British distribution of pay since the 1970s: one relating to the broad-based expansion of pay inequality between the 10th and 90th percentiles that started to peter out in the course of the 1990s; and another relating to top-tier inequality growth that was still in full force at the end of the data series examined here. That these two trends appear to differ in form raises the possibility at least that they are driven by different underlying factors. With these observations in mind, I now turn to the French and German data to investigate the extent to which the top-tier bias in pay inequality growth is a trend specific to Britain.

Looking at the French data presented in Table 3, it is reassuring that the gross earnings¹³ results are consistent with those noted in the literature: the 1980s witnessed little change in the degree of inequality between median and the 90th percentile of the distribution of pay, and a steady compression of the differential between the median and the 10th percentile. The results indicate that gross earnings above the 90th percentile had a different relationship again to the median, with the gap first compressing (up to the early-1990s), and then expanding again. However, what is more interesting is that the compensation cost results appear rather different, and perhaps more redolent of the British experience.¹⁴ Thus, while the distribution of gross earnings has tended towards stability or compression over the longer term,¹⁵ the distribution of compensation costs provides evidence of rising overall inequality, and in particular a pronounced top-tier growth spike in relative pay above the 90th percentile. It appears, therefore, that the top pay bias observed in Britain is not a purely parochial affair.

¹³ Data on hours worked are not available for France before 1994, hence the French results in Table 3 are calculated based on daily earnings for full-time workers in the private sector.

¹⁴ There is a much looser correspondence between the gross earnings and compensation cost statistics in France than in Britain because in France employer social security contributions typically constitute a larger share of compensation cost and have a more progressive structure. In addition, the degree of progressivity of these contributions has changed substantially over time – rates for more highly paid employees have risen consistently since the early-1980s, and rates for the low-paid were reduced rapidly during the 1990s.

¹⁵ As a point of interest, the distribution of net (after-tax) earnings remains remarkably unchanged throughout the duration 1976-2001.

This impression is reinforced by the French results presented in Figure 1, which indicate that the relative growth spike at the top of the distribution in that country emerged at some point in the early-1990s, and that, while noticeable, is of a lesser degree of magnitude than its British equivalent.

In order to validate these results for France, however, a number of issues must be confronted with regard to the underlying DADS data. This survey presents a set of questions that derive from three sources: the absence of information on working hours in the key DADS series prior to 1994; the resultant need to restrict the reporting of the full DADS daily pay series (1976-2001) to full-time workers; and the omission of the bulk of the public sector from the DADS sample (amounting to approximately 25% of employment). The DADS results featured in Figure 3 address the first two of these points through comparison of the pattern of change of pay inequality indicated by the daily pay variable with the pattern generated by an hourly pay variable for the period in which they can both be constructed (1994-2001). Here, the plots indicate that, for full-time workers in the extended private sector,¹⁶ the relative growth patterns of hourly and daily compensation cost resemble one another very closely. The sole major difference among the series is that the rate of hourly cost growth is higher than that of daily costs, which is consistent with an across-the-board reduction in working hours among full-time workers. It has been shown elsewhere that the Jospin government's implementation of the 35-hour week, which was phased in across the economy between 1998 and 2002, had an impact of this kind (Lhommeau and Rémy 2005).

Comparing Figure 3's plots of the evolution of hourly compensation cost in the DADS series among full-time employees on the one hand and part-time employees on the other within the bounds of the DADS sample, it appears that the full-time series may overstate the degree of distributional change relative to that for both types of workers. However, when it is considered that the median of the full-time sub-sample – comprising only 70% of the total sample by 2001 – will sit well above the median of the broader sample, the shapes of the two plots resemble one another quite closely. Indeed, the only key divergence is the much less pronounced nature of the growth spike at the top of the distribution in the wider sample.

¹⁶ That is, the private sector plus the 'grandes entreprises', or government-controlled large firms operating in the market sector (e.g. GDF, EDF, SNCF).

This interpretation is reinforced by the evidence presented in Figure 4, which is derived from Enquête Emploi (EE) data for the same interval as examined in Figure 3. This survey, being representative of all workers in all sectors, permits the comparison of distributional patterns of change between the limited DADS sample and the sample of all workers. It further disaggregates these results by working-time status (full-time versus full-time plus part-time). While the EE reports lower rates of growth in hourly compensation cost between 1994-2001 (note that – unlike the others – these results are not annualized), the general bias of growth towards the top of the distribution is apparent, and the different measures derived from differing samples all move very closely together, apart from in the topmost 5% of the distribution. The divergence here between the EE and DADS results is due to the smaller annual sample sizes available in EE, which has the effect of making the very top and bottom tails of the distribution much more sensitive to the impact of outliers (in particular, those which are artefacts of measurement error).

Considered jointly, the evidence of Figures 3 and 4 indicates that the relative growth patterns of daily and hourly compensation cost across the DADS and EE samples resemble one another closely during this period. This in turn suggests that the longer DADS full-time daily compensation cost series employed in Table 3 and Figure 1 is a reasonable proxy for its unknown hourly equivalent for all workers in France, and therefore that the conclusions reached above about the evolution of the French distribution of compensation costs are robust.

The German results presented in Table 3 and Figure 1 are less extensive than those for France and Britain, the relevant data series not beginning until 1984, and the relatively small sample size of the survey not permitting the robust calculation of the 99th percentile of the distribution. However, the overall picture that they present of changes between the 10th and 90th percentiles of the distribution – of pay compression in the 1980s, followed by the expansion of inequality in the 1990s, especially below the median – is reassuringly consistent with the story that emerges from the literature.¹⁷ It may be noted that the distributions of wages and compensation costs do not evolve in as different a manner as in France, but are not as closely linked over time as in Britain. This is because the incidence of employer social security contributions became slightly more progressive during the 1980s, but then became

¹⁷ The lower-tail result of growing inequality in the 1990s is likely to be exaggerated in relative terms by the methodological differences among the surveys – the French and British surveys tend to undersample those in the lowest-paid and most precarious jobs; and the GSOEP's self-declared earnings variable is more susceptible to measurement error, which is magnified in the case of this type of job.

slightly less progressive again in the 1990s (OECD 2004b). Whether gross wages or compensation costs are considered, however, there is little evidence of any top-tier growth spike in any period in Germany (at least, up to the 95th percentile). Instead, what notable change has occurred can be traced to the lower tail of the distribution in the 1990s. These findings are consistent with the conclusions of other studies of the evolution of the German pay distribution which have used employer-collected data (e.g., Abraham and Houseman 1995; Kohn 2006). Fundamentally, therefore – and in contrast to Britain and France – no evidence can be found of a top-tier bias in the development of the German distribution of pay, even in recent years.

Summarizing these results, then, it appears that the top pay bias in the evolution of Britain's distribution of pay is real and substantial, and has deep roots, having its origins in the late-1970s. That this trend continued almost unabated throughout the length of the data series examined here, while broad-based pay inequality waxed and waned, suggests that two separate dynamics of change have perhaps been at work. In comparative perspective, neither France nor Germany has experienced such prolonged or sizeable change at the tops of their respective distributions of pay. Indeed, Germany has shown little sign of any growth bias towards top pay at any point in the years studied. France, in contrast, appears to have developed its own top pay bias in the course of the 1990s, but it is of a relatively lesser magnitude than the one found in Britain, and can only be observed in the distribution of compensation costs (rather than gross wages or earnings). These comparative results indicate that whatever factor is (or factors are) driving the British top pay trend is unlikely to be a purely British phenomenon, as a form of this trend may also be seen in France. However, we may conclude either that the impact of this factor is damped by other variables in Germany and France, or that it is magnified by circumstances that are particular to Britain. Having addressed the first research question of this chapter, I now advance to the second, investigating what lies behind the pattern of growth of British top-tier pay inequality that has been established above.

Analysis of factors underlying top-tier growth in pay inequality in Britain

This section of the chapter is composed of three elements. In the first two of these, I test for the contribution of the prevailing explanations of pay inequality growth – general-skill SBTC and change in labour market institutions – to the phenomenon of top-tier inequality growth. The third element presents the results of my job analysis of change in relative pay at the top of the labour market.

SBTC and general skills

The first of the prevailing explanations for pay inequality growth is the general-skill version of the SBTC hypothesis. The origins of this explanation for rising pay inequality can be traced back to a number of influential studies of the growth in broad-based pay inequality observed in the US and UK from the 1970s onwards (e.g., Johnson 1997; Machin 1998). Studies like these noted the puzzle of the simultaneous rises in those countries of the relative supply of highly educated labour and the relative compensation of this type of labour. Examining the issue through the lens of a supply-and-demand model, these studies for the most part inferred that, for both relative supply and wages to have risen at the same time for more highly educated labour, there must have occurred an underlying shift in relative demand towards the skill characteristics of this type of labour. It was generally concluded that the most plausible explanation of such a ‘universal’ shift in relative labour demand was the increasing adoption by employers across the developed world of rapidly improving information and communication technologies [ICT], which were proving to be complementary with high levels of general skills.

Perhaps partly because of ease of measurement and data availability, but mostly because the data supports the contention, the literature on SBTC and pay inequality defines ‘skills’ almost exclusively in relation to general skills – that is, levels of achievement within the general education system. One inference we may draw from this framework, therefore, is that across-country differences in pay inequality trends must be linked to some extent to different patterns of evolution across countries of the relative supply of general skills. As the evidence found in relation to the first set of research questions of this chapter showed that Britain’s experience of a significant and longstanding top pay bias in inequality growth has not been fully

replicated in France and Germany, this implies that, if SBTC is a contributor to the growth of top-tier pay inequality, there must be significant differences across countries as regards the evolution of their relative supplies of general skills, and high general skills in particular.

In this analysis, therefore, I test the SBTC hypothesis's twin assumptions of similarity of change in relative labour demand and difference of change in relative labour supply across countries. I do so by applying a simple supply-and-demand model for different educational groups to the data. This approach enables me first to look at change in relative skill supply patterns – as defined by the standard of education levels – and then at the implied shifts in demand that would reconcile these patterns with observed changes in the distribution of pay. To the extent that I find similarity across countries relating to change in labour demand and difference relating to change in labour supply, I will be able to confirm the contribution of SBTC to the observed differences in the evolution of top-tier pay inequality across countries. I conduct my analysis on data relating to the decade or so after the turn of the 1990s, because it is the period in which the top-tier growth in pay inequality is most marked.

The period for which comparable data on education levels and pay are available for all three countries runs from 1993-2002. However, it is possible to track education trends alone on a longer-term basis. Table 4 reports estimates of the distribution of each country's adult population, aged 16-65 inclusive, among six broadly comparable education groups for the years 1984, 1993, and 2002. These groups are chiefly modelled on UNESCO's International Standard Classification of Education 1997 (ISCED),¹⁸ corresponding to the achievement of qualifications at each of ISCED categories 1-5, plus a category for those holding no qualifications. Regarding the population share of the highest skill group ('degrees or higher'), Britain exhibits the highest growth between 1984 and 2002 (approximately 175% versus 100% for France and Germany). However, as this measure grows most rapidly in Britain in the first half of this period, both France and Germany exhibit higher levels of growth than Britain in the second period (approximately 50% in both versus Britain's 37%). If we assume that relative labour demand for high general skills has shifted at a similar rate in all countries, these results might suggest that Britain's relatively prominent top-tier bias in pay inequality growth in the 1990s and early-2000s is linked to a relatively lower rate of educational upgrading than that observed in France and Germany. However, they would also raise the

¹⁸ See http://www.unesco.org/education/information/nfsunesco/doc/isced_1997.htm for details.

question of whether this measure had any connection to top-tier pay inequality growth, as Britain experienced different trends in the 1980s and 1990s as regards the growth of high general skills, yet also experienced a fairly constant shift towards higher top-tier pay inequality in both decades.

In order to probe this question fully, I conduct a more systematic analysis of change in the relative supply of general skills and in pay inequality, calculating their implications for change in relative demand. Assuming that the labour market approximates to a simple supply-and-demand model, changes in the relative prices of general skills – that is, of educational qualification categories – can be interpreted as a function of the relative supply movements of these labour types and shifts in the skill demand bias of employers. In order to concentrate on the relative fortunes of the top tier of the labour market, I analyse shifts in supply, pay, and demand through a relative measure that compares the experience of those with the highest level of qualifications with that of all other education groups. I present the results of this analysis in Table 5.

The relative supply measure is calculated as the annualized percentage change in the supply ratio of the two groups in question. These statistics are computed for each country from two different samples: one representative of the population between the ages of 16 and 65, representing potential labour supply; and another representative of the active population between the same ages, which is perhaps a better estimate of the supply of labour available to employers in the short term. Comparing across countries, these results confirm the initial impression of steady educational upgrading in all three locations. However, while the magnitude of the annualized supply shift is very similar in Britain and France, Germany experiences a more rapid rate of relative skill supply growth. The shift in the important degree/no degree relative supply ratio runs at about one percentage point higher per annum in Germany when considering the results for the active population. Surveying these results as a whole, all three countries undergo steady educational upgrading between the early-1990s and early-2000s, but in Germany this process is more rapid than elsewhere.

Turning to the question of pay, I calculate a measure which captures the annualized percentage change in the relative hourly compensation cost of the two education groups of interest. I do this by running simple human capital regressions on individual-level pay data for each annual cross section of the data for each country. The regressions are of the form

$$\ln(W) = \alpha + \beta E + \delta X + \varepsilon$$

where W represents the individual's gross hourly compensation cost, E is the dummy variable (or set of dummy variables) capturing the differential between the educational groups in question, and X is a set of control variables comprising sex, potential experience, and tenure with the current employer. The compensation cost shift measure is calculated as the difference between the respective values of β , the coefficient on the educational dummy variable, at the start and finish of each time period reported. Once annualized, this represents the yearly shift in the average hourly compensation cost of the better-paid educational group relative to that of the lesser-paid group, expressed as a percentage of the lesser average, and controlling for the factors listed above.

The results for relative pay in part follow a pattern similar to that for relative supply. In Britain and France this measure is virtually static for the degree/no degree groups, whereas in Germany it attains the rate of -0.4% per annum. Thus, in line with the expectations of the model, higher rates of relative supply shift are accompanied by lower rates of relative compensation cost growth.

To round out this section, I combine the supply and pay shift results to derive an estimate of relative demand movements during this time. I construct this implied demand shift measure as

$$\Delta D = \Delta S + \sigma(\Delta W)$$

where ΔD refers to the annualized relative demand shift between the two educational groups during the period in question, ΔS and ΔW denote the corresponding supply and pay shifts, and σ represents the elasticity of substitution between the two groups. I assume a value of 1.5 for σ , which is in accordance with empirical estimates of its value (Johnson 1997; Machin 1998). For the degree/no degree groups, the familiar pattern emerges that Britain and France

experience very similar rates of change – at least, when considering the active population estimate – while in Germany the rate is a half percent per annum higher. Relative supply and demand shifts for high/lower skills, therefore, appear to be more or less in balance in the first two countries during the period in question. In Germany, however, the supply shift outstrips the demand shift by a clear half percent per annum.

Collectively, these results indicate that relative demand shifted in all three countries towards high general skills (or education) during the period in question. Moreover, this shift has been of a broadly similar magnitude in all locations. However, they also suggest that the relative supply of high general skills has shifted more or less in alignment with the shift in demand. This is especially true of Britain and France, although the relatively higher rate of educational upgrading that occurred in Germany may have contributed to the relative lack of change in the country's compensation cost distribution above the 60th percentile during this period. What is not visible in these results, though, is evidence of clear differences between countries as regards the evolution of their relative supplies of general skills, and high general skills in particular. It is highly unlikely, as a result, that technological change biased towards high general skills is a key factor underlying Britain's (and, to a lesser extent, France's) trend towards increasing top-tier pay inequality. Having arrived at this conclusion, I now turn to consider the second of the prevailing explanations of rises in pay inequality.

Labour market institutions and upper-tail pay inequality

The research literature on the broad-based increase in British levels of pay inequality from the 1970s in the early-1990s has tended to conclude that changes in key labour market institutions relating to pay setting had contributed to the observed rise in inequality. The key institutions are chiefly defined as those of collective pay setting (i.e., unions and collective bargaining) and minimum wage mechanisms. Typically, it has been surmised that the progressive weakening of these classes of institutions in this period contributed to the broad rise in pay inequality in Britain, just as their relatively unchanged strength in France and Germany in the same period contributed to the lower degree of change in the distributions of pay in those countries. However, given that the direct influence of these institutions on pay is felt largely in the lower tail of the distribution, the question arises as to how they might be relevant to the study of change in pay inequality at the top of the distribution. Certainly, this is true of minimum wage mechanisms, which by definition only affect the lowest paid. And, as the

great majority of highly paid employees do not participate in any collective pay agreement – no matter the country in question – it also seems true of institutions of collective pay setting (Bournois and Livian 1997).

All the same, while there may be no direct influence of collective pay setting institutions on top pay, some research makes the case that there may be an indirect relationship in this area (DiNardo, Hallock et al. 2000; Tzioumis 2005). Essentially, these studies use organization-level data to show that – *ceteris paribus* – the presence of unions and collective pay setting institutions has an inhibiting effect on top pay within the organization. Furthermore, the stronger these institutions' presence within the organization, the greater is the inhibiting effect. One can make sense of this finding by interpreting it through a model that assumes that employers have a fixed compensation budget – in the short term at least – and that relatively more pay for one group of employees implies relatively less pay for another. Consequently, if, as has been argued since Hicks (1932), unions and institutions of collective pay setting tend to raise pay levels for those they directly cover above the market equilibrium that would obtain in their absence, this would mean that higher collectively bargained pay for directly covered employees would mean lower pay for those not covered, including highly skilled and managerial employees. Conversely, this model would also imply that, were the collective pay setting institutions weakened, there would be room for relatively greater pay growth at the top.

A model of this kind is consistent with Dunlop's argument that unions work on the principle of maximizing their members' share of the pay bill (Dunlop 1944). In addition, the idea that such a model captures a significant feature of the reality of employer behaviour is reinforced by the anecdotal evidence gathered by experienced compensation consultants working in the UK. These individuals have noted (in private conversation) that pay budgets in organizations are typically quite 'hard'. This is to say that the finance function sets the pay budget at the start of each year, and it is not usually revised in the course of the year. Instead, managers must work within this overall constraint, which means that relative pay decisions are effectively of a zero-sum nature: if one individual or group is to receive a relatively high pay increase, another individual or group must receive a relatively low increase.¹⁹ Anecdotal

¹⁹ While this sketch is broadly representative of company practice, there is non-negligible variation by industry type and organizational size. Large companies and companies operating in relatively low margin or labour-

experience suggests that this is particularly true of companies in which collective bargaining takes place. The impression that ‘hard’ budgets are a reality in as far as pay is typically managed is supported by academic research on the subject (Brown, Marginson et al. 2001). Overall, therefore, the evidence supports the notion that institutions of collective pay setting may indeed have an indirect impact on top pay, with the fortunes of one being negatively related to the fortunes of the other.

Turning to the data to test this proposition, Table 6 presents basic information on its evolution in Britain, France, and Germany, as measured by the familiar variables of union membership density and collective contract coverage. Between the early-1980s and early-2000s, it can be seen that Britain experienced rapid declines along both dimensions. While both France and Germany experienced declines in union density, with the proportionate decline being particularly high in France, both countries underwent little change or slight growth in bargaining coverage rates. It is noticeable that the country that experienced the greatest and most persistent rise in top-tier pay inequality – Britain – is also the one whose institutions of collective pay setting have been weakened to the greatest degree. Similarly, France has recently experienced a measure of this type of rising inequality, and its institutions have been weakened to the next greatest extent. Finally, Germany, which has seen little or no rise in top-tier pay inequality in this period, has seen the least degree of institutional retrenchment of the countries examined.

Interpreting these results using the model described above, therefore, the correlations in the data support the hypothesis that institutional change has a hand in the issue of rising top tier pay inequality. All the same, these remain relatively loose correlations, and it may be argued that the model underpinning this conclusion is open to contention. Furthermore, while the weakening of collective pay setting institutions might be understood as a ‘pull’ factor on top pay (i.e., this process might create space into which top pay might expand), one would expect that profit-maximizing organizations at least would require a simultaneous ‘push’ factor on top pay (such as SBTC) to encourage them to raise top pay in relative terms and thereby move into the space created by the ‘pull’ factor. Consequently, the indirect influence on top pay of change in institutions of collective pay setting is best understood as an enabling device, but not as a proximate cause of rising top tier pay inequality.

intensive industries are much more likely to manage pay in this way than smaller companies or those with high profit margins or high capital intensity.

‘Jobs’ and change in the distribution of pay

The above analyses lead to the conclusion that the prevailing explanations of rising pay inequality, developed in response to the observation of rising broad-based pay inequality, cannot also explain the rise in top tier pay inequality noted in particular in Britain. This element of the chapter, therefore, looks for an alternative explanation of change by subjecting the data to a ‘job’ analysis.

To recap, the key observation yet to be explained is that compensation costs have grown markedly more quickly above the top decile than at other points in the distribution in Britain over the quarter-century ending in 2001. This bias in growth rates toward the top is repeated above the top decile, with, for instance, the 99th percentile growing much more rapidly than the 90th. To give an idea of the relative magnitudes of change, between the late-1970s and early-2000s the 99th percentile has consistently grown twice as quickly as the 50th percentile, and half as quickly again as the 90th percentile. These, then, are highly localized trends within the broad labour market, which may only be accounted for through equally specific explanations.

Perhaps the most plausible foundation for such an explanation is that these changes have been driven by some form of relative shift in the pattern of labour demand. However, this chapter has already remarked that the predominant version of this type of explanation, the general-skill version SBTC hypothesis, does not adequately account for the top-tier rise in pay inequality. This is because the most common understanding of skills within the SBTC framework is ill-suited at a conceptual level to capture the kind of highly focused change embodied by top-tier pay inequality growth. Thus, the general-skill version SBTC hypothesis conceives of and operationalizes skills in terms of educational groups – ‘less than high-school degree’, ‘high-school degree’, ‘college degree’, and so on, in its classic US formulation. This is because educational groups are thought to capture the broad differences in skills that correspond to the boundary between old, skill-neutral technologies and the new, skill-biased ones. For example – this argument goes – let us take the case of computers, which are a kind of archetype of the new workplace technologies of the last two or three decades. They are a useful tool for the analysis of information, hence their introduction will bias labour demand

towards analytical and interpretative skills of the kind taught at university, and therefore towards the repositories of those skills, university graduates (Krueger 1993). This approach to defining skill is helpful when one is trying to explain price shifts across the breadth of the pay distribution, but is less relevant to the present case, where the relative price shift is confined to the top ten percent or so of employees, as there is less variation in education within this group than is found across the whole working population. This particularly true when we consider that now in the developed economies a comparatively large share of workers holds first or advanced university degrees (e.g., 18% of the British labour force in 2002, according to the LFS), which share exceeds the size of the group of top earners in which this section is interested.

Of course, this is not to argue that the kinds of price shifts visible at the tops of the British and French labour markets are not due to an underlying shift in relative demand of the kind imagined within the general-skill version of the SBTC hypothesis. Nevertheless, the concept of skill and its operationalization require some degree of rethinking if a version of the broader shift-in-relative-demand hypothesis is to be put to the test to explain developments at the top of the pay distribution. First of all, the narrowness of the group of workers involved in this price shift implies that any plausible definition of 'skill' should itself be narrow. This means moving beyond the level of detail generated by broad educational groups. Second, while there is no doubt that top earners have amassed considerable human capital, they are likely to be some way into their careers and therefore to have built up a large proportion of this capital in the period after leaving the general education system. Measures of skill based on educational attainment are as a consequence likely to capture only a small share of a high-earning individual's actual stock of human capital. The same argument applies to skill measures based on age or years of experience, as these are independent of the learning experience associated with a given career.

What is required is a measure that recognizes that high earners are typically individuals with a number of years' experience in a particular line of work. For instance, executives form a group of highly paid employees, and they are normally individuals with 20 or more years' experience in their particular line of work (general management, finance, marketing, HR, etc.). Their human capital, therefore, is more or less functionally or occupationally specific. A similar argument can be made about other groups of highly paid employees, such as senior professionals (lawyers and accountants in particular), financiers, and so on. Taking this into

account, it would appear that the value of these varieties of human capital might best be captured by a measure that captures the intersection of job content and experience in that particular field. That employers themselves think of the value of highly paid employees in these terms can be seen in the format of job advertisements for senior positions, which often state that candidates must have a certain number of years' experience in a given type of role if they are to be considered.

These observations suggest that the critical human capital variable for highly paid work will be linked to experience in a particular line of work rather than to general educational attainment. In other words, the most valuable forms of human capital are specific to particular jobs or occupations. For the purposes of operationalizing this variable, then, we must find a variable that captures both job content (in terms of tasks, specialized knowledge, and/or competencies) and experience in that area. One such candidate emerges from Goos and Manning's (2003) study of 'work polarization' in Britain. In the course of this research, they propose the 'job' – defined by the intersection of occupation and industry classifications – as a unit of analysis of various labour market phenomena, wage inequality included. By virtue of the ways in which occupational and industry classifications are constructed, this approach captures both the key dimensions set out above. Thus, 'job content' is defined by the two conceptual dimensions that typically underlie occupational classifications: the task composition of work in the job; and the skill requirements for the competent performance of the job, with 'skill requirements' being limned in terms of 'skill level', which in early career is linked to the length of study or training necessary to perform the job, and in later career by the appropriate 'skill specialization', or acquired specific knowledge underpinning the job. The use of an industry classification adds another level of detail to this notion of skill specialization by focusing it on a particular productive activity, which is important for many fields of work.

The initial results of application of this mixed occupational-industry variable to analysis of the increase in pay inequality in Britain in the period between 1975 and 1995 are very encouraging. Goos and Manning (2003) find that much of this increase can be accounted for by quantity (employment) and price (wage) shifts that operate at the level of the job. Thus, it is less a case of rising within-group inequality than of increasing inequality between groups defined by jobs. This finding runs counter to the conventional wisdom that rising pay inequality – in Britain and the US, at least – is strongly characterized by growth in within-

group inequality, with groups typically being defined along the standard Mincerian dimensions of age, experience, and educational achievement. However, as Goos and Manning suggest, this consensus may simply be a product of the structuring of analysis around the ‘wrong’ groups, as the more detailed groups demarked by jobs capture distributional changes far more effectively than broad categories such as education and experience (pp.21-22, Goos and Manning 2003). Because of its fine-grained nature, this approach recommends itself for the exploration of top-tier pay inequality trends. In this element of my analysis, therefore, I apply this job-level framework to the data in order to understand more clearly the evolution of top tier pay inequality in Britain between the late-1970s and the early-2000s, and also to place this evolution in comparative context by investigation of developments in France and Germany.

In accordance with the above conceptual discussion of ‘skills’, I employ a basic definition of a ‘job’ that assigns individuals to groups identified by the intersection of occupational and industrial classifications. This definition may be interpreted as collating individuals who hold similar qualifications and perform similar tasks in similar organizations. I use NES, DADS, and GSOEP data and concentrate on the ten years following 1992, as this is the period for which the most closely comparable data series are available across the three countries, and the period in which international difference in top-tier pay inequality trends is most pronounced. I standardize the occupational and industrial classifications across the three data sets, choosing to work with the 1988 ILO International Standard Classification of Occupations (ISCO-88) and the 1993 Nomenclature statistique des Activités économiques dans la Communauté Européenne (NACE revision 1). The former is available at the 2-digit level for France and Germany, and the 3-digit level for Britain. The latter is deployed at the section level, yielding 13 categories, and is only available for Britain and France. As will be seen, though, the absence of industry data for Germany is not catastrophic because of the low importance of the industry dimension relative to occupation in the explanation of change.

The method of the analysis is relatively straightforward. To begin, I assign individuals in each yearly cross section of a country’s data series to ‘job’ cells (i.e., the cells formed by the intersection of the occupation and industry classifications). I then calculate the median compensation cost and employment share of each cell in each year, and express these statistics as proportions of their respective values in the initial year of the series. Subsequently, I take the initial year’s individual distribution of compensation costs and apply

the cell-level multipliers (i.e., compensation cost and/or the employment share weight) to this distribution for each year of the series. This method produces a counterfactual individual-level distribution of compensation costs for each year in the series, which (where both multipliers are used) reflects the distribution that would have resulted had every individual's compensation cost evolved at the same rate at the median of the occupational-industry cell to which their job belongs, with this distribution being weighted to reflect changes in the occupational-industry composition of employment. Inequality statistics of the kind used above (percentile ratios) can then be computed for this counterfactual distribution in each year, and compared to the corresponding statistics derived from the actual distribution of compensation costs in that year.

I present two sets of results from this process. First, I calculate the counterfactual distribution series applying only the cell-level employment share multiplier, which shows how the initial year's individual-level distribution would have varied had relative prices remained fixed while the employment share of each cell followed its historical evolution. Second, I repeat the exercise, but apply the cell-level compensation cost multiplier as well, resulting in a counterfactual distributional series that varies by both the employment share of jobs and shifts in the relative price structure of jobs. Consequently, I am able to probe whether changes over time in the shape of the top of the actual distribution of compensation costs are due to high relative employment growth among top jobs (or occupation-industry cells), to price shifts between jobs, or to other factors.

I present the outcomes of this analysis through the evolution of the percentile ratios that summarize the actual (historical) and counterfactual distributions. The relative shifts of the two distributions can be effectively captured by plotting these statistics graphically. Figures 5 and 6 are presented as examples of this type of plot. As it would be unwieldy to present all the results in graphical form, I instead summarize them in Table 7. For each inequality statistic (percentile ratio), the table displays the extent of its change over the period from 1992 to 2001 inclusive, and the proportions of this change explained by each of the counterfactual series (variation by job quantities only, and variation by both job quantities and job median prices).

The first stage of the analysis defines jobs purely by 2-digit occupation. This simple form is inspired by Goos and Manning's (2003) discovery that the bulk of the explanatory power of

the job approach stems from the occupational dimension. The British results presented here are consistent with this finding, as occupational quantity changes alone can account for virtually all of the change in the distribution in this period between the 90th and 10th percentiles. Above the 90th percentile – the zone of the distribution in which this chapter is most interested – this definition is less successful in accounting for change than it is below it. However, it still captures approximately a third of the rise in top tier (i.e., above the top decile) pay inequality. A second stage of the analysis defines jobs through the interaction of the 2-digit occupation and 1-digit industry classifications. This approach is on the whole more effective than the occupation-only job definition in explaining top-tier inequality shifts, capturing fully one half of the change over time. These results indicate that while the industry dimension adds little explanatory power to the analysis of change below the 90th percentile, it is more relevant to trends above this level in the distribution. However, the evidence suggests that even in this part of the distribution the industry dimension remains subordinate in explanatory terms to the occupational dimension. This impression is reinforced by the results of the interaction of 3-digit occupation with the industry variable.²⁰ At this level of detail, job-level quantity and price shifts can explain more than two thirds of the rise in top-tier pay inequality in Britain, leaving little room for more disaggregated definitions of industry to contribute to the analysis.

Turning to the other countries, it is apparent that the job framework is less relevant to the explanation of distributional change in those locations, although there is variation in its applicability across countries. Certainly, it appears less able to explain change in the pattern of top-tier compensation cost inequality trends in Germany than in Britain, although the absence of an industry variable might reduce its ability to account for pay inequality outcomes. Consequently, there is only a first stage of analysis of the German data, which defines jobs by 2-digit occupation. The results indicate an ‘over-explanation’ of change when only changes in relative job quantities are considered, and an ‘under-explanation’ when both relative job quantities and prices are analysed. This pattern suggests that shifts in inequality at the top of the German pay distribution are not closely correlated with either definition of ‘job’. Still, there is comparatively little change in this area to be explained. Indeed, the four point rise in the 95-50 percentile ratio between 1992 and 2002 implies that there is more inequality growth at the top than is in fact the case: the rise in inequality during this period

²⁰ This level of detail is permitted by the British data only.

between the 60th and 95th percentiles is essentially zero. This is to say that the apparent rise in inequality at the top embodied in the 95-50 percentile ratio is in fact driven by rising inequality below the 60th percentile, rather than by rising inequality above the 90th percentile, as observed in Britain and France.

In contrast to Germany, the job framework appears at least partially relevant in France, where the nature of top-tier inequality growth somewhat resembles its British counterpart. While the first-stage analysis using the occupation-only definition of jobs does not explain much of the growth of top-tier pay inequality, the second-stage analysis using occupation and industry appears more relevant. Here, it explains approximately 20% of the rise in pay inequality above the top decile. This finding suggests a key difference with Britain, though, for it appears that in France the industry dimension is more important than occupation when accounting for change at the very top (99th percentile).

Summarizing across countries, therefore, the job framework captures a significant portion of the recent rapid growth in top-tier pay inequality in Britain, a moderate share of the less striking rise in this metric in France, and has little to say about Germany, where in any case there is little top-decile change to analyse. Interestingly, whereas the occupational dimension of the most detailed definition of 'jobs' (i.e., of occupational-industry cells at a substantial level of disaggregation) predominates as regards explanatory power in Britain, it is the industry dimension that is most informative regarding relative shifts at the very top of the French pay distribution. These patterns invite further investigation. On the inference that these relative price shifts denote underlying imbalances between the forces of supply and demand, it would appear that demand growth is outstripping supply growth for the types of skills attaching to certain jobs that cluster in the upper reaches of the French and British pay distributions. Which jobs are these, however, and what skills do they require? Further, is it the case that similar skill sets are in (outside) demand in both countries, or are there country-specific patterns? Lastly, why is there no comparable top-tier inequality growth trend in Germany?

In order to address these questions, I build on the preceding analysis by examining the relationship in each country between a job's median initial compensation cost and the proportionate change in its overall share of the total (national) compensation cost bill during the course of the 1992-2001 period. For the purposes of the graphs presented, I define 'job'

by 2-digit ISCO occupation alone. Where the above job analysis is shown to capture a large share of distributional change, this indicates that the change is largely characterized by between-job price and quantity movements. In these cases, jobs whose compensation cost bill shares change by significant amounts are likely to be those that are stretching or compressing the overall distribution. In relation to shifts in top-tier inequality, therefore, I wish to identify relatively highly paid jobs that exhibit relatively high or low rates of cost bill share growth.

For Britain, the principal driver of rising top-decile inequality appears to be the ISCO category of ‘corporate managers’, that is, managers in medium and large organizations (ISCO 12; see Figure 7). The compensation cost bill share of this group rises more than three times as quickly as any other job, and it is the second highest-paid job at the start of the period. Aside from this group, only a handful of professional, associate professional and technical, and service and sales jobs experience any growth in their cost bill share. In addition, all other cost bill share shifts, positive or negative, are small by comparison. Figure 8, in which the plotted points are scaled by the employment share of the job in the initial period, shows that the ISCO 12 group is a relatively large one. Consequently, the outsize growth rate of its cost bill share is likely to have a significant impact on the overall shape of the upper tail of the pay distribution.

By exploiting the availability of 3-digit occupational data for Britain, it can be shown that the 2-digit pattern is almost entirely driven by ISCO group 123, ‘specialist managers’ in areas such as finance, marketing, and IT, although ISCO group 121, ‘directors and chief executives’, also contributes. As there is no reason to suspect that the supply of these types of workers/skills has been substantially inhibited in the period observed, one may infer that the continuing rise in top-tier pay inequality in Britain since the early-1990s has been due to a shift in relative labour demand. This shift appears to have been focused upon particular, high-level managerial skills, and is reflected in relatively expanded employment and relatively higher pay for the group of employees in possession of these.²¹ While there is evidence that the types of jobs in question are to some extent concentrated in the business services and financial services industries, this is true at all points in the period examined. Where the

²¹ An immediate question arises about the potential impact of ‘title inflation’ where change in the pay distribution is linked back to managerial occupations. However, this is an issue that I explore in depth in the empirical methods section of the fourth chapter of this thesis, and I find that the design of the collection of occupational data militates against the influence of title inflation, and that LFS results show no evidence that title inflation has driven these observed trends. Consequently, I am confident that there has occurred a real growth in demand for managerial skills, which is reflected in rising relative employment and pay for this employee group.

contribution of industry type to the pattern of change is considered, as in the preceding analysis, it is found to be of a smaller magnitude than that of the occupational dimension. Consequently, it may be concluded that the rise in pay inequality that has taken place at the summit of the British pay distribution is not linked to the relative economic fortunes of particular industries (e.g., financial services). Moreover, the kinds of jobs that lie at the heart of the pattern of change in pay inequality appear to be distributed fairly evenly across organizations of all sizes, implying that the relative pay shift is not merely a case of rent sharing by, say, large listed firms. These considerations support the assertion that the top-tier pay inequality bias is linked to a shift in relative labour demand across the British economy towards particular managerial skills.

No similar pattern can be observed in the other two countries examined (see Figures 9-12). In Germany, while the ISCO 12 group experiences one of the highest rates of cost share growth, it is by no means an outlier, and is outstripped by the ISCO 21 group (engineering and science professionals). The absence of outlying observations is consistent with the twin findings that Germany exhibits little sign of rising top-tier inequality and that between-job shifts explain very little of what distributional change that occurred. In France, the cost share of the ISCO 12 group actually declines slightly over the period in question. Instead, the occupations with the fastest-growing cost shares number engineering and science professionals and associate professionals, and various broking and trading groups. As in Germany, however, the range of cost share growth rates is relatively compressed, and no occupation is truly an outlier. This statement is consistent with the previous finding that the occupational dimension of the job analysis accounts for a considerably lesser share of rising inequality in France than in Britain. When the definition of 'job' is extended to include the industry dimension, it becomes apparent that the jobs with the fastest growing cost shares cluster for the most part in business services, and perhaps to a lesser extent in transport and communication and retail and wholesale commerce. All the same, there is little or no evidence in France or Germany that would support the inference of an across-industry shift in relative demand towards certain managerial skill sets.

The following section summarizes the findings of the chapter and speculates in particular on the implications of this last set of conclusions. Further, it uses this discussion as the means of introducing the remaining two empirically focused chapters of the thesis.

Conclusions

This chapter is intended to shed light on the apparent bias towards top pay in the growth of British pay inequality that was noted in the 1990s. In exploring this issue, it has addressed two principal research questions. First, it has sought to clarify the form of this apparent bias, and explored the extent to which a trend of this variety is novel or particular to Britain. Second, it has tested a number of frameworks that might explain why such a trend should occur, including the prevailing explanations in the literature for broad-based pay inequality growth – i.e., SBTC and change in labour market institutions – and the relevant alternative of ‘job’ analysis. This closing section summarizes the chapter’s findings in relation to these questions, speculates on their broader significance, and frames the way forward for the remainder of the thesis.

In relation to the evolution of the British distribution of pay, the key finding of the chapter is that the top pay bias in British inequality growth in the 1990s and 2000s that is hinted at in the literature is a clear fact and of non-negligible magnitude. Furthermore, it represents the continuation of a longstanding trend which began in the late-1970s, at the time that overall pay inequality began to rise in the British labour market. However, it only became noticeable as a trend after the broad-based form of pay inequality growth subsided during the early-1990s. That the broad-based and top-tier trends in pay inequality growth have been characterized by different orders of magnitude (much more rapid with regard to top pay) and patterns of timing (the broad-based trend slowed substantially in the 1990s while the top-tier version continued unabated) at least raises the possibility that they are linked to different sets of underlying causes. In comparison with similar countries’ experiences, the British trend is not typical. Indeed, there is no common trend with regard to top pay across countries. France developed a top-tier pay inequality bias of its own in the 1990s, although of a lower relative magnitude than its British equivalent, and it could only be perceived in relation to the distribution of compensation costs (a proxy for labour cost, or the price facing the employer) rather than for gross or net earnings. Germany, in contrast, has demonstrated no clear bias of this kind, the degree of change over time in its pay distribution being rather limited. These comparative findings suggest that, while the causes of rising top-tier pay inequality are unlikely to be parochially British, they are substantially modified by country-specific

mediating factors. Following this conclusion, Chapters three and four of this thesis explore the impact of particular mediating factors of this kind on top-tier pay inequality.

Examination of the prevailing explanations of the broad-based growth in pay inequality that occurred in Britain in the 1970s and 1980s suggests that they are less applicable as explanations of the phenomenon of top-tier pay inequality growth. In short, SBTC – at least, the version that defines skills through general education levels – cannot explain differences in top-tier pay inequality developments in the three countries, as the three countries examined resemble one another strikingly as regards the relative evolution of skill supply and implied demand for the highly educated. Similarly, change in the labour market institutions of minimum wage mechanisms and collective pay setting does not convincingly account for top-tier inequality trends. This is first of all true because these types of institutions do not directly impinge on top pay in any location considered. However, it is also the case that, while all three countries have experienced institutional change that could have enabled the upward transfer of rents within the pay distribution (i.e., weakening of institutions), lower-tail inequality has grown least in recent years in Britain. That the largest growth in top-tier inequality has occurred where the apparent scope for rent transfer from bottom to top is lowest suggests that there is little mechanical connection between the bottom and top of the pay distribution, and that the evolution of these institutions therefore has limited indirect influence also on patterns of change in top pay relativities.

The job analysis framework provides a different and informative perspective on the relevant changes in top-tier pay inequality. In Britain, it appears that top-tier pay inequality growth is closely linked to particular occupations or jobs. To a lesser extent, this is also true of France. However, in Britain, the top pay bias is neither an industry-specific phenomenon (i.e., it is not just a financial services or other sectoral effect), nor is it linked to organizational size (i.e., it is not just a case of rent sharing by large firms). Instead, because top-tier relative pay growth in Britain is driven by increases in both the relative employment share and relative pay of particular jobs, the evidence supports the inference that there has occurred a consistent shift in relative labour demand towards the managerial skills and characteristics associated with the incumbents of senior general and specialist managerial roles. Furthermore, the economy-wide nature of the trend implies that it is closely linked to changes within organizations, e.g., the restructuring of production systems, in response to some stimulus. That this same

stimulus appears to have had some impact on the French distribution of pay suggests that this stimulus is not unique to Britain, but is of a more general aspect.

Perhaps the key finding of this analysis, therefore, is that a growing share of total British earnings is accounted for by (the incumbents of) certain types of managerial jobs. Broadly speaking, there are two principal potential explanations for this distributional outcome: a market one and non-market one. Under market assumptions, we can infer an increase in relative demand for the individuals employed in the jobs in question. Certainly, there is little reason to suspect that there has occurred a dwindling of supply or bottlenecks, as the general education system has over time turned out progressively greater numbers of individuals with high general skills, and the quantitative growth of management functions has presumably created wider opportunities for the acquisition of specific skills. If the assumption holds that the observed pay outcomes are determined in a more-or-less competitive market context (as concluded by, say, Ogden and Watson 2004; Tzioumis 2005), it follows that organizations must have been willing to pay relatively more for the skills and abilities of the individuals in question. As economic models of the firm imply that employers will only pay more for skills if it is in their interest, some underlying change must have occurred to make these individuals and their skillsets relatively more productive or more critical to the organizational bottom line.

The most persuasive account of an underlying change of this variety is a variation on or refinement of the SBTC thesis, which argues that new ICT technologies and associated organizational changes have rendered managerial and analytical skills much more valuable to employers (Bresnahan 1999; Bresnahan, Brynjolfsson et al. 2002). This approach argues against the common assumption in the SBTC literature that the complementarity between technology and skills functions at the level of the individual (i.e., a worker receives a new desktop PC, which improves his or her productivity – see Kruger (1993) for the classic example) in favour of a perspective that envisions this complementarity as an organization-level phenomenon. Thus, new technology's influence on relative labour demand flows not from the direct use of computers by this or that group of employees, but from the subtle ways in which the information gathering and processing capacities of a wired organization act as a multiplier on the performance impact of managerial and professional skills (especially interpersonal, creative, and leadership skills). This performance multiplier effect is greater the more senior the position or individual in an organization (i.e., it is linked to the strategic

impact of the decisions made by the relative individual), which suggests that employers will be willing to pay increasingly more for these increasingly important skills, as they may ultimately make or break the fortunes of the whole organization. Furthermore, Bresnahan asserts that the impact of this complementarity will be greatest in the context of white-collar bureaucracies, as these are (parts of) organizations whose business literally takes the form of data and its interpretation. Interestingly, then, this hypothetical framework appears to predict the kind of rapid top-tier pay inequality growth observed in Britain and – to a lesser extent – in France.

In contrast, non-market explanations of change in the distribution of pay (or other material benefits) tend to focus on power or control (for a classic argument of this type, see March 1962). For instance, it might be expected that the group of employees that controls organizational decision making is able to direct resources towards itself either directly or indirectly, say, by reshaping the organization and its activities in such a way that it benefits from the new circumstances. A current and widespread argument of this type is that relating to ‘financialization’ – a process through which owners and managers are thought to have redirected economic activity to prioritize finance over production, augmenting their own returns along the way (Krippner 2005). Effectively, the precondition for such a change is the acquisition of more-or-less unrestricted organizational control, or of the reins of corporate governance. As this is conceived as a zero-sum game, other stakeholders, e.g., non-managerial employees, etc., lose in the process.

Following these two sketches of plausible explanations for top-tier pay inequality growth, the next two chapters address them in turn. Chapter three, therefore, looks at the possible contribution of corporate governance factors to recent growth in top-tier pay inequality in Britain and France, and Chapter four examines changes in the role of managers in British organizations over the last several decades and looks for evidence of change that might support Bresnahan’s hypothesis.

Appendix to Chapter 2

Detailed descriptions of data sets

The key data set for Britain is the NES. This is an annual survey of the earnings of employees in employment in Great Britain, which was conducted every April from the late-1960s until recently (it has now been superseded by another survey, the Annual Survey of Hours and Earnings). It is completed by employers from payroll records, and therefore provides highly accurate data on hours and earnings, occupation, and industry. The survey remained largely unchanged from 1975 onwards, yielding a useable data series which stretches from this date through to the last year publicly available, 2001. The sample frame consists of all individuals whose national insurance number ends with '14', which would in the event of a 100% response rate produce a random sample of 1% of all employees in employment. In reality, the response rate is closer to 50%. Individuals falling within the sampling frame are located by means of their tax records, with the survey materials then being forwarded to their employers. While this method of identification is efficient, it leads to under-sampling problems because at any given time many employees do not have a current tax record, owing either to low earnings (insufficient to pay tax or national insurance) or to a recent change of employer (in which case the questionnaire is sent to the wrong employer). As a consequence, part-time and very-low paid employees are under-represented in the data, as are individuals who regularly change employers, e.g., those working in seasonal or precarious jobs. From the perspective of the analyst of wages, such under-sampling is of greatest concern when studying the fortunes of the less-well paid, although it also has a conditioning effect on the overall shape of the estimated distribution.

Given the limitations of the NES, I supplement it with data drawn from the LFS, a quarterly household survey that has reported information on earnings and hours since 1993. I construct an annualized data set stretching from this date to 2004. This data set has a balance of attributes different to that of the NES. On the one hand, the LFS's annualized samples – with the assistance of weights that render estimates representative of the target population and account for differential rates of non-response – approximate to ones randomly drawn from the general population, so avoiding questions of selection bias. On the other hand, though, the

resultant samples are smaller than their NES equivalents (leading to lower statistical precision), and the self-reported nature of the hours and earnings data produces a less accurate measure of hourly wages. It should be noted, though, that the LFS earnings and wage measures are not based merely on respondents' assertions, as the data collection process asks respondents to produce salary slips, etc., wherever possible in order to corroborate self-declared pay figures. In addition, previous studies that have jointly analysed the NES and the LFS have found that they produce very similar results with regard to both the cross-sectional profile of pay inequality and changes in pay inequality over time (e.g., Dickens and Manning 2002; Goos and Manning 2003). Therefore, the NES and LFS complement one another well, as the strengths of one survey compensate for the weaknesses of the other, and permit the cross-referencing of results over the period from 1993 to 2001.

For France, the primary source of data is the DADS (for a detailed description, see Roux 2001). Like the NES, it is constructed from employer annual payroll records, which must by law be reported to the government for administrative purposes. Consequently, it also provides accurate information on hours, earnings, and employer and job characteristics for the period 1976-2001. However, unlike the NES, the target population includes only the private sector, the national industries (the 'grandes entreprises'). This group accounts for approximately 75% of all employment in each year, but DADS results must be supplemented with those derived from the EE in order to understand developments in the public sector. While the administrative data set covers all individuals in employment in the specified sectors any given year – and is therefore vast – the information retained by INSEE (the national statistical office) for research purposes relates only to individuals born in the October of an even-numbered year, producing a more tractable (but still extensive and representative) data source. Still, the structure of these data is sufficiently different from the NES to make direct comparison difficult, as the unit of observation is the individual-job match – thus, a given individual may appear several times per year, once for each job they hold during that year. In order to facilitate comparison, I construct a 'pseudo-NES' sample from each DADS cross-section, capturing a snapshot of employment (individual-job observations) in the second week of April in each year. This procedure generates a representative data set of similar dimensions to the NES. Owing to the employers' obligation to report the underlying data to the government for administrative purposes, the DADS does not suffer from any systematic sampling problems (in the manner of the NES).

As in the case of Britain, I am able to compensate for the weaknesses of the primary data set by referring to a nationally representative survey of households – here, the EE. This is an annual survey which enables analysis of all employment (i.e., public sector included) and carries information on key variables not present in the DADS (notably, levels of education). Like LFS, EE provides data for only a portion of the period of interest, its initial year of collection being 1984. Further, it only began to collect representative earnings data in 1990. Thus, results may be cross-referenced between the two surveys during the period 1990-2001.

The German data set – the GSOEP – is also a household survey that allows for the derivation of representative samples of individuals in employment. While it, like the NES and LFS, has a panel dimension, I treat it here as a series of annual cross-sections. Begun in 1984, the early years of the survey relate solely to the former FRG, although its scope was rapidly extended to the new Länder following unification in 1990. For the sake of continuity over time, I construct a data set that is representative of the population of employees in employment in the former FRG/western Länder during the period 1984-2002. Like the LFS and EE, the hours and earnings data are self-reported, and estimates may be weighted to ensure their representativeness and to control for non-response bias. Much more so than the LFS or EE, however, the small overall sample size of the survey presents issues with regard to the attainable degree of statistical precision, especially when dealing with small subsamples such as groups of very high earners.

Tables

Table 1: Labour cost composition, 2002

<i>% of total labour costs</i>				
<i>Country</i>	Income tax	Employee s.s.c.	Employer s.s.c.	Gross earnings
<i>United Kingdom</i>	14	7	8	92
<i>France</i>	9	9	29	71
<i>Germany</i>	17	17	17	83

Note: figures are representative for single individuals without children at the income level of the average production worker

Note: the first three columns may not sum to the fourth due to rounding

Note: (Table 1.3, OECD 2003)

Table 2: Trends in self-employment, 1970-2000

<i>Self-employment rate by year in non-agricultural sector (%)</i>					
<i>Country</i>	1970	1978	1990	1998	2000
<i>United Kingdom</i>	6.7	6.8	14.2	12.5	11.7
<i>France</i>	12.5	10.7	9.3	8.2	7.9
<i>Germany</i>	10.3	8.3	8.5	9.9	9.6

Note: (Based on OECD data presented in Table 1, Torrini 2005)

Table 3: Pay percentile ratios, 1976-2002

<i>Log percentile ratios</i>				
<i>Country/year</i>	p99-p50	p95-p50	p90-p50	p50-p10
Britain				
(gross wages)				
<i>1976</i>	1.20	0.80	0.57	0.50
<i>1984</i>	1.29	0.86	0.65	0.53
<i>1992</i>	1.41	0.95	0.73	0.57
<i>2001</i>	1.57	1.03	0.78	0.59
Britain				
(‘compensation cost’)				
<i>1976</i>	-	-	-	-
<i>1984</i>	1.27	0.87	0.66	0.57
<i>1992</i>	1.44	0.98	0.75	0.60
<i>2001</i>	1.60	1.05	0.80	0.63
France				
(gross earnings)				
<i>1976</i>	1.51	0.88	0.59	0.49
<i>1984</i>	1.47	0.85	0.54	0.43
<i>1992</i>	1.44	0.84	0.54	0.45
<i>2001</i>	1.52	0.86	0.53	0.41
France				
(‘compensation cost’)				
<i>1976</i>	1.37	0.78	0.52	0.49
<i>1984</i>	1.40	0.80	0.51	0.43
<i>1992</i>	1.43	0.83	0.53	0.45
<i>2001</i>	1.52	0.87	0.53	0.56
Western Germany				
(gross wages)				
<i>1976</i>	-	-	-	-
<i>1984</i>	-	0.73	0.54	0.81
<i>1992</i>	-	0.67	0.50	0.61
<i>2002</i>	-	0.74	0.56	0.73
Western Germany				
(‘compensation cost’)				
<i>1976</i>	-	-	-	-
<i>1984</i>	-	0.72	0.53	0.81
<i>1992</i>	-	0.65	0.49	0.61
<i>2002</i>	-	0.70	0.53	0.73

Note: gross hourly wages and compensation cost for all workers in Britain and Germany; daily gross earnings and compensation cost for full-time private-sector workers in France

Note: NES, DADS, and GSOEP data

Table 4: Adult population by education group, 1984-2002

<i>Country/year</i>	<i>Broadly comparable education groups (% of adult population, aged 16-65)</i>					
Britain	<i>Degree or higher</i>	<i>Higher education, below degree</i>	<i>A level or equivalent</i>	<i>GCSE A-C or equivalent</i>	<i>CSE below grade 1 or equivalent</i>	<i>Other/no qualification</i>
1984	5.4	7.0	14.6	16.8	5.5	50.6
1993	10.9	7.4	21.9	19.0	6.3	34.4
2002	14.9	7.9	22.9	20.8	5.5	28.0
France	<i>Diplôme supérieur</i>	<i>Baccalauréat +2 years</i>	<i>Bac., Brevet prof., etc.</i>	<i>CAP, BEP, etc.</i>	<i>BEPC only</i>	<i>No qualification or CEP</i>
1984	5.4	5.7	9.3	22.2	7.4	50.0
1992	6.9	7.2	12.0	24.0	10.8	38.6
2002	10.9	10.9	15.1	24.9	11.3	26.8
Western Germany	<i>Any college degree or higher</i>	<i>Fachschule and Meister degrees</i>	<i>Abitur or post-school vocational degree</i>	<i>Realschula bschluss</i>	<i>Hauptschula bschluss</i>	<i>No qualification</i>
1984	8.5	5.7	55.6	6.5	19.8	4.0
1992	10.7	5.3	56.1	7.6	15.4	5.0
2002	16.5	5.0	59.0	6.2	11.0	2.3

Note: LFS, Enquête emploi, and GSOEP data

Table 5: Relative supply and demand by education group, 1993-2002

<i>Annualized relative changes (%)</i>		
<i>Country/education groups</i>	Adult population, aged 16-65	Active population, aged 16-65
Britain		
<i>Degree/No degree</i>		
Supply shift	3.88	4.09
Compensation cost shift	-0.06	-0.06
Implied demand shift	3.79	4.00
<i>Degree/No qualifications</i>		
Supply shift	5.75	6.65
Compensation cost shift	-0.71	-0.71
Implied demand shift	4.69	5.59
France		
<i>Degree/No degree</i>		
Supply shift	4.28	4.10
Compensation cost shift	-0.03	-0.03
Implied demand shift	4.23	4.05
<i>Degree/No qualifications</i>		
Supply shift	7.39	7.42
Compensation cost shift	0.59	0.59
Implied demand shift	8.26	8.30
Western Germany		
<i>Degree/No degree</i>		
Supply shift	4.95	5.14
Compensation cost shift	-0.40	-0.40
Implied demand shift	4.36	4.55
<i>Degree/No qualifications</i>		
Supply shift	13.37	13.22
Compensation cost shift	-0.50	-0.50
Implied demand shift	12.62	12.46

Note: wage shift values are calculated for all full-time employees in each country

Note: GSOEP estimates omit tenure variable from human capital equations

Note: LFS, Enquête emploi, and GSOEP data

Table 6: Collective pay-setting institutions, 1980-2003

Variables (% of working population)

<i>Country/years</i>	Union density	Bargaining coverage
Britain		
1980-1983	49	71
1990-1993	38	47
2000-2003	29	35
France		
1980-1983	18	85
1990-1993	10	92
2000-2003	8	95
Western Germany		
1980-1983	35	70+
1990-1993	31	70+
2000-2003	24*	60+*

Source: (Table 4, Visser 2005)

Note: * all Germany

Table 7: Job analysis, 1992-2002

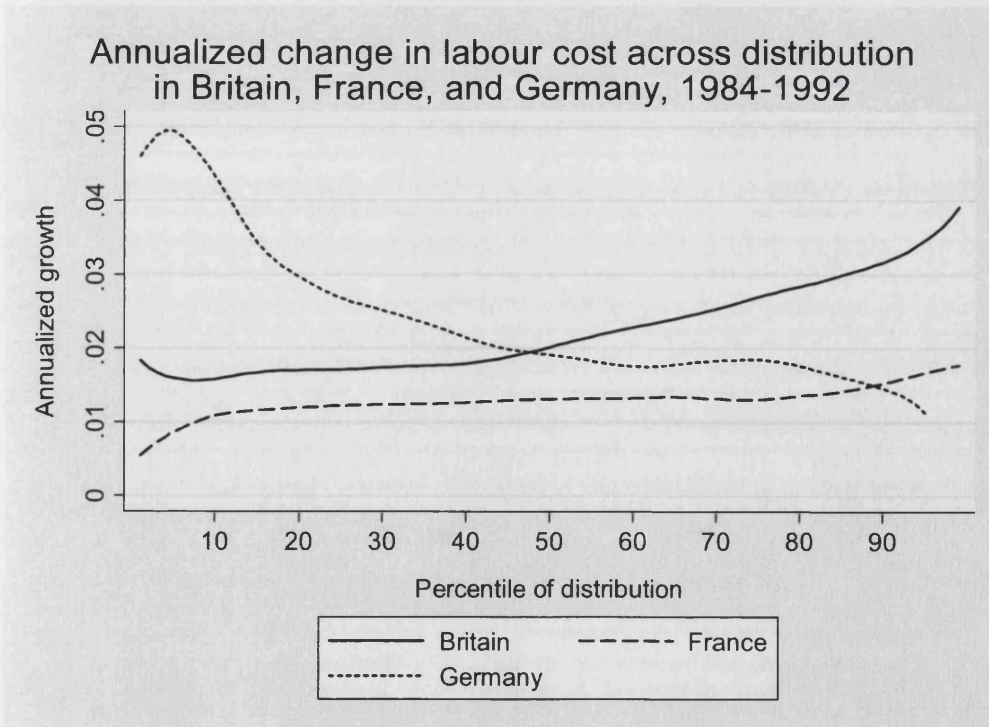
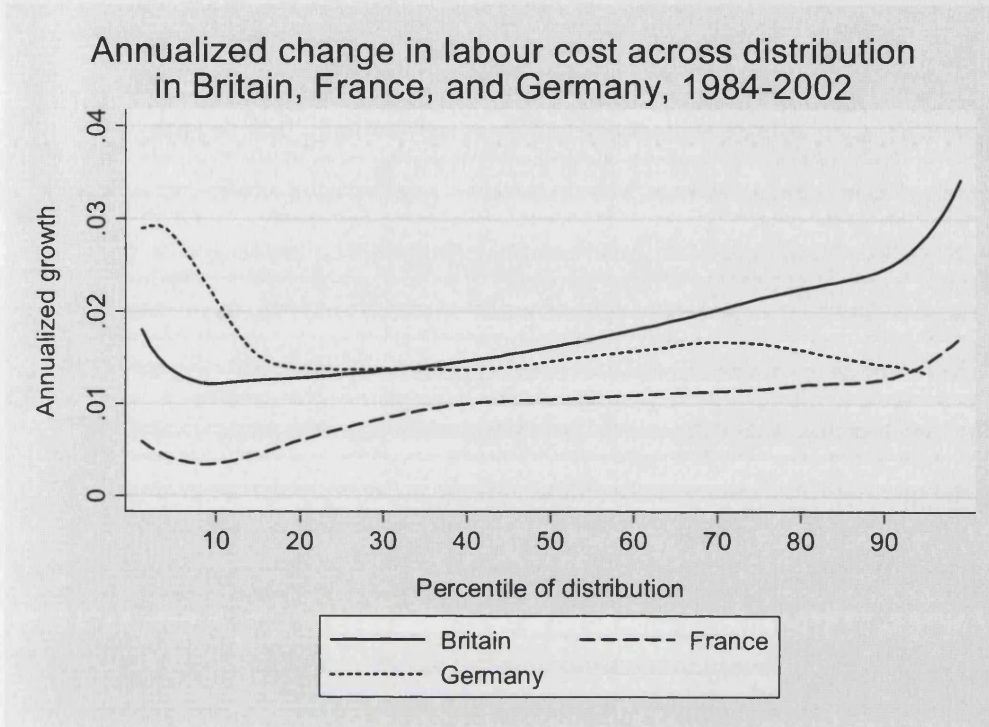
<i>Period/country</i>	p99-p50	p95-p50	p90-p50	p50-p10
Job defined by 2-digit occupation				
Britain				
<i>Log point change in inequality measure</i>	16	7	5	3
<i>Proportion explained - quantities only</i>	0.20	0.45	0.97	1.02
<i>Proportion explained - quantities and prices</i>	0.31	0.33	0.76	1.79
France				
<i>Log point change in inequality measure</i>	9	4	1	10
<i>Proportion explained - quantities only</i>	-0.05	0.52	4.59	0.16
<i>Proportion explained - quantities and prices</i>	-0.11	-0.29	0.86	0.16
Western Germany (1993-2002)				
<i>Log point change in inequality measure</i>	-	4	2	10
<i>Proportion explained - quantities only</i>	-	1.36	1.54	-0.13
<i>Proportion explained - quantities and prices</i>	-	-0.50	-0.59	0.24
Job defined by 2-digit occupation/1-digit industry				
Britain				
<i>Log point change in inequality measure</i>	16	7	5	3
<i>Proportion explained - quantities only</i>	0.36	0.76	1.40	0.68
<i>Proportion explained - quantities and prices</i>	0.51	0.56	0.93	0.89
France				
<i>Log point change in inequality measure</i>	9	4	1	10
<i>Proportion explained - quantities only</i>	0.12	0.58	5.05	0.18
<i>Proportion explained - quantities and prices</i>	0.09	0.22	3.26	0.24
Job defined by 3-digit occupation/1-digit industry				
Britain				
<i>Log point change in inequality measure</i>	16	7	5	3
<i>Proportion explained - quantities only</i>	0.46	0.92	1.59	0.65
<i>Proportion explained - quantities and prices</i>	0.70	0.66	1.12	1.14

Note: gross hourly wages and compensation cost for all workers in Britain and Germany; daily gross earnings and compensation cost for full-time private-sector workers in France

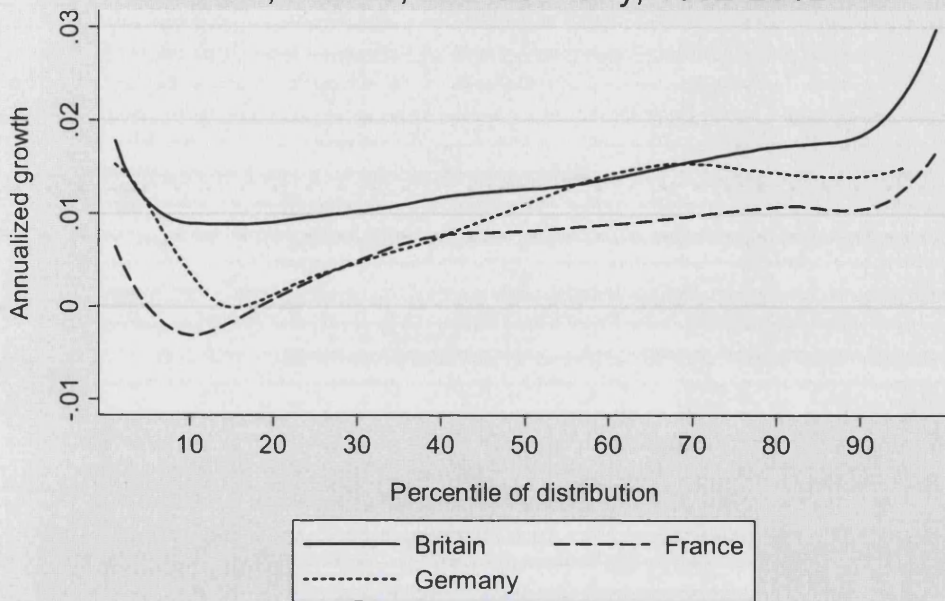
Note: NES, DADS, and GSOEP data

Figures

Figure 1

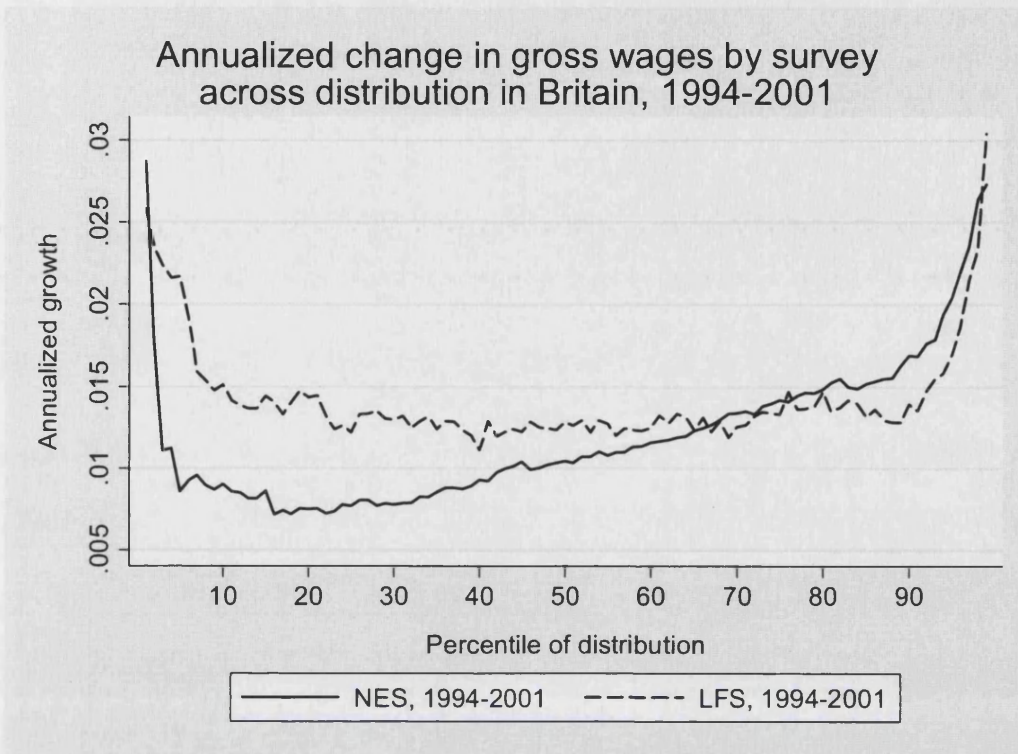


Annualized change in labour cost across distribution
in Britain, France, and Germany, 1992-2002



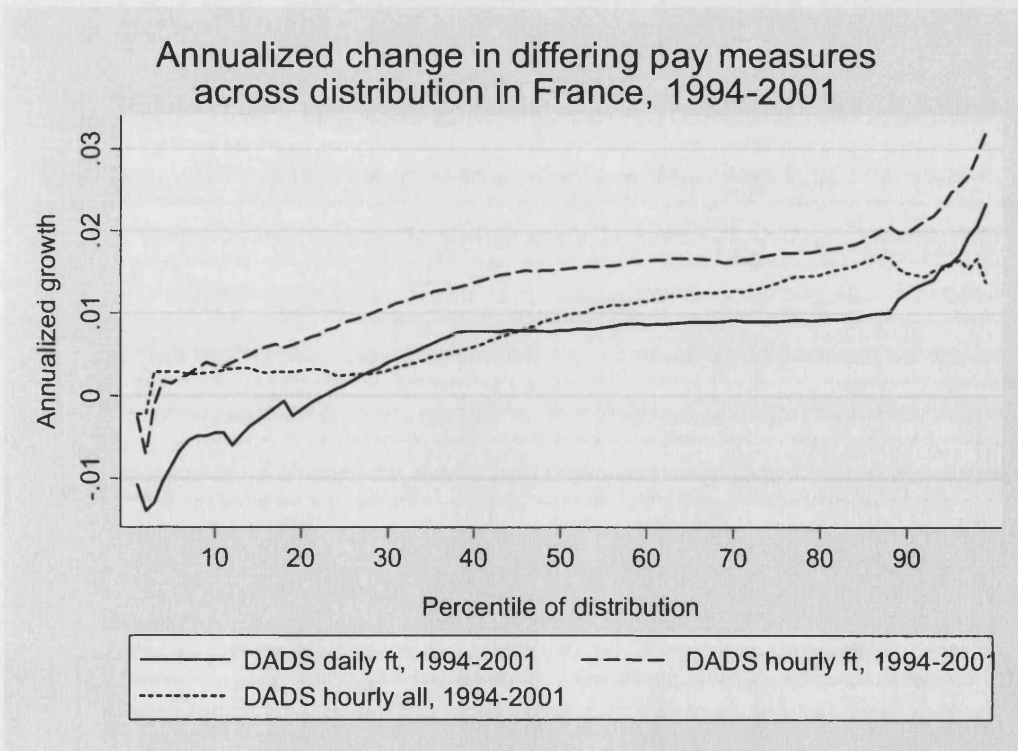
Note: French data are daily compensation cost for full-time employees only; British and German data are hourly compensation costs for all employees
Note: NES, DADS, and GSOEP data

Figure 2



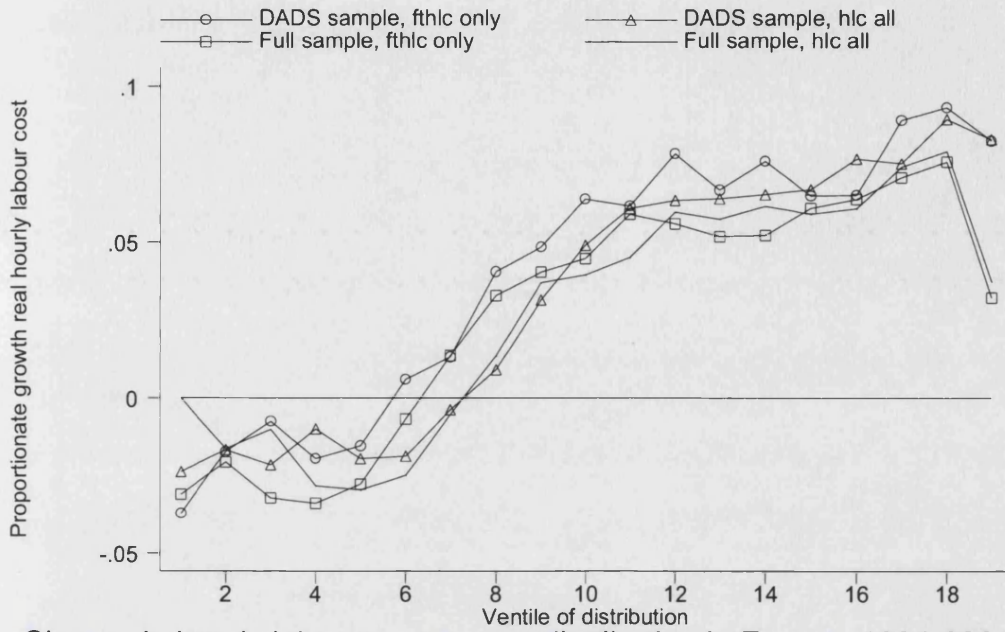
Note: NES and LFS data

Figure 3



Note: DADS data

Figure 4



Change in hourly labour cost across distribution in France, 1994-2001

Note: Enquête emploi data

Figure 5

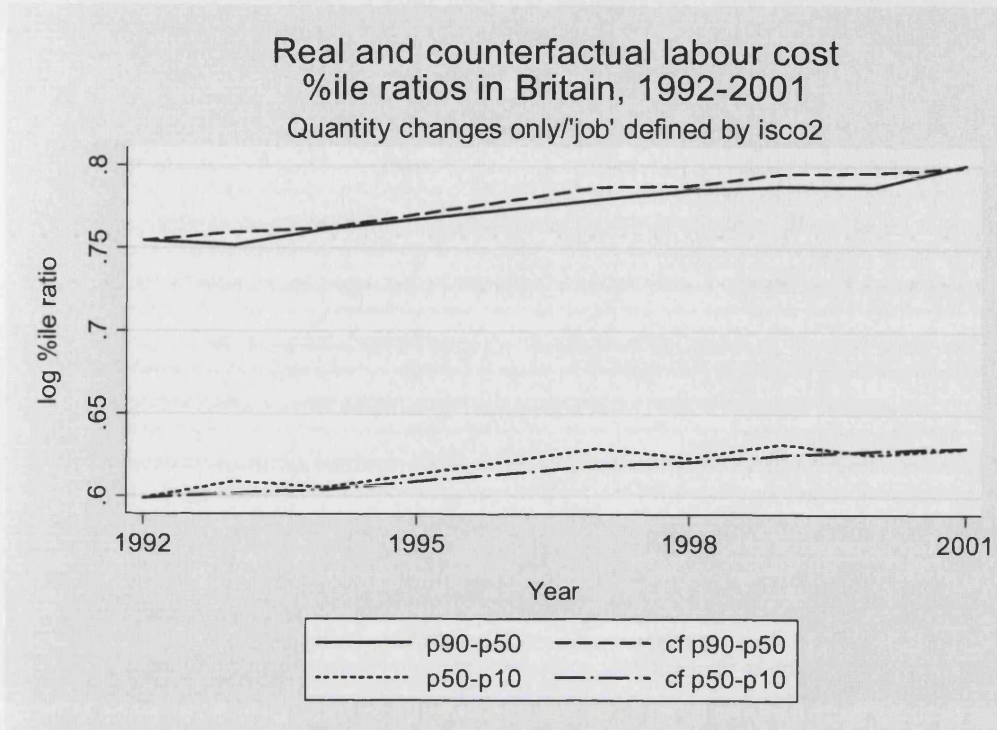


Figure 6

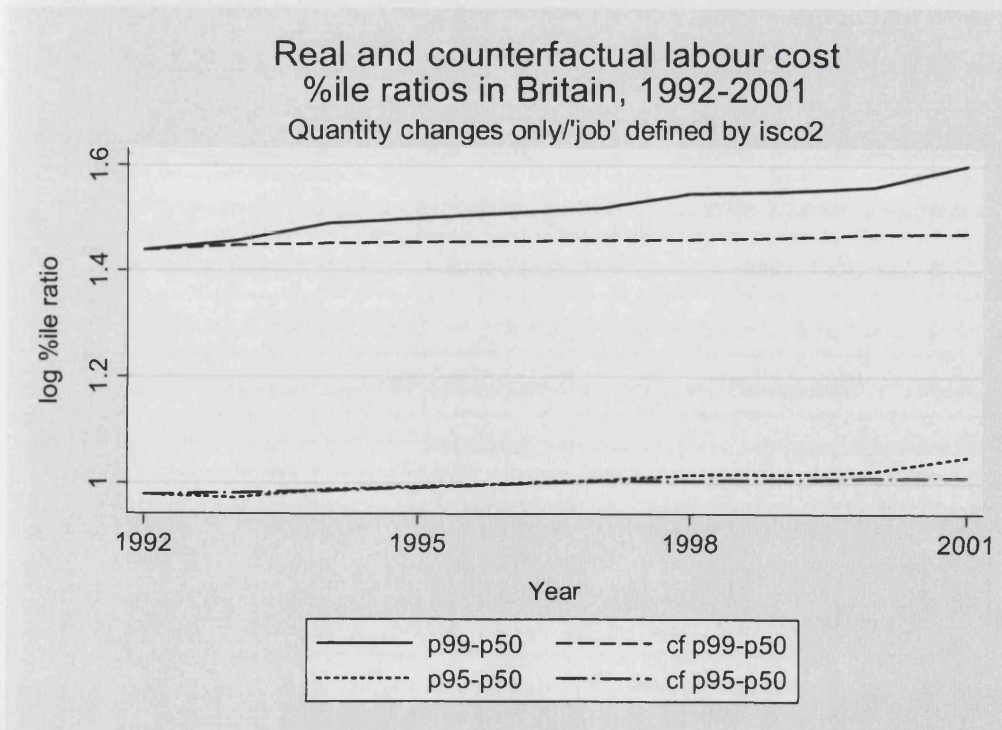


Figure 7

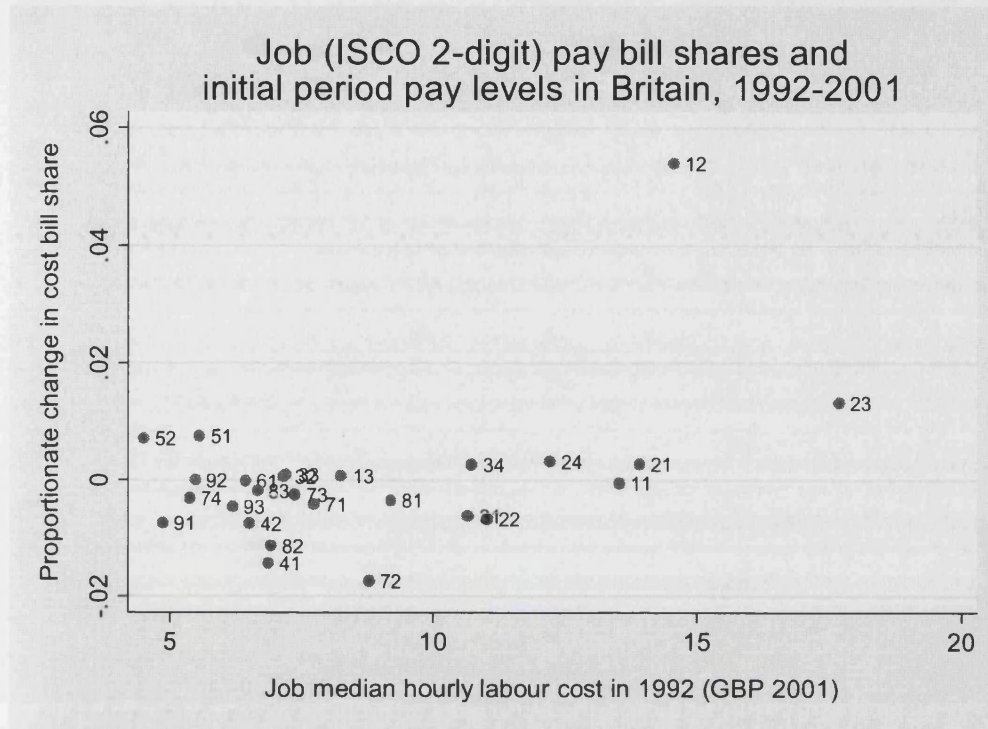
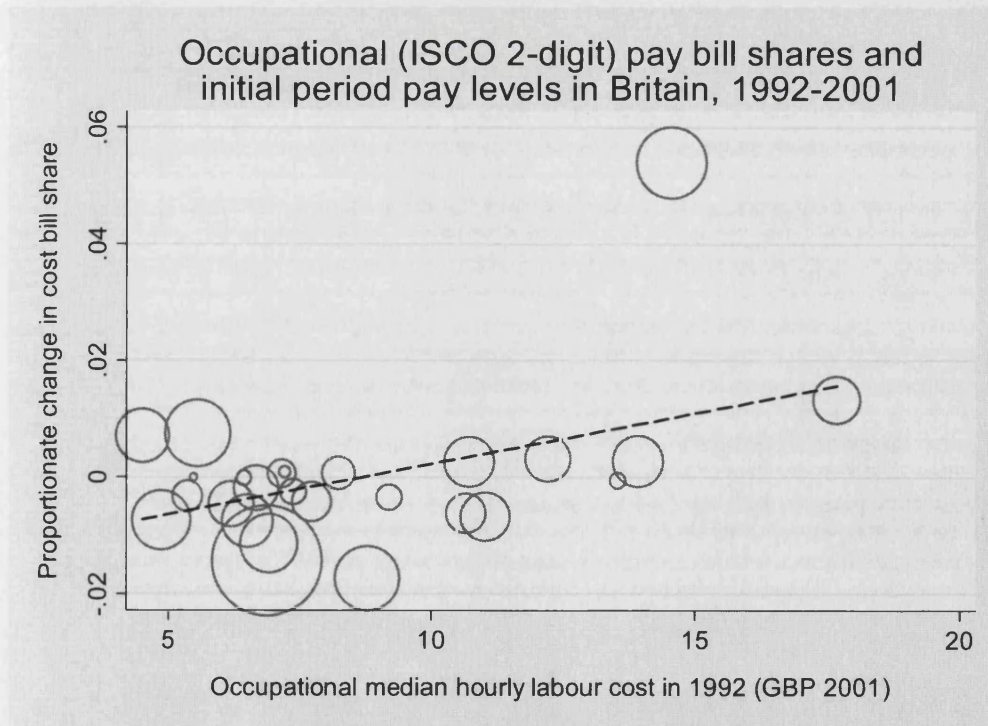


Figure 8



Note: point size is related to the employment share of the job in the initial period

Figure 9

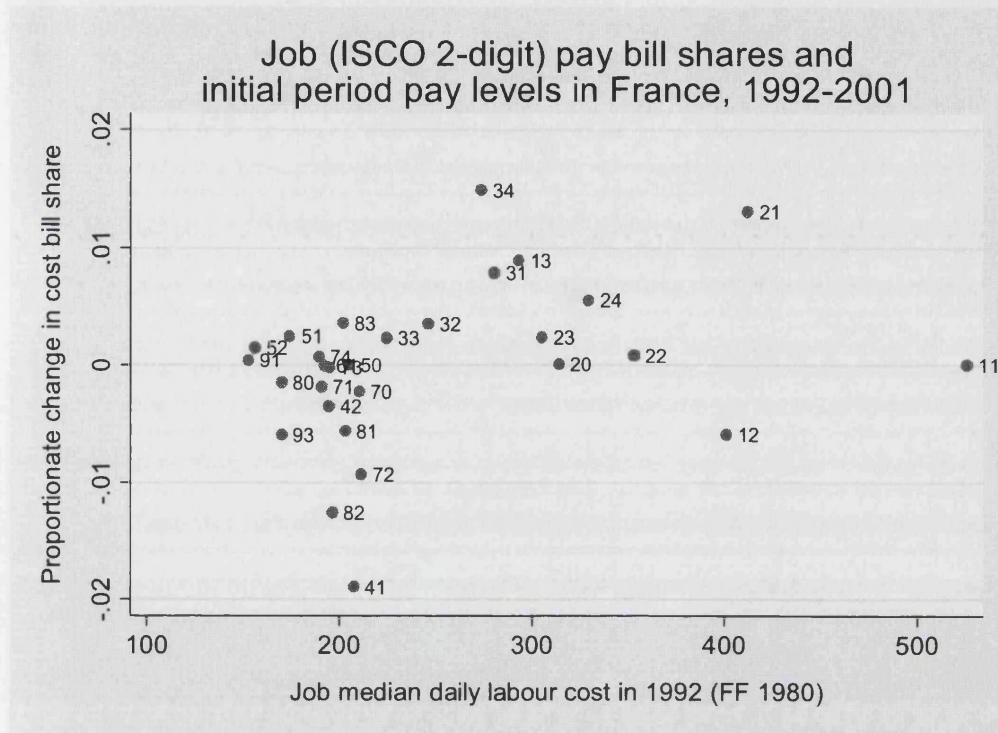
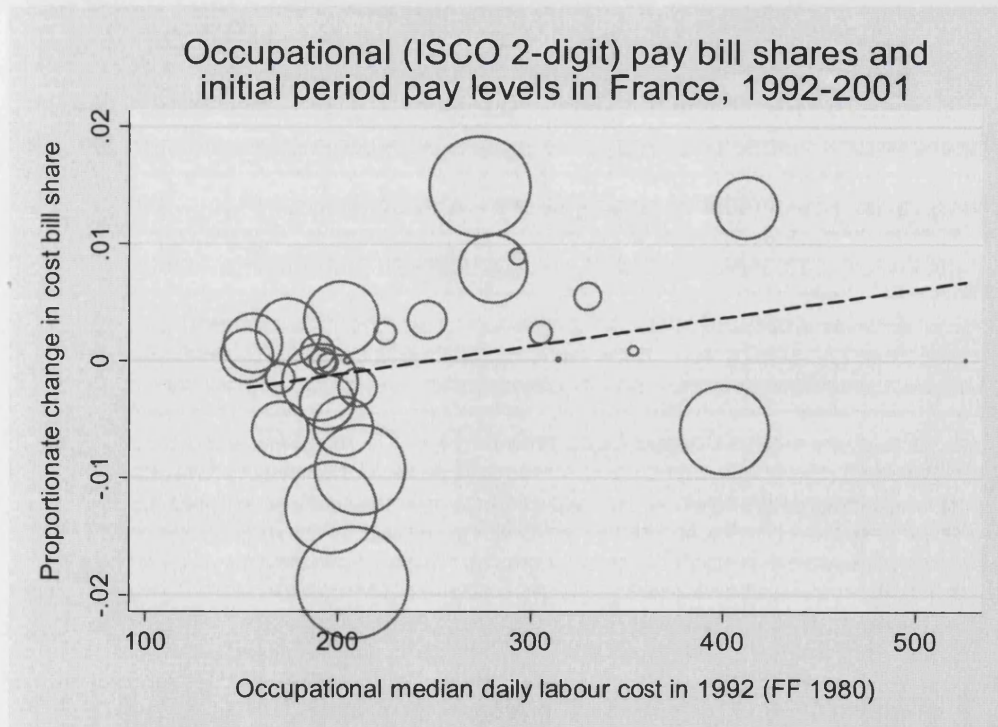


Figure 10



Note: point size is related to the employment share of the job in the initial period

Figure 11

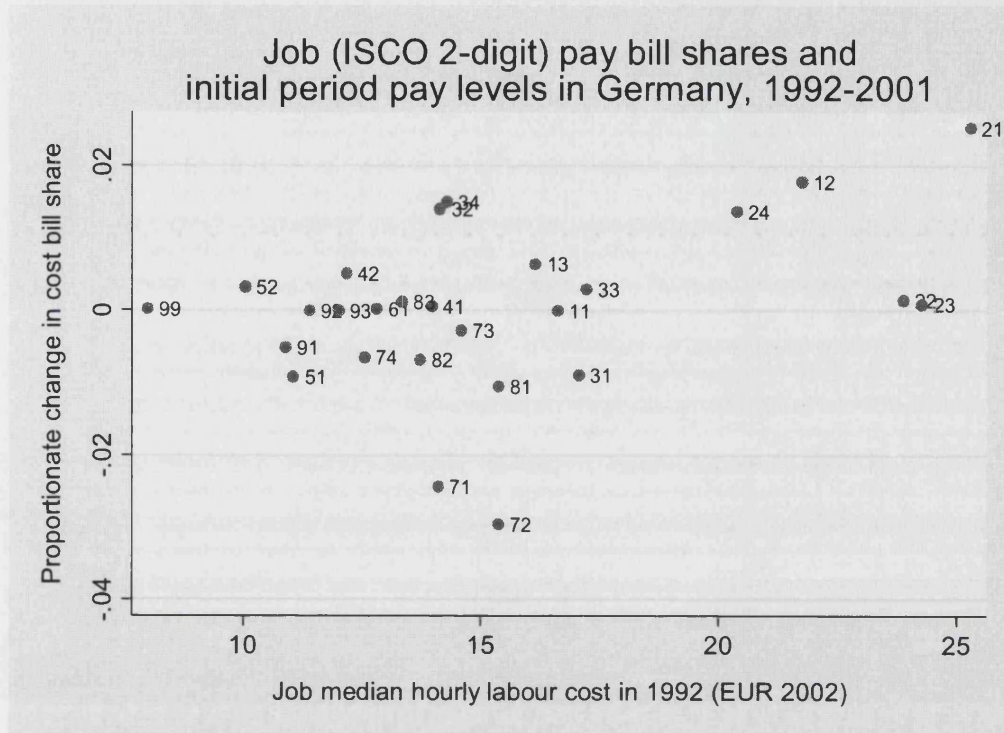
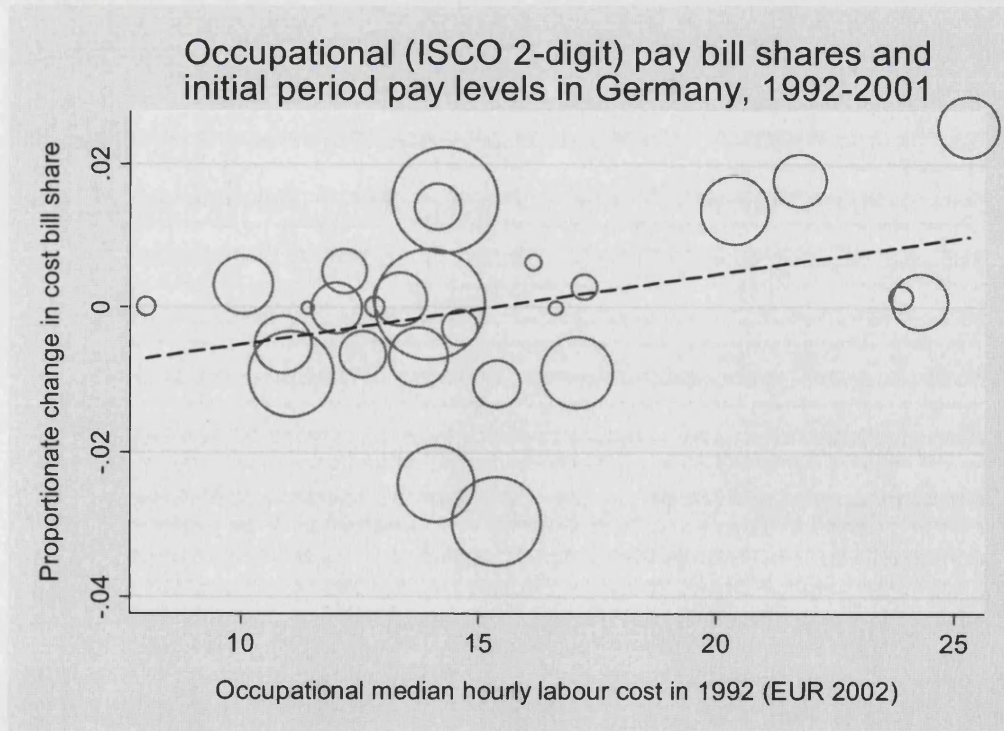


Figure 12



Note: point size is related to the employment share of the job in the initial period

Chapter 3

Organizational Governance, Patterns of Labour Demand, and Their Relation to Top-Tier Pay Inequality

Introduction

The preceding chapter showed that between the late-1970s and the early-2000s there was a substantial top pay bias in the evolution of the British distribution of pay, with the highest rates of inequality growth consistently occurring above the top decile of the distribution. By means of a job analysis of the evolution of the distribution of pay, the chapter found that this pattern of change was strongly linked to the relative fortunes of senior general and specialist managerial roles. Applying a supply-and-demand model, it was concluded that there has occurred a consistent shift in relative labour demand towards the skills and characteristics necessary to fill roles of this type. In considering this result, I floated two possible types of explanation for this apparent shift in relative demand: a market explanation and a non-market alternative. This chapter is intended to assess the case that the plausible non-market factor identified – corporate or organizational governance²² – may have contributed to the observed top-tier pay inequality trend in Britain.

In the understanding of this chapter, organizations are micropolitical units governed by ruling coalitions of actors, with each ‘actor’ being composed of a relatively homogeneous and organized group of individuals (March 1962). Because the organization as a whole – as opposed to its constituent parts – is the ultimate source of economic surplus, this surplus must be distributed somehow among the actors who contribute to the organization. If we assume that this process of distribution is not precisely effected by the market, the composition of the

²² While the approach is typically labelled ‘corporate governance’, and therefore seems only to apply to listed private-sector companies, its ideas are applicable to all types of organizations, including privately held businesses, public sector organizations, and organizations in the non-profit sector. The organizational actors identified in this chapter – owners, managers, and workers – are not confined to the corporate sector, and organizational politics is not its preserve, either. For these reasons, I prefer to use the label ‘organizational governance’.

organization's ruling coalition has implications for who benefits (most) from the overall surplus produced by the organization. This is because members of the ruling coalition that prevails in the political competition for the surplus can obtain a relatively high share of the spoils, either directly by simply allocating a greater share of the surplus to themselves, or indirectly by steering the organization in ways that direct greater share of surplus to them. Since individual employees – even those at the top of the distribution – do not set their own pay levels, it is unlikely that political competition through the organizational governance mechanism could affect the distribution of pay directly (by simple self-dealing). Instead, if organizational governance factors are to impinge upon the distribution of pay, it must be through the more subtle indirect channel (in the shorter term by capturing rents, and in the longer term by controlling strategic decision making and thereby steering the organization in ways that disproportionately benefit certain constituents).

Stated briefly, the argument that links organizational governance to questions of the distribution of pay supposes that the organizational governance mechanism functions as a device to aggregate the array of interests of the different organizational stakeholders. The outcomes of this process of interest aggregation – or the organizational governance regime – influences the shape of organization-level decisions over what production to undertake and how. Evidently, some of these decisions relate to the types and quantities of labour to employ as an input to production, and the terms on which they are employed. As decisions of this type underpin the profile of relative labour demand at the level of the single organization, they contribute to the overall pattern of relative labour demand in the market and thereby influence the observed distribution of pay. Following this causal chain back to its source, a challenge facing this chapter is to classify the various types of organizational governance regime and to specify their likely respective impacts on the distribution of (top) pay.

There are two distinct types of organizational governance models in the literature. The first conceives of organizational politics in bipartite terms, that is, as being contested by owners and managers. The second perceives that there are more than two actors in the game, and portrays organizational politics as an arena in which multiple parties or stakeholders interact. Given that this chapter is ultimately concerned with questions of pay, it opts to use a stakeholder model of organizational governance, as this enables the consideration of distributional outcomes for all employees, whether managerial or non-managerial. In addition, this approach permits consideration of Chapter two's finding that senior managers

represent a key influence on top-tier pay inequality growth in Britain. Evidence that owners have enjoyed relatively high profits in recent decades (De Jong 1995; Ryan 1996), alongside the findings of the preceding chapter in relation to the fortunes of managers in Britain, suggests that the relative fortunes of owners and managers have risen together, and may be linked to their combination in organizational coalitions.

The chapter addresses two main research questions. To begin with, as it has already been noted that Britain and France have experienced different top-tier pay inequality developments in recent years, the chapter asks whether these countries also differ in terms of the population ecology of and degree of change in organizational governance arrangements. It arrives at answers by applying its chosen organizational governance framework to closely comparable British and French establishment-level panel data for the period 1998-2004. Following this descriptive element of the analysis, the chapter turns to its second research question, testing whether organizational governance factors are connected to the growth of top-tier pay inequality by examining the two sets of variables in tandem in the two countries.

Regarding research design, the chapter's key choices include the use of both British and French data, the application to the data of Aguilera and Jackson's (2003) organizational governance model rather than one of the others available, and the decision to probe the connection between governance and pay outcomes by means of an econometric model focused on relative labour demand. Data on two countries are used for two reasons. First, it provides a broader and more robust basis than a single country's data on which to assess the degree to which the chosen organizational governance framework is informative and useful. Second, the ability to compare across-country difference in organizational governance trends alongside difference in pay inequality trends enables more accurate identification of the potential link between organizational governance arrangements and patterns of top-tier growth in pay inequality. I opt to define organizational governance based on Aguilera and Jackson's framework because of its tripartite structure (owners, managers, and employees), which captures the distinctions needed for this analysis, and because of its precise specification through variables that can readily be operationalized and tested. While a number of other models share the first attribute (e.g., Dore's model contrasting the 'community' and 'property' views of the firm (Dore 2000)) and are conceptually very similar to the one used here, they tend to be too general in form to be operationalized in a manner that will support econometric modelling. My decision to test for the impact of organizational

governance regimes on the distribution of pay by means of a labour demand model is determined by the argument, noted above, that labour demand is the channel through which the former factor will influence the latter. In addition, the model functions at the level of the organization so as to reflect my understanding of the link between organizational governance and labour demand as an intra-organizational process.

Structurally, the chapter begins by setting out the theoretical case for the influence of governance factors on pay inequality, and top tier inequality in particular, drawing on the literature on organizational governance along the way. The next section of the chapter sets out the empirical strategy of the paper – i.e., how it employs the chosen organizational governance framework, what hypotheses are generated, how it tests for the influence of this variable on organization-level labour demand patterns, and the implications of this influence for pay inequality outcomes. Following this presentation, I introduce the data sets used – the British Workplace Employment Relations Survey (WERS) and the French enquête relations professionnelles et négociations d'entreprise (REPONSE) – and discuss the operationalization of key variables used in the analysis.

I present results on the population ecology of organizational governance arrangements in the two countries, the relationship between governance and relative labour demand outcomes, and contribution of this relationship to the patterns of top-tier pay inequality growth observed in Britain and France. To anticipate the findings of the chapter, it appears that there are significant differences across countries in the distribution of types of arrangements. In addition, there is some evidence that in both Britain and France a shift has taken place such that an increasing share of organizations are controlled by coalitions of owners and senior managers. Considering the relationship between organizational governance arrangements and patterns of organizational labour demand, it appears that while there is some impact of the one factor on the other in Britain, there is little connection between them in France. All the same, the results for the British case tend to support the hypothesis that coalitions comprised of owners and managers (class coalitions) are more likely to bias labour demand towards managers than coalitions comprised of managers and workers (insider coalitions); and that insider coalitions in turn are more likely than class coalitions to bias labour demand towards non-managerial occupational groups. The capacity of these labour demand biases to explain rising top-tier inequality is found to be rather limited, however, even in Britain. As a result, the paper concludes that organizational governance issues can explain rather little of the

recent increases in top-tier pay inequality observed in Britain and France, and that other factors must be explored if we are to understand these trends. This conclusion sets the stage for the third empirical study of this thesis, which relates to the development of the managerial function in British organizations in recent decades.

Theoretical issues and literature review

This chapter explores the possibility that a ‘non-market’ or political factor – organizational governance – may have contributed to the rise in top-tier pay inequality observed in Britain and, to a lesser extent, in France. In short, the rationale for this hypothetical relationship begins from the assumption that organizations are both sources of socialized surplus and loci of political competition among more-or-less organized actors for that surplus. This notion of political competition over material interests is well captured by thinking about the issue of organizational governance. Hence, we might reasonably hypothesize that an actor’s relative dominance in the arena of organizational governance arrangements might be associated with its relative success in obtaining its share of the surplus produced by the organization. If we consider recipients of top pay, or managers, to constitute an identifiable actor, it follows that relative material success for this group will take the form of relatively high growth in remuneration. Evidence in support of this hypothesis would therefore need to show that in organizations in which recipients of top pay are influential in organizational governance arrangements, they also appear to be in relatively high demand by the organization. In this section of the chapter, I draw on the literature to set out the hypothetical basis for this relationship.

The term ‘corporate governance’ is usually used to refer to the systems by which companies are directed and controlled. In the words of the OECD (p.11, 2004a), corporate governance ‘involves a set of relationships between a company’s management, its board, its shareholders and other stakeholders... [and] also provides the structure through which the objectives of the company are set, and the means of attaining those objectives and monitoring performance are determined.’ This definition implicitly distinguishes between the goals of the firm or organization as a whole, and the goals or preferences of the groups that compose it. Because the preferences of these groups are not necessarily in alignment, it has been observed that the

institution of the firm is a form of 'political conflict system' (March 1962). According to this characterization, political conflict systems possess two key features. First, they are composed of identifiable 'elementary units', that is, collective actors or more or less organized groups of individuals. And second, these actors possess conflicting preferences – or perceived interests – with regard to the allocation of resources within the system as a whole. Thus, for example, owners typically wish to prioritize profits, whereas employees' attention is more likely to be focused on the wage bill. If we assume that each of these actors seeks to maximize its own share of the collective surplus created by the organization, organizational governance can be thought of as the mechanism through which the claims of the various actors are reconciled. No single actor can impose its terms on the others, as all are in some way necessary to the continued existence of the organization as a whole. Consequently, in the political game of organizational governance, the relatively most successful actors will be those that form a dominant coalition (March 1962; Jacoby 2004).

From this perspective, organizational governance arrangements will play a role in determining the distribution of the material surplus generated by the organization. However, in a market context, the returns to the various actors who participate in the individual firm are primarily influenced by market prices derived outside the firm. Thus, for instance, the relative returns to employees (i.e., wage rates) and owners (i.e., interest) in a given organization are strongly guided by the prices prevailing in the labour and capital markets. As a consequence, therefore, the role of political competition – or organizational governance arrangements – in influencing the distribution of organizational surplus will be a subtle one, rather than a simple case of self-dealing. I see two possible mechanisms through which organizational governance issues may affect distributional outcomes. First, some organizations generate rents of some sort that represent a pool of surplus that may be distributed over and above the returns demanded by the market. As this pool is not subject to market discipline, it is open to political processes of competition to determine how it will be shared out. Hence, members of a dominant organizational coalition will be well placed to direct these rents towards themselves. Second, membership of a ruling organizational coalition offers the opportunity to steer the process of organization-level strategic decision making in ways that promote one's own interests in the organization, that is, increase the share of the overall value added that accrues to a given actor. For example, there is evidence that unions are best able to ensure durably relatively high returns for their members in situations in which they participate in the strategic decision making process of an organization (Jacoby 2001). Similarly, a number of

studies have observed that the distributional impact of new technology in an organization is not deterministic, but is guided by the nature of the dominant political coalition that oversees its introduction (e.g., Barley 1988; Pinsonneault and Kraemer 1997).

As regards the understanding of organizational governance arrangements, there are two principal approaches to be found in the literature. The first type limits itself to the consideration of principals (owners/financiers) and their agents (managers), with the assumption that the role of the organizational governance system is to ensure the latter maximize the return of the former. This approach is commonly adopted, for example, by contributions to the financial economics literature. It is particularly well suited to the analysis of obstacles to profit maximization and of the principal-agent problem that faces external, arms-length owners such as investors in listed companies in the US and Britain (e.g., Allen 1993; Chhaochharia and Grinstein 2006). The alternative type of understanding is the 'stakeholder' approach, which considers the broad constellation of actors and power relations that impact upon the exercise of control in firms, and the distribution of risk and return among these actors that emerges from this. This approach is typically encountered in academic fields such as industrial relations, political science, or economic sociology, and is most useful when considering international differences among organizational governance arrangements, as there is often considerable variety in terms of the players in the game and their relative importance from one country to another (e.g., Blair and Roe 1999; O'Sullivan 2000; Jacoby 2001; Grandori 2004; Höpner 2005; Jackson 2005).

The contrasting approaches between the financial economics focus on owners and managers and the broad consideration of any and all actors associated with the firm may be thought of as two poles of a conceptual continuum. However, neither pole is perfectly adapted to the analysis proposed by this chapter; the former because it excludes employees – and therefore pay – from the picture; and the latter because its complexity and emphasis on descriptive detail does not support the robust empirical testing of propositions that relate organizational governance arrangements to other factors. As a result, the most appropriate definition of organizational governance for this chapter falls into the middle ground between these poles, and considers the relationship among three actors or stakeholders – capital, management, and labour. This approach captures the bulk of distributional competition within the organization, as all of these actors make significant investments in it, i.e., financial or human capital, whereas more peripheral stakeholders such as suppliers and local communities have less at

stake (Gospel and Pendleton 2005). Moreover, it makes a clear distinction between managers and other types of employee that permits exploration of the finding that, in Britain, top-tier pay inequality growth has largely been driven by senior managerial jobs.

The role of managers in an organization is a complex one, as, in many ways, employees of this type simultaneously play the roles of 'employee' and 'employer'. This is to say that they not only exchange their labour in return for remuneration, but also make decisions regarding organizational strategy, the organization of production, and the employment terms of other (i.e., the majority of) employees. In some respects, therefore, the occupants of senior roles share interests with other types of employee (e.g., they both have an interest in continuing employment), whereas in others they may hold interests that are antagonistic with those of other employees (e.g., they may be rewarded on the basis of organizational performance, which under some circumstances can be improved by reorganization that entails job loss for others). Typologies of organizational governance, therefore, which specify 'owners', 'managers', and 'employees' as actors participating in the game, enable the exploration of such tensions.

A simple model of the ways in which these three actors might interact in the arena of organizational governance can be found in Dore's contrasting of the German or Japanese view of the enterprise as a community with the British or American view of it principally as private property (Dore 2000). This framework perceives that the structural relations among the three actors are the same under both approaches: managers sit atop workers within the organizational hierarchy, and shareholders sit separately from these two groups, outside the boundaries of the organization. However, what is different across countries is that in the Japanese/German paradigm managers and non-managerial workers are allied in the sphere of organizational governance, whereas in the British/American case managers are allied with shareholders. In the first instance, managers and workers perceive that their shared interests as employees should guide their choice of coalition partner in the organizational governance arena, while in the second managers perceive their interests to lie in being the agents to the owners' principals, and align themselves accordingly. For Dore, this model serves as the basis for the explanation of systematic differences between the typical approaches adopted by British/American and Japanese/German firms in relation to such issues as the character of the employment relationship, work organization, human capital development, and so on. At root,

though, these differences in outcomes can be traced back to differences in organizational governance arrangements.

In the same vein, Aguilera and Jackson (2003) and Jackson (2005) adopt a tripartite approach to understanding organizational governance arrangements, but formalize the model by defining the three actors through measurable key variables and mapping their patterns of interrelation onto distinct organizational coalition types, each of which has its own consequences for organizational behaviour and outcomes. Ultimately, their multivariate actor typologies can be collapsed into three different configurations of (interest) coalition at the level of the organization. First, an organization may be controlled by a *class coalition*, with capital and management joining to oppose labour. Second, the controlling coalition may be of *insider-outsider* format (or *insider* for short), with labour and management on the one side opposing capital on the other. These coalition types respectively correspond to Dore's company law and enterprise-as-community models noted above. In addition, they identify the possibility that a third type of coalition may exist, in which labour and capital join to scrutinize and potentially oppose management. They label this third type an *accountability coalition*. This approach to defining and measuring organizational governance arrangements opens the door to their empirical identification and analysis using quantitative techniques.

If managers are members of the dominant organizational coalition in both the insider and class coalition scenarios, the question remains as to how differences in organizational governance arrangements might feed through into relative managerial pay, as they appear well placed to advance their interests under both sets of circumstances. A plausible answer to this question revolves around the principal-agent problem inherent in the relationship between external owners and managers (Prendergast 1999). Ultimately, external owners' interests in a firm are limited to maximizing their financial return given a certain level of risk, as they are able to manage their overall risk exposure at the level of the portfolio. In contrast, managers, as employees, cannot diversify away from organization-specific risk. All else the same, therefore, owners will typically prefer that an organization pursue a riskier strategy than will managers. Furthermore, owners are not a daily presence in the life of managers, whereas non-managerial workers are. Making and implementing decisions that are in owners' interests, but which arouse opposition from workers, is therefore potentially much more taxing and difficult than vice versa.

Where external owners are not party to the ruling organizational coalition, these points are irrelevant, as managers and non-managerial workers will tend to guide strategic decisions in ways that reflect the risk preference emerging from their shared status as employees. Where owners wish to ally with managers and to ensure that managers pursue their interests, however, they must ensure that incentives are available to managers on sufficient scale to overcome their naturally greater risk aversion and to compensate for the increased difficulty of their jobs. In addition, the greater difficulty of implementing strategies that reflect owners' interests may require a more encompassing managerial hierarchy, that is, more managers. Drawing these lines of reasoning together, they suggest that managerial pay – and perhaps even the apparent demand for managers as indicated by the managerial share of the pay bill – will behave differently in class coalition-ruled organizations relative to insider coalition-ruled ones, commanding a premium that builds as the class coalition becomes entrenched over time. These conclusions apply not only to the senior executives responsible for strategic issues, but also to managers further down the hierarchy who are responsible for implementing decisions made at the top. Indeed, it may be argued that, for a class coalition to function effectively, all managers above first-level supervisors must receive some degree of relatively higher compensation than they would in an equivalent insider-coalition organization.

This reasoning suggests that there will be clear differences between the ways in which class-coalition organizations and insider-coalition organizations approach management pay – i.e., principally, all else the same, it will be higher in the former context than in the latter. However, the clear distinction across groups (coalition types) does not preclude that there could also be within-group variation in the strength of the effect of the coalition type on management pay. Certainly, it is possible to imagine that where owners are more powerful or activist, they will pursue their interests within the organization with greater intensity. One outcome of more engaged ownership, therefore, is that managers will face greater organization-specific risk and more difficult working conditions, which will in turn necessitate rising remuneration in order to incentivize them to pursue the owners' interests.

If organizational governance factors have contributed to the growth of top-tier pay inequality in Britain noted in the preceding chapter, this would imply that conditions have become more amenable to class coalitions, or at least that owners have assumed a more powerful position in relation to the other actors in organizations. A body of research suggests that a process of this kind may have been at work in Britain during the period in which top earnings have grown in

relative value (i.e., since the late-1970s). At the aggregate level, for example, it is notable that the rise of the shareholder value movement – which asserts the primacy of equity holder interests in corporate decision making – in the UK coincided with a rise in the share of national income received by capital (Ryan 1996). Across countries at the firm level, it is found that labour receives a comparatively low share of surplus in UK and that firms pay out more in dividends in UK than Germany (De Jong 1995). As German firms are often portrayed as approximating more to the insider coalition model of organizational governance arrangements rather than to the class coalition model (Donnelly, Gamble et al. 2000; Jürgens, Naumann et al. 2000; Ziegler 2000), this indicates that the UK may harbour a relatively high share of class coalition firms in international terms. As a correlate to this fact, it is reported that in the UK the CEO-manufacturing worker pay ratio is much higher (25:1) than in Germany (13:1) or France (16:1), and that this ratio doubled between the mid-1980s and mid-1990s (Gospel and Pendleton 2005). If Britain does indeed possess a comparatively high share of class coalition firms, these statistics would support the argument that class coalitions are associated with higher relative managerial pay.

In summary, a clear argument can be made to support the assertion that organizational governance factors can influence top pay, and in particular the pay of senior managers. First of all, it can plausibly be asserted that, owing to the nature of political competition for resources within organizations, governance arrangements have a degree of influence of the distribution of returns among organizational constituents. A tripartite model – encompassing owners, managers, and employees – captures the bulk of this distributional conflict within the organization, and also recognizes the special status of managers within the organization, a point of great relevance for this chapter. Essentially, these three actors typically combine in two different ways – either managers and employees ally with one another to form an insider coalition, or managers and owners ally with one another to form a class coalition. This distinction between insider and class coalitions is of crucial importance to management pay, as owners must ensure that managers are relatively better remunerated in a class coalition context in order to overcome the principal-agent problems inherent in the alliance. As a consequence, it might be expected that class coalitions will have a positive impact on relative managerial pay when compared to that prevailing under insider coalitions. A body of interrelated evidence indicates that class coalitions are well represented in the population of British organizations, and that owners may even have increased their level of influence and activism within these coalitions in recent decades. The following section of the chapter builds

on this argument to lay the foundations of an empirical test for the impact of organizational governance factors on relative top-tier pay outcomes.

Empirical strategy and hypotheses

The empirical content of the paper comprises two elements: first, the definition and classification of the organizational governance regimes observed in the data; and second, measuring the impact of these regimes upon organization-level labour demand patterns, and linking this back to the question of across-country differences in pay inequality trends. In the first case (governance regimes), I follow two paths. On the one hand, I operationalize Aguilera and Jackson's (2003) model of variation in organizational governance structures, as it defines the tripartite framework (owners, managers, employees) identified above as most applicable to this chapter in measurable terms. I label the application of this framework to the data as my 'structural' approach to the classification of organizations' governance arrangements, on account of its focus on the structure of stakeholder relationships. On the other hand, I draw on the literature to identify key variables that relate to processes of stakeholder interaction within the organization. I refer to this means of classifying governance as my 'behavioural' approach, given its focus on the ways in which the three key stakeholder groups treat one another. I use a dual approach to classifying governance regimes because the limitations of the data – which I will discuss in more detail below – mean that neither framework can be operationalized perfectly, and I believe I obtain more robust results by using the two approaches as cross-checks on one another.

I choose to approach the question of changing pay inequality by looking at labour demand patterns. My principal reason for doing so is that the theoretical framework set out above posits that organizational governance relates to the division of the surplus generated by the organization as a whole. From the perspective of managers, this relates to the share of value added that finds its way into their share of the wage bill. As relative wage bill share can be interpreted as an indicator of relative demand, it seems natural to model the impact of governance factors on pay inequality through the lens of labour demand. In order to quantify the labour demand effect of these governance metrics, I use a model that applies to the data an organization-level cost function in which the only variable inputs are different types (skill

groups) of labour. This method has two key advantages. First, it enables me directly to identify the impact of different organizational governance regimes on the profile of labour demand at the level of the organization, and thereby to make an informed judgment of their impact on pay inequality outcomes. Second, the modelling strategy has already been proven for the purposes of investigating labour demand patterns using (earlier versions of) the WERS and REPOSE data sets, as Caroli and Van Reenen (2001) engaged a similar approach in their study of the effect of organizational innovation on organization-level labour demand patterns.²³

The starting point for the analysis is the assumption that organizations can be characterized by governance regimes, that is, as being controlled by either a class coalition or an insider coalition. Aguilera and Jackson's (2003) framework, which I use as the basis of my structural analysis of governance regimes, also notes a third form of coalition – one between non-managerial employees and owners, which they call 'accountability' coalitions. However, the framework presents this not as a normal state of affairs but as a response to crises such as managerial corruption or self-dealing. Because the theory expects this outcome to be both rare and unstable, I omit it from the current analysis and focus purely on class and insider coalitions.

The structural approach to defining dominant organizational coalitions therefore maps the observed relations among the three sets of core stakeholders onto the two possible coalition types. The first stakeholder, capital, is defined in the framework as varying along three key dimensions: first, its time horizon of investment, that is, whether it takes a financial or a strategic interest in the firm; second, the balance between commitment and liquidity in its stake, a distinction which echoes the notions of voice and exit; and third, its preference for exercise of control via either equity or debt, which captures something of the investor's readiness to trade off risk and return. Broadly speaking, investors with a financial interest in the organization, a focus on liquidity, and a preference for equity control are most likely to seek to participate in a class coalition with management. This is because this type of investor essentially desires to treat the organization as a portfolio investment, and such investors manage risk by balancing their portfolio, rather than by controlling risk at the level of the individual investment. There follows the strong potential for a clash of interest with labour,

²³ Or – as they label it – 'skill-biased organizational change'.

for labour's (human-capital) investments are bound up in a single organization, and it cannot diversify away its risks. Management, however, whose members usually have the personal resources to hedge their own risk to some degree, can be persuaded that a high-risk/high-return approach to running the organization is in its favour if it is rewarded accordingly. To the extent that owners are less intrusive or more long-termist in orientation, the likelihood is greater that an insider coalition will emerge.

The second organizational stakeholder – labour, or non-managerial workers – is also defined in the framework as varying according to three factors. These, in turn, are: strength of voice within the organization, as implied by firm-level representation rights; the patterns of inter-worker solidarity, as captured by the mode of union organization – class or craft versus enterprise; and the relative importance of general and firm-based skill formation as an indicator of workers' degree of attachment to a particular organization. Insider coalitions are most likely where labour has significant voice within the organization, where unions are present and organized on enterprise lines, and where skill-formation is based on the firm, as in this case labour will have made a large firm-specific human capital investment and will have the means to defend it. To the extent that labour has either less influence within the organization or a lower human capital stake in it, class coalitions become more likely.

The third stakeholder, management, is seen to vary in relation to two factors. First, management's form is related to the variety of knowledge and decision making dominant in the organization – with an approach combining general knowledge and hierarchical decision making being counterposed with another which pairs functional knowledge and a consensual approach to decision making. Second, management takes on different characteristics according to the nature of the managerial labour market as it is experienced at the level of the firm: the extent to which firm-level managerial labour markets are closed or open, or resemble internal or occupational labour markets. Class coalitions are most likely where management is of the general knowledge/hierarchical decision making type and managerial labour markets are open, as both features enable the running of an organization as a portfolio asset. The first factor, for example, allows the organization to function even where management must impose its decisions over the protest of other workers; and the second means that managers can effectively further hedge their own exposure to organizational risk, as there will always be other high-status jobs to take. To the extent that management is reliant on the cooperation of workers or is also making a firm-specific human capital investment,

management's interests will more closely coincide with those of labour and an insider coalition will be more likely.

By identifying the three stakeholder groups at work within an organization, and by describing the variation in the form of each of these in relation to a set of key factors, the framework produces a multivariate map that can be applied to the characterization of any given organization. However, as the ultimate intention behind the framework is that this multivariate map underpins, and can be collapsed down into, a bivariate distinction between class and insider coalitions, my approach to modelling must enable me both to capture the multivariate diversity among organizations, and then to translate this into bivariate form. In order to do this, I use the technique of cluster analysis, which analyses the proximity of observations in multivariate space and sequentially clusters them with their most similar counterparts. I identify the two coalition types by constraining the clustering process to continue to the point that there remain only two distinct groups of observations. With this, I am able to construct an indicator variable of structurally defined coalition type that can be used in the remainder of the analysis.

In addition to the structurally inspired cluster analysis of coalitions, I identify variables which constitute behavioural indicators of stakeholder interaction that suggest the presence of one coalition type or the other. I do this for two reasons: first, because the difficulties inherent in operationalizing the complex framework used in the structural version of the analysis (see discussion of data below for more details) make it wise to cross-check the structural results in some way; and second, because the comparability of the two surveys used means that an almost identical and appropriate question on inter-stakeholder behaviour appears in both. This question asks management the degree of worker involvement in the implementation of the most important change in the workplace over the preceding few years (five in Britain, three in France). Where managers negotiated or consulted with workers over this change, I conclude that an insider coalition exists. Where no such negotiation or consultation took place, I infer that a class coalition exists. In the case of Britain alone, I supplement this derived variable with another, which is based on a question probing the extent to which management is accustomed to consult with workers over decision making within the workplace. Where management tends not to do so, I interpret this as evidence of the presence of a class coalition (and vice versa).

The product of this behavioural approach – labelled so in that it focuses on the observed behaviour of stakeholders in interaction rather than on their structural attributes – is, as in the case of the structural approach, an indicator variable of coalition types that can be used in the remainder of the analysis. The behavioural approach is inspired by two linked observations. The first, noted above in the discussion of the structural approach, is that insider coalitions are more likely to be the outcome where workers have voice and where consensual decision making is dominant: hence, evidence of the exercise of the former and the existence of the latter is to be taken as evidence that an insider coalition is at work. The second derives from the wider multi-stakeholder organizational governance literature that negotiation or the seeking of consensus between management and labour over strategic planning or implementation issues is much more typical of organizations based in the quintessential ‘insider’ economies of Germany and Japan than of those based in the more classically market-orientated Britain or US (Gospel and Pendleton 2003; Jackson 2005).

As both the structural and behavioural approaches to the identification of coalition types are applied with the same aim in mind – i.e., to produce an indicator variable of coalition type – the hypotheses about the impact of coalition type on the profile of labour demand are constant no matter which of the two variables is used in the performance of the analysis. Following the discussion in the preceding section of this chapter, the fundamental proposition to be tested is that class coalitions will be associated with relatively higher managerial pay than insider coalitions. Consequently, a class coalition will presumably seek to maximize the share of local value added that goes to owners and to managers, even where it is able to increase total value added (i.e., even if the pie is getting bigger, they will want a greater proportionate slice of it). All else the same, this means reducing the non-managerial share of the organizational wage bill. Similarly, as in an insider coalition there is not the same clear distinction between managers and non-managers as regards the treatment of pay, I expect that non-managerial workers will benefit in relative terms from the presence of an insider coalition (rather than a class coalition). I explore this idea by measuring the wage bill share of a key set of non-managerial workers – the occupational group which is largest in the organization in the first time period recorded by the surveys.

This basic framework may be translated into the following hypotheses:

Hypothesis 1 – the presence of a class coalition will be associated with an increase in the managerial share of the wage bill (or employment); and

Hypothesis 2 – the presence of an insider coalition will be associated with an increase in the wage bill (or employment) share of the largest non-managerial occupational group.

Ultimately, these hypotheses regard the profile of labour demand in the organization. In the first case, it is suggested that class coalitions will be associated with apparently rising organization-level demand for managerial skills; and in the second, that insider coalitions will be associated with apparently relatively equal demand for all skill groups in the organization. The first hypothesis, therefore, implies that a preponderance of class coalitions will provide the necessary underlying conditions for the kind of top tier-biased shifts in pay inequality witnessed to varying degrees in Britain and France in recent years. The second, though, indicates that where insider coalitions predominate, there will be little (coalition-related) change in the distribution of pay.

In order to provide a point of reference for my discussion of the impact of organizational coalitions on organizational patterns of labour demand, I also test the conventional SBTC hypothesis on the data. This test – as per the standard SBTC hypothesis – assumes that technological change in our era is deterministically biased towards the highly skilled, i.e., it is by its nature complementary with their skills. If this hypothesis is to hold, technical change (relating to capital equipment or the organization of production) at the level of the organization should have a visible impact on labour demand patterns at the same level. Hence, my test concerns whether the mere implementation of technical or organizational change in the period preceding the panel is associated with an increase in demand for skilled labour of all kinds (and not just the portion of skilled labour in managerial positions), or:

Hypothesis 3 – technical change in the preceding period will be associated with an increase in the wage bill (or employment) share of highly skilled workers in the subsequent period.

If this relationship were confirmed by the data, it would serve as a strong piece of evidence that the influence of coalition type on labour demand were minimal, rendered negligible by

the overriding imperatives of technological change and market pressures. However, if this relationship were not visible in the data, it would provide buttressing evidence that the politics of implementation were potentially of great importance in the shaping of organizational patterns of labour demand.

The empirical test of labour demand effects used in this chapter uses a model that links organizational governance regimes and labour demand outcomes at the organization level. The framework for testing these ideas is an organization-level cost function in which the only variable inputs are different types (occupational and skill groups) of labour. From this basis, cost share equations can be derived for each group, and these are operationalized in long-differenced form to strip out the correlated fixed effects of unobserved heterogeneity such as management quality. The resultant wage bill share equations are of the form

$$\Delta S_{fit} = \beta_{f0} GC_{it-1} + \beta_{fK} \Delta \ln K_{it} + \beta_{fY} \Delta \ln Y_{it} + \alpha_2' x_{it-1} + \gamma_1' IND_j + \gamma_2' REG_k + u_{fit},$$

where S denotes the wage bill share of the workforce, with occupational/skill groups defined by f , establishments by i , time period by t , industry by j , and region by k . GC is a dummy variable for governance coalition type (measured in the initial time period). K is a measure of physical capital, and Y of value added, while x is a vector of establishment characteristics. IND and REG are, respectively, industry and region dummy variables. In this form, the equation permits a test of the impact of coalition type on the change in an occupational/skill group's share of the workforce in a subsequent time period, which is interpreted as an indicator of the evolution of the organization's labour demand profile. Owing to the absence of good information on capital stocks and output in the data sets used here, I assume that these can be adequately proxied by industry dummies and data on total employment respectively.

Before proceeding to the results on the analyses, it is necessary to clarify two points in relation to the modelling procedure. The first of these regards the model's use of a time-specific attribute – i.e., the type of governing coalition in place in the first time period of the panel – to explain change (in labour demand patterns) over the course of the panel. To some extent, this is an unconventional use of panel data, as models of this variety are often structured such that change occurring during one period of time is seen to explain change occurring during a subsequent period of time (i.e., it is posited that change causes change). However, I argue that the difference between this and my use of a time-specific attribute to

explain change is justified by the reasoning underlying the model. As I hypothesize that the two types of controlling coalition provide different environments for the determination of managerial and non-managerial pay respectively, I expect these to change in systematically different ways over time depending on the underlying coalition type, and for this change to be reflected in relative labour demand outcomes.

The second point for clarification pertains to the level of observation used in the model. Owing to the nature of the surveys I use, this level of observation is that of the establishment. However, the model – being a derivation of a production function – effectively presupposes the use of firm-level data. Evidently, this is not an ideal state of affairs, but I contend that it is still possible to produce useful results from this set-up. I make this contention for two reasons. First, each of the data sets has a significant share of single-establishment firms, for which the establishment-level and firm-level perspectives are identical: establishments belonging to single-establishment firms represent 39% of the weighted WERS sample and 47% of the weighted REPONSE sample. This means that for a large share of each sample the form of the model is entirely appropriate to the data. Second, while it must be recognized that establishment-level outcomes will vary within a multi-establishment firm, the average establishment-level outcome within such a firm will be equivalent to the firm-level outcome itself. Moreover, there is no reason to believe that the establishments in either – French or British – sample suffer any kind of selection bias vis-à-vis their parent firms. Consequently, it follows that, among the establishments belonging to multi-establishment firms, the establishment data employed in the analyses will on average be representative of the (underlying) unobserved firm-level data – although it will be less statistically precise. All the same, it remains possible to draw robust inferences from model even where it applies to the data relating to establishments belonging to multi-establishment firms.

These clarifications close my discussion of my empirical strategy and hypotheses. In the subsequent section of the paper, I present the data I use in testing these hypotheses and provide detail on the operationalization of the variables that capture labour demand patterns (independent variable) and organizational coalition types (explanatory variable). It is to this subject that I now turn.

Data description

The primary data sets used in this analysis are the 1998-2004 two-period panel element of the British Workplace Employment Relations Survey (WERS) and a comparable version of the French Enquête sur les Relations Professionnelles et Négociations d'Entreprise (REPONSE). Both surveys are conducted at the establishment level, and comprise large-scale samples which are representative of a population corresponding to a large proportion of all establishments in each country (see Table 1). The sample common to the two surveys is composed of establishments in the private sector with 20 or more employees in industrial sectors NACE D-O (roughly corresponding to manufacturing and private-sector services). There is a high degree of comparability across the surveys as regards the types of questions posed and the richness of the resultant data sets.

As the preceding section shows, the key variables for the analysis include the following: details of the establishment workforce size and its breakdown by skill group; a set of largely structural establishment characteristics; and industry and region dummies. While a number of variables explore questions of change in the period 1998-2004, the majority of them relate to static, structural establishment characteristics, and are sourced from the first period's data in order to be in alignment with the explanatory variable of coalition type. These characteristics are chiefly the control variables, and serve to filter out variation in size, production type, market environment, etc.

There are two dependent variables which are used in the course of the analysis: first, a measure of the long-differenced change in the log share of establishment employment for the skill group in question; and second, a similar variable that records the change in the log wage bill share of the group. The skill groups of interest are managers on the one hand, and all high-skill workers on the other. These groups are defined at the 1-digit level by the relevant national occupational classification – the Standard Occupational Classification (SOC 1990/2000) in Britain, and the Professions et Catégories Socioprofessionnelles (PCS) in France. Owing to the differing structures of the two systems of classification, it is not possible to harmonize the skill share variables across countries. All the same, it is possible to identify the groups of employees whose work primarily consists of directing and monitoring

the work of others (managers and cadres), and the groups of employees in which are concentrated the highest levels of educational qualifications.

In the British case, the managerial group is defined by SOC major group 1, 'managers and senior officials', and the high skill group corresponds to SOC major groups 1-3, which encompass said managers, 'professional occupations', and 'associate professional and technical occupations'. Labour Force Survey (LFS) data show that, in 1998, this definition of highly skilled workers includes 14% of the 16% of British employees in employment who hold a first degree or higher educational qualification. This statistic can be broken down in the following manner: 40% of managers (SOC1), 80% of professionals (SOC2), and 52% of associate professional and technical workers (SOC3) hold such a qualification. For France, the managerial group is represented by PCS 3, 'cadres et professions intellectuelles supérieures', and the high skill share by the managers in combination with PCS 2, 'artisans, commerçants et chefs d'entreprise', and PCS 4, 'professions intermédiaires'. In 1998, Enquête Emploi (the French equivalent of the LFS) data show that 12% of employees in employment held a first degree or higher educational qualification. The high-skill group as defined by the PCS classification contains about nearly 10% of these 12% of employees with higher educational qualifications. Broken down by the ISCO classification – which is highly comparable to the British SOC classification – these data show that 31% of managers, 59% of professionals, and 10% of associate professional and technical workers hold a first degree or higher qualification. In the cases of both Britain and France, therefore, the occupationally-derived definition of the group of 'highly skilled workers' is an effective proxy for one defined directly by observation of highest educational qualifications.

As an indicator of labour demand, changes in employment shares are imperfect. They capture only unit quantities and omit information on unit prices, with the consequence that they fail to control for changes in the (supply) structure of the labour markets with which the organization interacts. For this reason, I calculate a measure of changes in the wage bill shares of skill groups and use this to profile labour demand at the level of the establishment. In the absence of establishment-level wage data, I compute this variable by weighting establishment employment shares by group mean wages calculated for the relevant years at the level of the 1-digit industry by 1-digit region cell.

I calculate dependent variables – changes in wage bill share – for three different employee groups. These three variables correspond to the three different hypotheses presented above. The first – managerial wage bill share – is used to probe the possible impact of a class coalition on the profile of organizational labour demand. The second – the wage bill share of the largest non-managerial occupational group – is used to test for the possible impact of an insider coalition on the profile of labour demand. The third dependent variable – the wage bill share of the group of high-skill workers – is used to test for the impact of simple SBTC on the profile of labour demand at the level of the organization, which serves as a kind of cross-check for the broader investigation of the possible influence of governing coalition type.

Turning to the governance variables, I first attempt to operationalize the Aguilera and Jackson (2003), or structural, approach described above. This model demands a great deal from the data set, and in some respects stretches the surveys used here to their limits. Still, I am able to find reasonable – if not perfect – proxies in most cases in which the surveys do not collect the precise information required.

With regard to the capital variables in the Aguilera and Jackson framework, both surveys report the basic ownership structure of establishments. Thus, I am able to capture something of the dimensions of investment time horizon and relative investor commitment by reference to whether an organization is a privately held or publicly quoted company. Here I assume that publicly quoted organizations have the more short-term and liquidity-conscious investors, whereas the others are more closely held and are likely to have more strategic and committed owners. In addition, I use a measure of the emphasis the organization places on the issue of production quality as a proxy for the presence of strategically minded owners with a long-term mindset. This choice is influenced by the widespread argument that such owners are a prerequisite of quality-based competitive strategies (Streeck 1997; Hall and Soskice 2001a). Unfortunately, neither survey offers any variable that could cast light on the issue of debt or equity exercise of control. Consequently, I omit this variable from the model and assume that the other two capital variables characterize the ownership profile of the organization sufficiently (on the grounds that I expect these different dimensions of capital to co-vary in any case, e.g., the ‘insider’ model in capital is thought typically to consist of long investment horizons, concentrated ownership, and a preference for debt financing (Gospel and Pendleton 2003)).

Regarding the labour element of the framework, I capture worker strength of voice within the organization through a variable that records the presence or absence of strong local representative institutions: in Britain a strong consultative committee and in France a comité d'établissement/entreprise. The pattern of inter-worker solidarity is represented through a measure of the extent of union density at the level of the establishment. A further consideration is the dominant mode of skill acquisition. This issue is assessed through a measure of training intensity at the workplace, with high training intensity interpreted as a greater commitment to the intra-organizational production of skills.

In the third and final element of the framework, I map differing management orientations by means of three variables. First, the decision making culture of the organization is evaluated through a dummy variable for the existence of performance-related pay schemes for management. In France, this variable is specified more precisely as capturing the absence or presence of stock-based compensation for managers on the grounds that this type of pay vehicle is most likely to align fully the interests of managers with those of owners (outsiders). Further, a metric of the intensity of information sharing by management with non-managerial workers (around such issues as investment and staffing plans and organizational performance) is used to proxy the degree to which management makes decisions without involving workers. Where the information sharing measure is high, it can be assumed that management is consensual – or insider-leaning – in its approach. It is assumed that variable pay is correlated with individualistic, non-consensual decision making. As for the question of the relative openness of managerial labour markets, this is proxied (somewhat imperfectly) by the overall rate of turnover in the organization.

In my second take on the question of organizational governance, I operationalize the behavioural versions of this variable. This process is less complex – and poses fewer challenges – than did that for their structural equivalents. In both data sets, there exists a survey question which probes worker involvement – during the period immediately preceding the survey – in deciding how workplace change should be implemented. I derive a dummy variable from this question and use it as the key behavioural indicator of governance type: where worker involvement is high, I treat this as evidence of an insider coalition, and vice versa. In the British case – where the survey asks a wider range of questions on this subject – this variable is supplemented by another that records whether management is amenable to involving workers in general decision making in the establishment.

The other groups of variables used in the analysis comprise on the one hand a set of indicators of recent organizational and technological change, and on the other the set of establishment characteristics used as controls. The change variables are essentially identical for the two countries in all but the length of the period preceding the survey to which they relate: three years in France and five years in Britain. Both surveys simply ask whether significant changes have occurred in the organization of work and whether new technologies have been introduced at the establishment. The simple set of control variables encompasses 1-digit occupational shares of establishment employment, 1-digit dummies for industry and region, and a measure of the change in overall employment at the establishment. In addition to these characteristics, the complex set of controls includes dummies for above-average financial performance, lagged total establishment employment, enterprise total employment, and domestic ownership (as opposed to foreign ownership).

Having begun the implementation my empirical strategy by operationalizing the necessary variables from the data provided by the WERS and REPOSE surveys, I next proceed to the stages of identifying organizational coalitions and of modelling the impact of these coalitions on the organizational profile of labour demand. The section which follows presents the results of these stages of the analysis.

Results

This section of the paper presents the results of the two elements of the empirical analysis proposed above. First, I define and compare the different distributions of organizational governance regimes observed in the data for the two countries. In order to do this, I discuss the derivation of the structural governance variables, and the relationships between them and their behavioural equivalents. I round out this stage of the analysis by identifying the main inter- and intra-country features that emerge in relation to the study of governance regimes or types. Second, I turn to the question of measuring the impact of these governance regimes upon organization-level labour demand patterns. Having presented results for the regression models that perform this test for each country, I close this section of the paper by considering

the importance of my findings on labour demand patterns for the explanation of recent top-tier pay inequality trends observed in Britain and France.

I take my initial step in defining organizational governance types by applying the Aguilera and Jackson framework – i.e., my structural approach to the definition of these types – to the data. As outlined above, my method here is to operationalize the variables describing the key features of capital, labour, and management in each organization, and then to feed these variables into a cluster analysis in order to classify organizations as cases of either class or insider coalitions. However, before proceeding with the cluster analysis, I examine the bivariate relations among its constituent variables by producing the relevant correlation matrix (Tables 2 and 3). This step serves as a means of sense-checking the input data in the light of the overall framework.

Reassuringly, the matrices for both countries indicate that these relations are mostly in the expected direction and significant within the three stakeholder groups that make up the framework (diagonal lines represents capital variables, vertical lines labour, and horizontal lines management). Thus, for example, high local worker solidarity is positively and (mostly) significantly correlated with intra-organizational worker voice mechanisms and skill production. While it is surprising that, in Britain, PLC status correlates positively and significantly with a strong quality focus – the proxy for committed, strategic ownership – this may be picking up on the fact that non-PLC firms in Britain are also exposed to short-horizon financing pressures owing to the transactional, short-term approach of business banks in that country. Thus, the assumption – common in the ‘Varieties of Capitalism’ literature – that the alternative to transactional, liquidity-focused capital markets takes the form of long-term, relational banking may not always be appropriate. In Britain, therefore, size – which correlates with PLC status – may be the least-worst means for a firm of insulating itself from external financing pressures to enable the pursuit of a quality-focused strategy.

In both countries, the labour-related variables all interrelate as expected. However, the managerial variables conform less to predictions, particularly as in both places managerial variable pay is positively and significantly associated with information sharing. This suggests that the latter variable may not pick up the intended dimension of consensual decision making, and may instead capture something akin to the degree to which information flows within the organization are confined to the managerial hierarchy, that is, the extent to which

the hierarchy monopolizes information and decision making relative to the wider workforce. Collectively, these results indicate that the operationalization of the Aguilera-Jackson variables is successful, as its outcomes conform to the expectations created by the framework.

Having conducted this sense check, I move on to perform the cluster analysis that will produce the structurally based classification of organizational governance types. For each country, the cluster analysis of the structural governance variables is constrained to stop once it arrives at two separate clusters. This rule is intended to translate the multivariate array of the structural framework into the bivariate system of coalition outcomes – i.e., class or insider. In both country cases, in any case, it is found that the clusters are most distinct when grouped at this level, as indicated by the fact that the standard measure of fit – the Calinski & Harabasz pseudo-F index – is highest at this level of clustering. The result therefore supports the theory's emphasis that there are two key forms of organizational governance regime.

The output of the cluster analyses shows that while both data sets yield unequally sized clusters at this level, they are more equally sized in France than in Britain. However, it remains to identify the resultant clusters as either class or insider coalitions. In order to do so, for each country's data I look at the differences between the means (or proportions) across the two clusters of the variables used in the cluster analysis (Tables 4 and 5). It is immediately apparent that – for both countries – there is a cluster that is characterized by a high quality focus, higher local worker solidarity and more widespread intra-organizational worker voice mechanisms, higher internal skill production, broader information sharing, and lower turnover. In the terms of the Aguilera-Jackson framework, therefore, this cluster can be identified as being composed of insider-coalition firms. In addition, the differences across the clusters are largely significant at relatively high levels, indicating that the conceptual distinction between class and insider coalitions is reflected in the real data. Interestingly, having apportioned the observations between the two categories, a significant disparity across countries is apparent: in Britain, the share of insider-coalition organizations is dwarfed by that of class coalitions, as it stands at only 17% of the weighted sample of establishments; yet in France the share of insider coalitions stands in the clear majority at a 56%.

A minority of variables does not conform entirely to the expectations of the framework. First, it appears in both countries' data that a liquid and short-term ownership orientation – as proxied by publicly quoted or PLC status – is more widespread among firms identified by the

insider coalition indicator than among class-coalition organizations. Second, in France, managerial variable pay is more widespread among insider coalitions than among class coalitions. The PLC variable result is particularly surprising because the Aguilera-Jackson model implies that strategic and committed capital is a condition of insider coalitions. However, one possible lens of interpretation for these observations might be Berle and Means's (1932) prediction that the separation of ownership and control in the publicly quoted company, and the dispersion of ownership created by the trading of equity on secondary markets, reduce owners' ability to monitor and sanction managers, and thus grant management room for manoeuvre to build insider coalitions. In any case, the quirk of this result is in the minority, and so I conclude that it is more likely to reflect (known) challenges for the operationalization of this variable than some critical failure of the conceptual framework for the structurally based classification of governance types.

Having constructed the structural coalition variables, the next step is to perform the cross-check of comparing them to their behavioural equivalents. One variable of this latter type is available for both countries' data – an indicator for worker involvement in deciding the implementation of workplace change, which I treat as analogous to the structurally derived 'insider coalition' variable. This variable conforms to expectations in that it is negatively and significantly correlated with the (structural) class coalition variable, i.e., it is positively correlated with insider coalitions (Tables 6 and 7). Further, while the share of organizations falling into this behavioural category is smaller than its structural equivalent in both countries, the across-country pattern is consistent with that observed in the case of the structurally derived governance variable – i.e., that insider coalitions are relatively more common in France than in Britain (Table 8). The second behavioural variable for Britain – which indicates cases where management tends not to consult with workers on decisions – is intended as a parallel to the structurally derived 'class coalition' indicator. It is aligned by sign and significantly associated with the other two governance variables for Britain (Table 6), which further bolsters the case for the collective robustness of the variables.

Overall, then, while the association between the two types of governance variable (structural and behavioural) is not total, it generally conforms to expectations and is for the most part strongly statistically significant. Thus, it seems that the two types of variable are largely picking up the same dimension of variation among organizations, strengthening the case for the use of the conceptual tool of 'coalitions'. Consequently, I conclude that both the

structurally and behaviourally based variables identifying class and insider coalitions are sufficiently robust to support the next stage of the analysis, that is, the modelling of the impact of governance types upon the profile of labour demand. Further, these different variables all point to the same set of conclusions as regards the key intra- and inter-country features of the distribution of governance types. In sum, it seems that insider coalitions – however designated – constitute a small minority of organizations in Britain, but a rather larger share of them in France.

Having explored the distribution of governance types among firms in the two countries, I now move forward to assess their impact on the profile of organization-level labour demand. I do this by plugging the structural and behavioural governance type variables in turn into the regression model set out above. The background to the analysis is presented in Table 4, which shows summary statistics for the various indicators of the profile of labour demand (i.e., the dependent variable in the model). Essentially, there are two different types of indicator – on the one hand growth in the employment share, and on the other growth in the wage bill share – and these are broken down for a number of different occupational groups of employees (managers, skilled workers, and the largest non-managerial group of employees in the establishment). The results are weighted in order to be representative of the appropriate slice of the overall establishment population.

Looking first at the employment growth statistics, it is apparent that mean growth in establishment employment is positive in both countries during the period 1998-2004, although it is considerably stronger in France even accounting for the large standard error on the British estimate. This result is consistent with LFS and EE data for the same period. However, this headline observation conceals a considerable amount of variation by occupational group. For example, in both countries the mean managerial share of the workforce shrinks over this duration, which is an unexpected result in a time of overall employment growth and technical change alleged to strengthen the position of skilled worker groups relative to that of unskilled workers. In contrast – although more reassuringly – the mean establishment employment share of skilled workers (which group encompasses managers, professionals, and technical and associate professional workers) rises strongly in France and remains more-or-less steady in Britain. This result suggests that demand for professionals and technical/associate professionals has perhaps outstripped that for managers. As for the fortunes of the largest non-managerial occupational group at the level of the individual organization, the trend is

strongly negative in Britain and France, although of a lesser magnitude in France. A possible contributing factor to this trend, though, is mean reversion: the group that is largest in one period drops back relative to others in the next.

Broadly speaking, the wage bill share results for both countries largely conform to the results obtained for employment shares, although the magnitudes of change in this dimension are generally a little lower. This result suggests that the movement of wages for these groups has countered to some (small) extent the shifts in employment quantities. As per the employment growth statistics, the one unexpected finding is that the managerial wage bill share appears to have diminished in both countries over the period in question. Certainly, this result appears puzzling in the light of the finding of the preceding chapter that in recent years managers have done rather well in Britain and France – in terms of both employment and relative wage growth.

However, there are two factors that can account for a discrepancy of this form. First, the two chapters rely on different occupational classifications: whereas the preceding chapter can identify occupation at the 2- or 3-digit ISCO or SOC level, the data used in this paper is limited to 1-digit occupational information. In addition, the PCS classification used for France in this paper maps imperfectly onto the ISCO-type classifications used elsewhere. As a result, the data analysed in this chapter tend to strip out some of the detail – relating, say, to the varying fortunes of different types of managers – that the preceding chapter was able to probe.

Second, the data sets used in this paper consist of considerably smaller sample sizes than those found in the NES, DADS, LFS, and EE. Consequently, there is an attendant greater risk of error owing to outliers, etc., with WERS and REPOSE (especially in the case of the British data). Indeed, while it is impossible to compute weighted medians of the data, study of the unweighted data (the means of which do not differ greatly from those of the weighted data) indicates that median managerial employment and wage bill share growth is slightly positive for both Britain and France. This suggests that labour demand at the level of the typical establishment might in fact be biased towards the broad group of managers, once the impact of outliers is screened out.

On the whole, therefore, while direct comparison between the findings generated in the current analysis and those of the preceding chapter is somewhat problematic, a joint view of the two sets of results suggest the likelihood that lower-status (supervisory and middle) managers have been squeezed to some extent in both countries in recent years. This is not inconsistent with the organizational governance perspective, as these types of manager are not part of the strategic core of the hierarchy that composes the collective actor of ‘management’ (i.e., senior managers and executives). Nor is it inconsistent with an SBTC-inflected interpretation: high skills are embodied in senior managers, not in supervisors – hence any complementarity with technological progress that might positively influence labour demand will apply to the former group but not to the latter.

Having assessed the data underlying the differing forms of the dependent variable, I next probe the impact of coalition types on the organizational profile of labour demand. This step involves the application of the dependent variables and the coalition variables described above to the regression model set out previously. While I test both forms of the dependent variable – employment shares and wage bill shares – there is little difference between the results obtained. As I prefer the wage bill share variable on conceptual grounds – i.e., that it is a better indicator of labour demand than the employment share variable, as it captures change in both quantities and prices – I present results here only for this form of dependent variable.

The resulting wage bill share regression results are reported in Tables 10 and 11 (Britain and France respectively). These tables display the coefficients of interest for three different groups of models. First, the simplest form of the model regresses the dependent variable on only the change in establishment employment and regional and industry dummies. This version of the model is intended to probe for general trends in the data prior to consideration of the key hypotheses of this chapter. Second is a form of the model that tests this chapter’s third hypothesis – i.e., that patterns of organizational labour demand can be explained by simple SBTC factors. Consequently, this model tests for the impact of lagged organizational and technological change on the dependent variable. Third, I test hypotheses one and two of this chapter using both the structural and behavioural coalition indicators. To provide the fullest picture possible, I report regression results for three versions of the dependent variable – changes in managerial, high-skill, and largest non-managerial occupational wage bill shares

– for all three forms of model described here, and applying both simple and complex sets of control variables (i.e., the other establishment characteristics of interest).

To begin, the simplest model shows only that in Britain the managerial share of the wage bill drops as overall establishment employment rises. This suggests that where establishments grow in Britain during this period, they do so through the addition of non-managerial workers, at least in the short to medium term. The parallel French results are all insignificant.

The test of hypothesis number three produces some interesting results. Strikingly, the impact of organizational change is such that it appears not to support the simple SBTC hypothesis. Further, the results are rather different to those derived by Caroli and Van Reenen using 1990s data (Caroli and Van Reenen 2001). Whereas they found that organizational change (specifically, decentralization and delayering) tended to lead to an increase in the wage bill share of skilled workers relative to their unskilled counterparts, I am unable to find similar evidence. On the contrary, my results for Britain are strongly negative and significant, implying that, in the period of my analysis, this type of change is implemented in ways that contradict Caroli and Van Reenen's predictions. None of the relevant French results are significant. Nor are any results for the impact of a technological change variable (not shown in the table for this reason). For my purposes, these findings tend to reject hypothesis number three, and support my contention that organizational and technical change are not essentially skill-biased, but that their impact is instead influenced by the context in which they are implemented.

Turning to consider hypotheses one and two, it is necessary to focus on the impact of the governance variables in the different forms of the model. It is immediately apparent that there are no consistent patterns across the two countries in this regard. However, this is not to say that evidence in support of the hypotheses is lacking. In relation to the first hypothesis – that class coalitions will see rising relative managerial shares of the wage bill – the British data show support in that the behavioural indicator of class coalitions is positively and significantly associated with this outcome. However, this result stands somewhat alone, as the structural and other behavioural indicator are both insignificant in this regard. The French data also provide no support for this hypothesis. On the contrary, the coefficients on these variables for France, while weakly significant, are of the opposite sign to those expected. Indeed, the French results suggest that the managerial share of the wage bill is positively

impacted by *insider* coalitions and negatively impacted by *class* coalitions!²⁴ This is a puzzling result, being the opposite of the prediction. What, then, to make of this? A possible response may be built on the observation that the occupational categories available in the data – in France, cadres, techniciens, employés, and ouvriers – are much broader than would be ideal. In particular, the management category (here, cadres) casts its net rather wider than the strategic management team that is the assumed meaning of ‘management’ in the organizational governance literature. Thus, the French result that class coalitions are associated with shrinking management and core non-managerial workforce shares may simply be picking up the shedding of non-strategic middle and supervisory managers as part of strategic management’s attempts to rein in the share of wages in total value added. On the whole, though, while there is solid evidence from Britain that class coalitions bias the profile of organizational labour demand towards managers, the evidence from France is weak and even contradictory.

On the subject of the second hypothesis – that insider coalitions will tend to be associated with a rising wage bill share for the largest non-managerial occupational group – neither the British nor the French data offer supportive results. In fact, there is not a single statistically significant result for any type of governance type variable in either country – whether in support or denial of the hypothesis. Interestingly, however, the expected result emerges strongly in Britain in relation to the group of highly skilled workers, rather than the largest non-managerial group specified in the hypothesis. While this is not the predicted result, it can perhaps be explained by reference to cross-tabulations which show that the workplaces in which this coalition variable is positive have on average a much more highly skilled workforce than those in which it is negative. In these cases, therefore, it is reasonable to assume that the skills of non-managerial workers in general are central to their employers’ competitive strategy, which would endow them with greater power to insert their collective interests into organizational decision making, e.g., around hiring. Taking this into account, it seems that insider coalitions might, at least in Britain, have the predicted positive impact on the wage bill share of core non-managerial workers where those workers are sufficiently highly skilled to give them real voice within their coalition. This result also suggests that the largest occupational group variable is insufficiently sensitive to pick this up this type of

²⁴ It should be noted that, for the structural coalition indicator, a significant result emerges for France only once the sample has been restricted to firms in which strategic change of some kind has actually occurred in the previous few years.

influence. All the same, the evidence that insider coalitions skew the profile of organizational labour demand towards non-managerial workers is weak, even if it is not non-existent.

On balance, the results generated by the model provide some – but not overwhelming – evidence in support of hypotheses one and two. This outcome indicates that while the question of organizational governance types may have some impact on labour demand patterns, this impact is of a limited nature. Moreover, it seems that the predictions of the framework are rather more effectively borne out by the British data than the French. This may be linked to the fact that in Britain insider coalitions are in the small minority, whereas they appear to stand in the majority in France. Thus, while in Britain they are in some sense abnormal and stand out clearly from the mass of other organizations, in France they perhaps represent the norm from which other organizations must struggle to distinguish themselves. For this reason, the behaviour of insider-coalition firms will be that much more distinctive and identifiable in Britain than in France, with the outcome that the distinction between insider and class coalitions is more likely to produce identifiable results in the former location.

If there is limited evidence that organizational governance factors affect labour demand patterns – especially in Britain – what implications does this influence have for the debate about changes in the distribution of pay in recent years? As a first point, it was suggested above that the process imagined in hypothesis one – of class coalitions’ relative inflation of managerial wages and employment – might provide a possible contributory explanation for the recent trend in Britain and France for rising top-tier pay inequality. If this were to be true, one likely condition would be that the share of class coalitions among all organizations would also have to be rising over time – i.e., more class coalitions leads to growing overall pay inequality. Table 12 reports relevant data on the trends in the distribution of governance types in the two countries. Certainly, it is apparent that both countries have shifted towards the greater predominance of class coalitions, and the rate and magnitude of change seem greater in Britain, which would be consistent with the observation of a more rapid expansion of top-tier pay inequality in that country. There are caveats, however: this conclusion is built on a limited foundation of data, as the ‘structural’ coalition variables cannot be calculated over time for either country owing to shifting survey formats over time; and ‘behavioural’ data are limited in their availability for France (none for 1992). All the same, the limited information available indicates that where class coalitions are associated with a bias in labour demand

towards the managerial group (i.e., Britain), the apparently rising share of class coalitions among organizations may be contributing towards increasing top-tier pay inequality.

Further supporting evidence that this is the case emerges from the results presented in Table 13, which summarizes the output of logit regressions of the different governance type variables on a set of establishment characteristics. It emerges from this exercise that insider coalitions are negatively and significantly associated with the sectors of financial services and business services in both Britain and France. This is an interesting result in that the preceding chapter found that these sectors were the primary source of increasing top-tier pay inequality in the two countries. Therefore, that class coalitions are most preponderant in these parts of the economy suggests further that governance type, through its (limited) impact on patterns of organizational labour demand, has a degree of contributory influence over pay inequality outcomes.²⁵

As a final comment, there appear to be significant differences in strategic approach between insider and class coalition firms. Certainly, it is notable that insider-coalition firms are more likely in both countries to effect workplace change. The meaning of this observation is not entirely clear, but there are signs that the types of change implicated are those associated with economic dynamism (technological change and introduction of new products or services) and/or movement up the value chain (reorganization, flexibilization, and new pay systems). In addition, it is striking that there is no significant association between financial performance and coalition type in either country, as one might expect that the priorities of a class coalition will make it more likely to achieve relatively high financial performance. However, in the light of the preceding comment this is not necessarily a counter-intuitive result. While insider coalitions may divert rents away from owners towards insiders, their more aggressive implementation of change and introduction of productivity-enhancing practices may also create bigger surpluses, *ceteris paribus*, from which to do so.

²⁵ The finding that the financial services industry is an unfriendly environment for insider coalitions in both countries is perhaps proof that the doctrine of shareholder value is practiced by those who preach its benefits!

Conclusions

This paper explores the question of the influence of organizational governance arrangements on organization-level patterns of labour demand. It does so as a means of testing whether such arrangements ultimately can affect pay inequality outcomes, and in particular whether this factor has contributed to the recent increase in top-tier pay inequality observed in Britain and France (see findings of preceding chapter). This concluding section of the chapter discusses these aims, summarizing the findings made and drawing connections with the conclusions of the preceding chapter, framing these findings in the context of wider debates, and outlining opportunities for further research.

As regards the subject of organizational governance arrangements, the paper operationalizes Aguilera and Jackson's (2003) structural framework for the classification of these arrangements, and cross-checks the derived variable (which distinguishes insider from class coalitions) against variables that capture aspects of organizational behaviour that are thought *a priori* to correlate with the presence of each type of controlling coalition. Examining the governance data produced by this method, it is found that Britain and France differ in the distribution of governance types. Thus, while the British private sector is dominated by organizations characterized by class coalitions, in France this type of controlling coalition is slightly in the minority. Organizations controlled by this type of coalition conform rather closely in their stakeholder interrelations to the picture presented in the neoclassical model of the firm: there is little conflict of interest between managers and owners, as they are in alliance, and non-managerial employees are largely treated as an input in production rather than as parties to some collective endeavour. The majority of firms in France, though, feature insider coalitions, in which workers and managers align to pursue their own interests rather than those of owners. As a consequence, therefore, we might expect the decision-making behaviour of this type of organization to differ from the predictions of the neoclassical model of the firm.

On the subject of the influence of organizational governance arrangements on the profile of labour demand, the paper tests three main hypotheses. The first of these regards the question of whether patterns of change in the profile of organizational labour demand can be explained by a simple SBTC story (i.e., hypothesis three above). This test is effected by modelling the

impact of previous organizational and technical change on labour demand outcomes. No evidence at all is found to support the hypothesis. This finding is consistent with the idea implicit in the organizational governance approach that technical change is not deterministically skill-biased, as its impact on labour demand and pay inequality is strongly influenced by the context in which it is implemented.

The other hypotheses tested by the model (i.e., hypotheses one and two above) relate to the influence of organizational governance arrangements on the organization-level profile of labour demand. These tests produce a complex set of results. Essentially, the British results tend to support the paper's contention that such arrangements do have an impact on labour demand outcomes – that is, that all else equal demand for managers is greater in cases of class coalitions, and that demand for non-managerial skills is greater in cases of insider coalitions. However, while the British evidence is broadly supportive of the hypotheses, it does not suggest a very strong connection between the two factors. In contrast, the results for France provide virtually no support for the hypotheses. Instead, they indicate that insider coalition and class coalition firms behave in largely similar ways in that country with regard to labour demand decisions. All the same, this finding is consistent with the observation that insider coalitions are in the majority in France, and therefore represent a kind of norm in the market. In Britain, however, where insider coalitions are a small minority (17%), it is likely that they stand out more clearly against the class coalition norm of that market.

From the conclusion that organizational governance issues have only a limited impact on the profile of organization-level labour demand, it follows that they have a similarly limited capacity to explain the recent trend towards rising top-tier pay inequality in the two countries. Indeed, in the case of France, it seems that organizational governance can explain little or none of this trend. In Britain, though, where it appears that the governance factor does exert some influence on labour demand outcomes, the evidence that the share of class coalitions has grown over time and that insider coalitions are relatively most scarce in high-inequality growth sectors of the economy is consistent with the idea that governance issues have contributed to growth of top-tier pay inequality. Even so, it seems that organizational governance issues are only a minor factor in the explanation either of this striking pay inequality trend in Britain, or of the differences in the form of the trend in Britain and France (which were noted in the preceding chapter).

Ultimately, therefore, the variable of organizational governance arrangements cannot contribute a great deal to the explanation of rising top-tier pay inequality. In this respect, it can be struck from the list of possible explanations of this phenomenon. This finding opens the door to other hypotheses, in particular – as noted in the conclusions to the preceding chapter – one that suggests that the rise in top-tier pay inequality observed in Britain and France is related to a complementarity between top technical and managerial skills and new technologies that occurs in particular production environments. The following chapter explores the viability of this hypothesis with reference to a single country case: Britain. It does so by a historical analysis of the role of managers in the process of production and their position in the labour market, especially as it relates to the question of relative pay. It is to this issue that the following chapter turns.

Appendix to Chapter 3

Tables

Table 1: Summary of survey samples

Data source	<i>Raw samples</i>		<i>Common samples</i>		
		Scope	N	Scope	N
Britain – WERS panel	1998	Establishments with 10 or more employees in sectors NACE D-O	904	Private-sector establishments with 20 or more employees in sectors NACE D-O	425
	2004				
France: REPOSE panel	1998	Establishments in the traded sector with 20 or more employees in sectors NACE C-O	962	Private-sector establishments with 20 or more employees in sectors NACE D-O	773
	2004				

Table 2: Correlation matrix underlying structural governance cluster analysis for Britain

	<i>Class coalition</i>	<i>Quality focus</i>	<i>PLC</i>	<i>Union density</i>	<i>Consult committee</i>	<i>High training intensity</i>	<i>Degree of info sharing</i>	<i>Turnover</i>	<i>Mgrl variable pay</i>
<i>Class coalition</i>	1.00								
<i>Quality focus</i>	-0.22*	1.00							
<i>PLC</i>	-0.22*	0.17*	1.00						
<i>Union density</i>	-0.90*	0.26*	0.27*	1.00					
<i>Consult committee</i>	-0.24*	0.17*	0.20*	0.28*	1.00				
<i>High training intensity</i>	-0.14*	0.11*	0.03	0.13*	0.15*	1.00			
<i>Degree of info sharing</i>	-0.24*	0.31*	0.17*	0.26*	0.28*	0.21*	1.00		
<i>Turnover</i>	0.33*	-0.05	-0.09	-0.36*	-0.10*	-0.05	-0.09	1.00	
<i>Mgrl variable pay</i>	-0.03	0.16*	0.13*	0.02	0.14	0.08	0.14*	0.00	1.00

Note: * denotes significance at 5% level at least

Note: N = 425

Note: WERS 98-04 panel data

Table 3: Correlation matrix underlying structural governance cluster analysis for France

	<i>Class coalition</i>	<i>Quality focus</i>	<i>PLC</i>	<i>Union density</i>	<i>Density repr. insts.</i>	<i>High training intensity</i>	<i>Degree of info sharing</i>	<i>Turnover</i>	<i>Mgrl variable pay</i>
<i>Class coalition</i>	1.00								
<i>Quality focus</i>	0.01	1.00							
<i>PLC</i>	-0.16*	0.03	1.00						
<i>Union density</i>	-0.20*	0.03	0.21*	1.00					
<i>Density repr. insts.</i>	-0.28*	0.01	0.29*	0.66*	1.00				
<i>High training intensity</i>	-0.28*	0.02	0.26*	0.20*	0.19*	1.00			
<i>Degree of info sharing</i>	-0.83*	-0.04	0.11*	0.06	0.09*	0.27*	1.00		
<i>Turnover</i>	0.07*	0.00	-0.13*	-0.27*	-0.26*	-0.15*	-0.01	1.00	
<i>Mgrl variable pay</i>	-0.13*	-0.03	0.22*	0.02	0.07*	0.19*	0.15*	-0.08*	1.00

Note: * denotes significance at 5% level at least

Note: N = 773

Note: REPOSE 98-04 panel data

Table 4: Mean/proportions of constituent variables by structural governance type for Britain

		<i>Class coalition</i>	<i>Insider coalition</i>	<i>Significance of difference</i>
Means	<i>Quality focus (1-5)</i>	3.1	3.6	*
	<i>Union density (%)</i>	4	59	***
	<i>Consult committee (%)</i>	40	91	**
	<i>High training intensity</i>	5.9	6.8	*
	<i>Degree of info sharing (1-5)</i>	1.7	2.3	***
	<i>Turnover (%)</i>	16	12	*
Proportions	<i>PLC</i>	0.39	0.64	**
	<i>Mgrl variable pay used</i>	0.22	0.24	Not significant

Note: ***/**/* denote significance at 1%/5%/10% levels respectively

Note: N = 425

Note: WERS 98-04 panel data

Table 5: Mean/proportions of constituent variables by structural governance type for France

		<i>Class coalition</i>	<i>Insider coalition</i>	<i>Significance of difference</i>
Means	<i>Quality focus (1-5)</i>	2.9	2.8	Not significant
	<i>Union density (%)</i>	5	10	***
	<i>Density of representative insts.</i>	1.5	2.2	***
	<i>High training intensity (1-5)</i>	2.5	3.1	***
	<i>Degree of info sharing</i>	3.8	9.9	***
	<i>Turnover (%)</i>	15	14	Not significant
Proportions	<i>PLC</i>	0.11	0.28	***
	<i>Mgrl variable pay</i>	0.01	0.04	**

Note: ***/**/* denote significance at 1%/5%/10% levels respectively

Note: N = 773

Note: REPOSE 98-04 panel data

Table 6: Correlation matrix for governance variables in Britain

	<i>Worker control over workplace change</i>	<i>Mgrs tend not to consult workers on decisions</i>	<i>Class coalition (cf. insider coalition)</i>
<i>Worker control over workplace change</i>	1.00		
<i>Mgrs tend not to consult workers on decisions</i>	-0.16*	1.00	
<i>Class coalition (cf. insider coalition)</i>	-0.20*	0.18	1.00

Note: * denotes significance at 1% level

Note: N = 425

Note: WERS 98-04 panel data

Table 7: Correlation matrix for governance variables in France

	<i>Worker control over workplace change</i>	<i>Mgrs tend not to consult workers on decisions</i>	<i>Class coalition (cf. insider coalition)</i>
<i>Worker control over workplace change</i>	1.00		
<i>Mgrs tend not to consult workers on decisions</i>	-	-	
<i>Class coalition (cf. insider coalition)</i>	-0.13*	-	1.00

Note: * denotes significance at 1% level

Note: N = 773

Note: REPOSE 98-04 panel data

Table 8: Establishment proportions by governance types

	Proportion	S.E.
<i>BRITAIN:</i>		
Worker control over workplace change	0.12	0.04
Mgrs tend not to consult workers on decisions	0.38	0.05
Class coalition (cf. insider coalition)	0.83	0.03
<i>FRANCE:</i>		
Worker control over workplace change	0.22	0.02
Class coalition (cf. insider coalition)	0.44	0.03

Note: N = 425 for Britain; N = 756 for France

Note: weighted WERS and REPOSE 98-04 panel data

Table 9: Summary statistics for workforce and wage bill shares

	Mean across establishments	S.E.	95% confidence interval	
<i>BRITAIN:</i>				
Δ log employment	0.038	0.067	-0.094	0.170
Δ log managerial workforce share	-0.093	0.087	-0.264	0.078
Δ log skilled workforce share	-0.018	0.094	-0.203	0.167
Δ log l.n.m. workforce share	-0.300	0.057	-0.412	-0.189
Δ log managerial wage bill share	-0.077	0.077	-0.228	0.074
Δ log skilled wage bill share	-0.030	0.084	-0.196	0.135
Δ log l.n.m. wage bill share	-0.271	0.042	-0.353	-0.189
<i>FRANCE:</i>				
Δ log employment	0.138	0.019	0.100	0.176
Δ log managerial workforce share	-0.188	0.044	-0.275	-0.101
Δ log skilled workforce share	0.221	0.036	0.150	0.293
Δ log l.n.m. workforce share	-0.299	0.037	-0.365	-0.233
Δ log managerial wage bill share	-0.163	0.032	-0.226	-0.100
Δ log skilled wage bill share	0.111	0.024	0.063	0.159
Δ log l.n.m. wage bill share	-0.007	0.019	-0.045	0.031

Note: N = 425 for Britain; N = 756 for France

Note: weighted WERS and REPOSE 98-04 panel data

Table 10: Change in wage bill shares in Britain

<i>OLS coefficients (standard errors)</i>	<i>Dependent variable – change in wage bill share of group</i>					
	Managers	Managers	High-skill workers	High-skill workers	L.N.M occ. group	L.N.M occ. group
<i>GROWTH ALONE:</i>						
Δ log headcount	-0.201** (0.082)		-0.114 (0.074)		0.025 (0.063)	
<i>ORGANIZATIONAL CHANGE:</i>						
Lagged organizational change	-0.167 (0.107)	-0.152 (0.100)	-0.213** (0.105)	-0.212** (0.101)	-0.090 (0.066)	-0.080 (0.066)
<i>GOVERNANCE:</i>						
Lagged worker control over most important workplace change	0.036 (0.123)	0.062 (0.121)	0.359** (0.164)	0.352** (0.168)	0.029 (0.105)	0.035 (0.101)
Managers tend not to consult workers on workplace decisions	0.209** (0.093)	0.196** (0.095)	0.145 (0.101)	0.140 (0.103)	0.007 (0.070)	0.008 (0.071)
Class coalition (cf. insider coalition)	-0.107 (0.131)	-0.165 (0.133)	-0.226* (0.119)	-0.250** (0.125)	0.022 (0.077)	0.004 (0.081)
<i>CONTROLS:</i>						
Simple controls	Yes		Yes		Yes	
Complex controls		Yes		Yes		Yes

Note: ***/**/* denote significance at 1%/5%/10% levels respectively

Note: N = 425

Note: weighted WERS 98-04 panel data

Table 11: Change in wage bill shares in France

<i>OLS coefficients (standard errors)</i>	<i>Dependent variable – change in wage bill share of group</i>					
	Managers	Managers	High-skill workers	High-skill workers	L.N.M occ. group	L.N.M occ. group
<i>GROWTH ALONE:</i>						
Δ log headcount	-0.078 (0.071)		0.029 (0.059)		0.034 (0.053)	
<i>ORGANIZATIONAL CHANGE:</i>						
Lagged organizational change	0.084 (0.063)	0.074 (0.061)	-0.017 (0.040)	-0.024 (0.041)	0.007 (0.037)	0.018 (0.035)
<i>GOVERNANCE:</i>						
Lagged worker control over most important workplace change	0.105 (0.069)	0.091 (0.068)	0.001 (0.044)	0.013 (0.044)	-0.023 (0.040)	-0.013 (0.040)
Class coalition (cf. insider coalition)	-0.020 (0.057)	-0.016 (0.057)	-0.046 (0.042)	-0.057 (0.042)	0.030 (0.035)	0.029 (0.036)
<i>GOVERNANCE: (restricted sample)</i>						
Lagged worker control over most important workplace change	0.147* (0.077)	0.117* (0.069)	0.082 (0.054)	0.084 (0.053)	-0.052 (0.056)	-0.023 (0.051)
Class coalition (cf. insider coalition)	-0.132* (0.057)	-0.109 (0.082)	-0.027 (0.051)	-0.017 (0.056)	0.019 (0.043)	0.028 (0.047)
<i>CONTROLS:</i>						
Simple controls	Yes		Yes		Yes	
Complex controls		Yes		Yes		Yes

Note: ***/**/* denote significance at 1%/5%/10% levels respectively

Note: N = 756 (344 for restricted sample)

Note: weighted REPOSE 98-04 panel data

Table 12: Evolution of governance types

	<i>Establishment proportions</i>		
	1990/2	1998	2004
<i>BRITAIN:</i>			
Worker control over workplace change	0.21	0.09	0.09
Mgrs tend not to consult workers on decisions	0.26	0.39	0.36
<i>FRANCE:</i>			
Worker control over workplace change	-	0.24	0.20
Worker control over workplace change (restricted sample)	-	0.37	0.27

Note: differences between years are all significant at 1% level except those for Britain, 1998-2004, both of which are insignificant

Note: weighted WERS 1990-2004 and REPOSE 1992-2004 cross-sectional data

Table 13: Governance types and economic variables in Britain and France

	<i>Worker control over workplace change</i>	<i>Mgrs tend not to consult workers on decisions</i>	<i>Class coalition (cf. insider coalition)</i>
<i>BRITAIN:</i>			
Structural characteristics	+ve association with education; -ve with financial services	+ve association with business services	-ve association with construction and organizational size
Incidence of workplace change	+ve association with change in degree of worker involvement and change in pay systems	No association	-ve association with change in working time arrangements, organizational change, and change in work practices
Financial performance	No association	No association	No association
<i>FRANCE:</i>			
Structural characteristics	-ve association with trade, financial services, and business services	-	-ve association with organizational size
Incidence of workplace change	+ve association with change in pay systems, change in working time arrangements, organizational change, and introduction of new products or services	-	-ve association with change in pay systems, organizational change, technological change, and introduction of new products or services
Financial performance	No association	-	No association

Note: significant associations (10% level or stronger) are derived from (ordered) logit regressions that control for organizational size, region of operation, and 1-digit industry

Note: WERS 98-04 and REPONSE 98-04 panel data

Chapter 4

Rising Demand for Managers and the Growth in Top-Tier Pay Inequality in Britain: the Role of Change in the Production Regime

Introduction

While Chapter two of this thesis floated two plausible lines of hypothesis in relation to the observed pattern of top-tier pay inequality growth in Britain, Chapter three concluded that one of these – the non-market explanation based on organizational governance factors – cannot account for much of the trend in question. As a consequence, this chapter considers the alternative plausible explanation, that is, a market-centred account that revolves around a refined version of the SBTC hypothesis.

As was noted in the conclusion to Chapter two, if we assume that the observed top pay bias in inequality growth has occurred in a more-or-less unfettered market context, it follows that it is likely that there has occurred a shift in relative labour demand towards the skills possessed by the incumbents of the jobs driving the change in the shape of the pay distribution.²⁶ A convincing explanation for such a shift in relative labour demand is provided by a refinement of the SBTC thesis, which argues that new ICT technologies and associated organizational changes have rendered the managerial and analytical skills possessed by this type of employee relatively much more valuable to employers, with the consequence that relative pay for this group has increased (Bresnahan 1999; Bresnahan,

²⁶ The inference of rising relative demand for managers is made because of the observation of simultaneous growth in the relative pay and employment share of this type of employee during a period in which – owing to rising levels of general educational achievement – it is unlikely that their potential supply was shrinking. For details of this inference, see Figure 1 in the appendix and its explanation in the next section of this chapter.

Brynjolfsson et al. 2002). The prediction of rising relative pay for managers – and for senior general and specialist managers in particular – is consistent with the British results reported in the second chapter of this thesis.

However, not all of the findings of Chapter two clearly support a hypothesis of this kind. Notably, it was found that the trend towards rising top-tier pay inequality is not universal – e.g., no evidence was found for a trend of this type in Germany. This discovery provides the key motivation for my investigation here, which aims to cast light on why the top-tier pay inequality impact of new technologies – which are widely diffused in the world – might be felt only in some countries and not in others. The first concern of the chapter, therefore, is to identify a theoretical framework that can generate a plausible answer to this question, i.e., of what mediating factor could produce an outcome in which the complementarity effect of new technologies with managerial skills occurs in one country but not in another. As its second point of focus, the chapter tests the explanatory ability of the mediating factor identified to explain the British experience since the 1970s of apparently rising relative demand for managers and concomitantly increasing top-tier pay inequality.

With regard to the first concern of the chapter, the explanatory framework adopted is that of the Aix Group (the ‘societal effects’ approach), which highlights the endogeneity (at the national level) of the form of managerial hierarchies with three factors: skills production systems, work organization, and industrial relations (Maurice, Sorge et al. 1980; Maurice, Sellier et al. 1982; Maurice, Sellier et al. 1984). Within this framework, the extent to which managers predominate over other groups of employees in these three dimensions is taken as a measure of their ‘centrality’ to production – and therefore of their relative worth to organizations. Managers are determined to be more central to the production model where there exists a systematic approach to managerial skills acquisition and development, where managerial decision making is substantially unfettered by industrial relations institutions, and where features of work organization point towards a prominent role for managers in production. As a consequence, I hypothesize that where managers are relatively central to production, the impact of ICT

complementarities with managerial skills will be felt much more strongly than where they are not. Moreover, I hypothesize that manager-led growth in top-tier pay inequality – as observed in the British results of Chapter two – is only possible where managers play a central or predominant role in the approach to production.

With this prediction in mind, I turn to the chapter's second concern and consider the development of the role and standing of managers within British organizations. I begin by looking at the historical literature in relation to the role of management in production in British organizations from the viewpoint of the societal effects framework. I find that the evidence suggests that – in relative terms – British managers were somewhat marginalized in the predominant approach(es) to production that prevailed prior to 1980. However, while the literature contains oblique evidence that this situation has changed in the years that have followed, there is no systematic study to confirm this fact.

Consequently, I engage in a set of analyses to explore whether managers have become more central to production in British organizations since the 1970s. My findings support the notion that they have done so, and provide support the above hypothesis that a manager-led rise in pay inequality – founded in technological change – is dependent on managers' taking of a central role in the organization of production.

The empirical strategy of the paper is founded on two bases. First, it aims to address the question of the distinctiveness of the British experience vis-à-vis changes in pay inequality and labour demand patterns by contextualizing them in the light of comparative (European) labour market data. Second, it probes the relationship between managerial centrality and demand for managers by engaging in a case study of change over time in these variables in a single country, i.e., Britain.

This twin-pronged approach is reflected in the structure of the empirical analyses, which comprise two main stages. The first of these starts from the findings of Chapter two to establish whether there has occurred a distinctive growth in relative demand for (senior general and specialist) managers in Britain since the 1970s. The second element, in turn, focuses on the centrality of managers to production in Britain, tracing the evolution of

variables relating to this concept in order to paint a picture of change. Ultimately, the chapter assesses the evidence on whether managers have become more central to the typical British production model over time, and on whether a shift of this kind is consistent with the hypothesis that the complementarity of managers (or the skills they possess) with new technologies is contingent on the nature of the production environment.

The chapter is organized in the following manner. It opens with a review of the relevant literature. This section is broken down into two elements. The first of these addresses the issue of the definition of managers in relation to other types of employee, and introduces the ‘societal effects’ framework as a means defining the concept of the ‘centrality’ of managers to production. The second element applies this framework to the examination of the historical literature on British management and its interaction with skills production, work organization, and industrial relations systems, seeking to establish the *status quo ante* of the decades prior to the emergence of a trend towards higher pay inequality, and searching for signs that this situation may have changed since the 1970s.

Following the literature review, a second section of the chapter lays out the empirical strategy underlying the analysis, including the application of the insights of the ‘societal effects’ framework to the data, the presentation of hypotheses and noting of how they are to be tested, and illustrating how these steps in the analysis contribute to the overall aim of the chapter. This section also discusses problems of measurement in relation to the concept of ‘managers’ and presents the case that this can in fact be accurately performed. A third section of the chapter describes the data sets used in the course of the analyses – which include NES, LFS, General Household Study (GHS), and WERS time series microdata.

In the chapter’s fourth section, I present the results of the empirical analyses and discuss their meaning in relation to the goals of the chapter. Broadly speaking, I find that the rise in relative demand for British managers inferred in Chapter two is a robust and comparatively distinctive finding; and that since 1980 or so British organizations have

tended to adopt new approaches to skills production, industrial relations, and work organization that have rendered managers more central to their production model. The final section of the chapter summarizes and reflects on the conclusions emerging from the analyses, assesses the chapter's success in relation to its aims, and sets out its contributions to the relevant research literatures.

Theoretical issues and literature review

Inferring a technology-led demand shift for managers

Chapter two argues that the longstanding British trend towards greater top-tier pay inequality is most plausibly due to a shift in patterns of relative labour demand. This inference is not based solely on the relative pay trend, however, as pay outcomes are produced at the intersection of both demand and supply rather than the one or the other in isolation. Instead, it is the simultaneous combination of rising relative pay and relative employment (i.e., employment share) of managers – and of senior general and specialist managers in particular – with a rapid expansion of the production of high-level general skills by the educational system, all documented in Chapter two, that indicates that the cause of change can be found on the demand side of the labour market.

Let us consider Figure 1, which presents a set of hypothetical demand and supply curves for the employee group composed of managers. This schematic assumes conventional upward-sloping supply curves and downward-sloping demand curves. Let us take our starting point to be at B, the intersection of supply curve S_1 and demand curve D_0 , where the managerial wage is W_0 and the number of managerial jobs is E_1 . We know from the results of Chapter two that the managerial wage has risen, as has managerial employment. Moreover, we know that the (relative) supply of potential managers in the labour market is likely to have risen owing to the increase in the relative number of individuals with advanced general education, i.e., individuals who possess the skills

necessary to take on managerial roles (and especially those towards the top of the hierarchy). Jointly taken, these findings suggest that it is unlikely that the rise in relative managerial wages has been caused by a move to a point such as A (marked by reductions in supply and employment). Instead, it is much more likely that the observed trends in relative wages and employment for managers has resulted in a move to a point such as C or D, both of which presuppose a rise in relative demand for managers.

As discussed in Chapter two of this thesis, a refinement of the standard SBTC hypothesis provides a highly plausible explanation for a technology-led demand shift in favour of managers in general, and in favour of senior managers in particular. The refined version of the hypothesis argues that new ICT technologies and associated organizational changes have rendered the managerial and analytical skills possessed by this type of employee relatively much more valuable to employers, with the consequence that relative pay for this group has increased (Bresnahan 1999; Bresnahan, Brynjolfsson et al. 2002).

The way in which this approach differs from the standard SBTC hypothesis – and therefore the way in which it predicts higher relative pay specifically for managers rather than for highly skilled employees in general – relates to the level of organization at which the complementarity between skills and technology is thought to occur. Thus, rather than perceiving the complementarity to operate at the level of the individual (i.e., a worker receives a new desktop PC, which improves his or her productivity – see Kruger (1993) for the classic example), this refined approach understands it as an organization-level phenomenon. According to this perspective, new technology's influence on relative labour demand flows not from the direct use of computers by this or that group of employees, but from the subtle ways in which the information gathering and processing capacities of a wired organization act as a multiplier on the performance impact of managerial and professional skills (especially analytical, interpersonal, creative, and leadership skills).

For example, Bresnahan (1999) notes that new ICT technologies enable organizations to build up large databases of financial transactions, customer data, employee performance,

etc., as an input to managerial decision making. Furthermore, the same technologies enable managers to analyse these databases quickly and cheaply to identify non-trivial ways in which organizational performance may be improved. Successful implementation of these improvements to the functioning of the organization requires managers to deploy effective leadership and interpersonal skills, both of which are further leveraged by the communication improvements afforded by the same bundle of new technologies. In these ways, the new technologies generate a significant complementarity with managerial roles and skills, which in turn leads the relative value of managers to the organization to grow and ultimately to be reflected in relative pay outcomes.

Moreover, it is argued that the performance multiplier effect of these new technologies is greater the more senior the position or individual in an organization (i.e., it is linked to its influence over outcomes for the organization as a whole), from which it follows that the relative pay impact of the new technologies will be rising in hierarchical seniority and thereby in pay. In a number of respects, therefore, this explanatory framework appears to predict the kind of rapid top-tier pay inequality growth identified in Britain in Chapter two, in which senior managerial jobs were found to be driving the trend of top-tier pay inequality growth. Indeed, a number of studies have already presented evidence in support of the top pay bias of new technologies in the US and, to a lesser extent, the UK (Bresnahan 1999; Caroli and Van Reenen 2001; Bresnahan, Brynjolfsson et al. 2002; Autor, Levy et al. 2003; Lemieux 2007). Rather than retread this territory, however, this chapter uses the findings of these studies to buttress the assumption that there has taken place a technological shift that has rendered managers potentially relatively more productive – and therefore relatively better remunerated – than other groups of employees. Instead, the chapter's analysis concentrates on the question of what kind of mediating factor could produce the outcome that the impact of this technological shift is felt in one country but not in another – apparently similar – one.

Defining managers and their centrality to production

Given this chapter's intention to trace the degree to which managers have been/are central to the typical approach to production among British firms, an initial challenge is that of defining what is meant by the labels 'managers' and 'centrality in production'. While it is not a straightforward task to define these concepts for the purpose of empirical analysis, an attempt is essayed here. This section of the chapter draws on the relevant literature in order to arrive at empirically useful definitions of these two concepts, and introduces the insights of the 'societal effects' approach to organizational analysis in order to identify a set of key variables that permit the measurement of managers' centrality in production. In doing so, this section provides the conceptual basis for the empirical analyses that follow.

In any given organization, managers are members of the wider group of employees, and making the distinction between managerial and non-managerial employees is not a self-evident process. Attempts to delineate the bounds of the managerial group typically draw on one (or both) of two logics: managers are different either because of what they do, or because of who they are (Grey 1999: p.563). By the first logic, managers differ from other types of employees because they perform a unique role or set of tasks within organizations. For instance, Lane (1989) enumerates these special functions as, policy formulation, work organization and coordination, and performance monitoring. Similarly, a standard textbook defines management's functions as planning, organizing, leading, and controlling (Robbins, Bergman et al. 2000). The second perspective emphasizes the special status and authority of the managerial group, as managers are not only employees, but also the proxy face of the employer. Thus, for example, Bournois and Livian (1997) argue that managers can only be separated from other employees – in particular, from technical experts, professionals, and supervisors – by their possession of the 'power of command' over other employees.

Managers, therefore, can initially be distinguished from non-managerial employees by their performance of certain specialized duties and the authority attaching to their

position in the organizational hierarchy. However, while they retain these qualities in common, not all managers are alike, as there is considerable variation within the managerial group as regards the balance of functional tasks performed and the degree of authority possessed. At the simplest level, we may discern three subgroups within the managerial category: 'first-line managers' or supervisors, 'middle managers', and 'top managers' (Dopson, Neumann et al. 1997; Robbins, Bergman et al. 2000). The chief functional dimension of difference among these subgroups concerns their relation to planning activities: as one ascends the managerial hierarchy, one spends progressively more time on planning or strategic issues (Dopson, Neumann et al. 1997: p.23). Similarly, movement in the same direction expands the scope of a manager's authority to command others, which spreads from team to department to business unit or whole organization.

This systematic variation in the functional and command responsibilities of the job means that each managerial subgroup lays emphasis on its own skill set. Katz (1974) proposes that managerial skills may be classified into three broad sets – technical, human (interpersonal), and conceptual – and that these skills are demanded in differing quantities at different levels of the management hierarchy. At the supervisor level, the emphasis lies with technical skills, as a primary responsibility of first-line managers is to find solutions to day-to-day operational problems that cannot be solved by his or her staff. Middle managers, by contrast, are required to exercise all three sets of skills relatively intensively, as they must not only overcome technical obstacles, but also knit together and coordinate the work of multiple work groups and be able to do so with a clear eye to their contribution to the organization's larger goals. At the top of the hierarchy, the overwhelming need is for the high-level conceptual skills that can see the broad canvas of the organization and plot its course in time and space.

Collectively, then, the dimensions of tasks, authority, and skills provide a useful means of defining managers in relation to non-managerial workers. Effectively, we might say that the managerial group in an organization is that set of workers which tends to conduct 'managerial' tasks, is accorded the highest degree of formal authority, and possesses the

greatest portion of the 'managerial' skills embedded in an organization. Indeed, this definition accords rather closely with the definition of managers in the International Standard Classification of Occupations (ISCO) framework, which distinguishes managers from other occupations by reference to their concentration on the performance of specialist managerial tasks and their possession of particular skills to that end. As a result, the empirical approach of this paper is to define managers by means of the ISCO and other similar systems of occupational classification.

The above definition of managers suggests that they contribute to the production process in an organization through three key channels. First, to some extent or other they provide a set of specialist skills (technical, human, and conceptual) that are necessary to the strategic and day-to-day functioning of the organization. Second, through their possession of authority within a command hierarchy they make decisions that permit an organization to continue to function in an ambiguous environment. Third, managers perform particular tasks related to leadership and the coordination and integration of the work of others. However, while managers in all contexts can be recognized by the fact that they tend to contribute these inputs to production to a greater extent than the other employee groups alongside which they work, there is a great deal of heterogeneity within the set of 'managers' as regards the extent to which these inputs are management's preserve.

Indeed, apart perhaps from the question of planning, the duties performed by managers within an organization are not axiomatically the preserve of managers – members of other employee groups may organize work, lead others, or monitor and control activity. Further, the skills exercised in the process of carrying out such functions – technical, human, and conceptual – may similarly be possessed to significant degrees by non-managerial employees. Similarly, managers may possess authority to a greater or lesser extent, but this owner-derived authority is not absolute, and must coexist with other expressions of power such as the law or the stipulations of a collective contract. As a consequence, while it is generally possible to distinguish between managers and non-managers in a given context, there is no single dividing line between these groups which

is valid irrespective of context. Rather, the distinction between managers and non-managerial workers will vary from one situation to another (be they different countries, industries, etc.).

These observations have significant implications for the concept of managers' centrality to the process of production. Essentially, the notion of 'centrality' is meant to convey the extent to which a particular group of workers (e.g., managers) is essential to the process of production – that is, the extent to which production cannot proceed in the absence of the group's input. The preceding list suggests that managers are most essential to production where they monopolize specialist managerial skills, where they possess the right to make decisions on the part of the organization to the exclusion of other stakeholders, and where the coordination and integration of work in the organization is largely effected through managers' performance of their particular tasks. Conversely, managers would appear to be least essential to production where managerial skills are possessed collectively by and spread among multiple groups of workers, where their rights of decision are shared with other stakeholders (e.g., external owners, unions, or other groups of employees), and where the work of the organization can be effectively coordinated and integrated without significant managerial task input.

To illustrate these types of variation, let us consider two organizations with different approaches to work organization: an organization that arranges its operations through self-directed work teams; and another – perhaps even competing in the same markets – that coordinates and integrates collective activity through intensive managerial direction. Typically, the first kind of organization will assign a significant portion of organizing, leading, and controlling responsibilities to line workers, with the outcome that the employees constituting such teams will need to possess the requisite sets of technical, human, and conceptual skills. As a consequence, managerial skills and decision making rights are widely spread beyond the boundaries of the group of managerial employees, and the coordination of work takes place with a relatively low level of managerial task input. In the second organization, though, managers tend to monopolize managerial skills and decision making rights, and the coordination of work is effected through

managers' direction of other workers. Given the greater demands placed on the managerial group in the second type of organization, it is likely that managers will constitute a larger share of the workforce there. In summary, the contrasts between these two types of organization indicated that the structure and activities of the managerial group – and, thereby, the degree to which it is central to the production process – in a given organization are intricately linked to features of the broader organizational environment.

That there is considerable variation across contexts – e.g., across countries, across time, etc. – vis-à-vis features of the organizational environment is expressed clearly in the body of work on 'societal effects' upon work organization (Maurice, Sorge et al. 1980; Maurice, Sellier et al. 1982; Maurice, Sellier et al. 1984). Arguing against the position that organizational structures are largely and deterministically the product of the features of size, economic activity, and the technology employed, these authors instead point to evidence that such structures vary greatly across similar countries even after controlling for size, activity, and technology. By an inductive method, it is shown that three dimensions of organizational structure covary from one country to the next: the 'configuration of the organization', or the form of its occupational hierarchy; 'work structuring and coordination', or the distribution of tasks among jobs and the concomitant linking of jobs into coherent work groups; and the 'qualification and career system', or the means of initially acquiring and then developing relevant skills (Maurice, Sorge et al. 1980: p.65). These dimensions speak in turn to the factors that underpin the concept of prominence. Regarding managers, the third dimension draws attention to the systems through which they and non-managerial workers acquire their respective sets of skills and qualifications before and after entering the labour market. The first two dimensions are concerned with the boundaries of the managerial group and the relative apportionment of (critical) functions or tasks between managerial and non-managerial workers.

In their study of the organization of manufacturing plants in France, West Germany, and Britain at the dawn of the 1980s, Maurice et al. (1980) arrive at a number of findings that illustrate differences along these dimensions. First, in relation to the occupational

hierarchy, they note that while France has a large number of managerial, supervisory, and technical staff in relation to the body of line workers, Germany has a much lower number and Britain lies somewhere in between. Second, complex, technical tasks are often performed by German (teams of) line workers on an autonomous basis, whereas in France and Britain they are typically the preserve of managers or technical experts. The key difference between France and Britain in this regard is that French technical experts tend to be well integrated into lines of organizational hierarchy, while their British counterparts stand somewhat separately from the machinery of managerial decision making. Third, Germany is found to possess a high skill floor and a relatively narrow dispersion of skills based on the broad strength of the craft skills system. In France, too, skills and competence are relatively formalized, but through a combination of general education outside the labour market and training within the organization. This approach produces a stratified skill distribution in the workplace, with entrance to a given stratum regulated by prior achievement in the general educational system, and with little of the German possibility of progression from one skill group to another in the course of a career, especially across the important threshold separating line from technical or managerial workers. The British system is much less formalized than either of the others, being composed of a mish-mash of general-education, craft, and intra-organizational skills channels.

Summarizing these findings, German organizations are characterized by a relatively even spread of skills and competence, and authority/autonomy throughout the organization. Of the three groups of 'managerial' skills, only the strategic, conceptual variety are truly monopolized by the management group, with the technical and interpersonal/organizational types being possessed to some degree or other by non-managers. French organizations form a neat contrast with this picture, as they are marked by high degree of internal inequality of skills and competence, with post-hire training patterns reinforcing the sorting effect of the general education system, and authority is concentrated in the hands of management. All so-called managerial skills are therefore possessed by managerial employees (cadres), which is a relatively large group that effectively integrates the three skill sets in a single hierarchy.

The British case resembles both France and Germany in different respects – most notably, Germany for its decentralization of authority/autonomy, France for the relatively high degree of internal inequality of skills and competence (although this feature is not as pronounced as in France). The set of managerial skills is as a consequence distributed among several occupational groups within the organization. The distribution of autonomy is endogenous with the distribution of technical skills, which are heavily invested in non-managerial specialists and, to some degree, skilled line workers. Unable to internalize technical skills in their ranks (as in France) or to delegate non-strategic responsibilities (as in Germany), and to some extent hampered by their unsystematic preparation, British managers are constrained also to share interpersonal/organizational and, to a lesser extent, strategic/conceptual skills and competence with other occupational groups.

Regarding the relative centrality of each country's managers in the production process, the above observations suggest that a ranking is possible. Most prominent are French managers, who effectively monopolize 'managerial' skills, and who, through this possession of key skills and their concentration of formal authority, control decision making and the ability of the organization to coordinate its activities. In this respect, it would be very difficult for production to proceed without the input of managers. The next most central group of managers is comprised of those of Germany, although it is a much more limited group than its French equivalent – partly because of the smaller managerial hierarchy common in German organizations, and partly because it is perhaps only senior, strategic managers who carry particular prominence in the German case. Moreover, this is a more limited degree of centrality than that of the French managers, as the 'managerial' skills and coordination capacity necessary to the day-to-day functioning of the organization are not (at all) the monopoly of managers; only in strategic decisions and tasks are German managers particularly central. Finally, perhaps the least central group of managers is the British one: many 'managerial' skills are spread widely beyond the boundaries of the management group, and the relatively low capacity of managerial

hierarchies to integrate either strategic or day-to-day activities means that production is not totally reliant on managerial input.

This sketch of inter-country differences indicates that there is considerable variation across contexts in the scale of managerial hierarchies and in their centrality to production. Thus, while all managers share the quality of hierarchical authority, the performance of specialized organizational functions, and certain skills, the exact combination of these features observed in a given context appears to be closely linked to other underlying factors. What, then, are the key factors or contextual characteristics that matter for the definition of management and its centrality in production? Here, again, we might turn to Maurice et al., who, in a refinement of the international comparison discussed above (1984), present what they call a 'societal approach' to the parsing of variation in managerial form and activity. This theoretical framework points to three 'macro-social' elements – or key contextual factors – that interact with and influence intra-organizational (that is, managerial) outcomes: educational and training systems, organizational systems (vertical and horizontal), and industrial relations systems.

In defining the prominence of managers in production, therefore, this framework suggests that we should grant attention to variables corresponding to these three factors. First, skill production system functions differently in different contexts such that 'managerial' skills are distributed differently among managers and other occupational groups. Second, the division of labour and forms of work organization vary across contexts in ways that ensure that organizational integration and coordination – or the ways in which an organization is directed in the day-to-day and strategic aspects of production – is equally variable. Third, the form of the industrial relations system in a given context helps to delineate the boundaries of the managerial group and circumscribes the scope of its authority.

Broadly speaking, measured against this schema, managers are (more) central to the production model where there exists a systematic approach to managerial skills acquisition and development, where managerial decision making is substantially

unfettered by industrial relations institutions, and where features of work organization point towards a prominent role for managers in the coordination of production. The following section draws on these insights to interpret the historical literature on the 'traditional' postwar British approach to production, with a particular focus on its view of the role of managers within this model, i.e., looking for signs of change in the relative degree of centrality of managers in British organizations.

The historical development of British management and its interaction with systems of skills production, work organization, and industrial relations

The insights of the 'societal effects' approach provide a useful framework – built from the variables of skills production, work organization, and industrial relations – for tracking change in the centrality to production of British management over time. Certainly, there is reason to believe that, during the last twenty to thirty years, change has occurred in Britain along these dimensions. For instance, on the one hand, the picture of British manufacturing organizations at the turn of the 1980s – and the role of managers within it – presented by Maurice et al. (1980) appears representative of its time and place, being corroborated by other studies (e.g., Hannah 1980; Akrill 1988). On the other hand, though, recent assessment of British employment relations and managerial practice (Gallie, Felstead et al. 2004; Howell 2005; Pendleton and Gospel 2005; Kersley, Alpin et al. 2006) and the findings of Chapter two of this thesis regarding managerial employment share and relative pay trends paint a somewhat different portrait of organizational norms. Given the emergent picture of a more professionalized, more directive, and less externally constrained approach to management in Britain, it seems possible – even likely – that substantial change has occurred in matters relating to managers and their centrality in production – that is, in the key factors of skills production systems, work organization, and industrial relations. As a foundation for the remainder of the chapter, I now discuss the historical development of these factors prior to 1980 in order better to understand the starting point for my subsequent empirical analysis of more recent change.

As a backdrop to discussion of the state of British management in the later postwar period, it is helpful to understand the broad sweep of the development of the British economy prior to this time. In his analysis of the development of British industrial relations in the long run, Howell (2005) offers a résumé of the evolution of dominant approaches to production in Britain in the 20th century and beyond. His approach is to examine the subject material using a 'régulationist' lens, through which he identifies three successive, qualitatively different 'production regimes': pre-Fordist, Fordist, and post-Fordist. In Howell's view, the first of these regimes existed between the late-Victorian period and the outbreak of the Second World War. He characterizes it through the key features of a concentration of employment in the private manufacturing sector, fragmented ownership structures within this sector, a labour-intensive approach to production that invited fierce wage cost competition, and an industrial relations system orientated towards damping such cost competition and thus stifling labour unrest through encompassing industry collective bargaining.

Labour management under this production regime took the form of an approach to craft production which was characterized by a reliance on skilled, autonomous, and mobile workers to enable a type of highly cost-conscious flexible specialization (Tolliday and Zeitlin 1991). As a consequence of this approach, firms tended not to develop bureaucratic managerial hierarchies, and rarely attempted to remove skills from the shop floor by the introduction of new production technology and/or the separation of conception and execution. Equally, rather than systematically acquiring graduate labour and developing it within the managerial cadre of the enterprise – as was seen in the same period, say, among large corporations in the US (Chandler 1977) – British firms tended to obtain key skills through the apprenticeship system or through training on the job.

It is claimed that much of this approach can be explained with reference to four principal factors (Tolliday and Zeitlin 1991). First, British firms typically faced domestic and overseas – often imperial – product markets that were highly differentiated and unstable, and thus not amenable to strategies built around economies of scale. Second, the British skills base comprised a limited supply of university graduates, but a plentiful supply of

relatively cheap skilled (craft) labour. Third, the industrial relations environment was *sui generis*, with strong craft unions constraining managerial prerogative in the organization of production, although it can be argued that the unions' policies assisted managers by reducing uncertainty about skill quality and consistency. Fourth, they argue that family ownership limited the capital base of firms, with the result that they tended towards small-scale and specialized production, and so provided little opportunity for internalization strategies in relation to issues such as skill formation, the provision of career incentives, and so on, restricting the development in much of the economy of distinct and large-scale managerial functions of the kind that emerged in the US in this period.

In Howell's estimation (2005), the pre-Fordist regime did not survive the economic upheaval of the Second World War. Instead, it was supplanted by a different regime – estimated to run from approximately 1940 until the end of the 1970s – that was qualitatively different from that preceding it in a number of respects. First, manufacturing now took place under conditions of more concentrated ownership and greater capital intensity, with the result that productivity replaced costs as the primary driver of competitiveness. Second, the accelerating rate of international market integration – especially within Europe – weakened the utility of wage competition-damping industry bargaining. And third, workers and unions gained a durably stronger bargaining position through the greater state support implicit in policies such as the commitment to full employment and the influence or threat of Labour governments. An outcome of these shifts was the trend towards the 'internalization' of industrial relations from the industry to the firm, with managers and owners tending no longer to treat workers as an input to production like any other, but attempting to engage them and their unions directly in processes of (productivity-enhancing) economic restructuring.

It has been argued that a key factor driving the transition to the Fordist production regime was the growing tendency for firms to make the strategic choice to emulate the perceivedly superior American example of mass production and bureaucratic management (Tolliday and Zeitlin 1991). From this perspective, the shift in the typical

scale of production brought a limited growth of managerial structures, direct managerial control over production, and policies aimed at internalizing key production skills in managerial ranks – as had been observed in the interwar US (Jacoby 1985; Jacoby 1991). However, there is evidence that imported US practice was often implemented in ways that retained longstanding features of the British model. For instance, firms often made no clear distinction made between strategic and operational management functions (Tolliday and Zeitlin 1991).

Despite the many changes taking place after 1945, it appears that there remained strong elements of continuity between the pre- and postwar models of work organization and management. In particular, Zeitlin (1991) views the ongoing strife caused by inter-firm competition for skilled labour in the postwar as proof that firms did not rationalize production and take control over key skills in the American manner – i.e., absorb them into ‘management’, or embed them in capital equipment or processes – when they had the chance. According to this argument, this chance had come during the interwar slump that enabled management briefly to force the unions to recognize management prerogative. However, as employers never institutionalized this recognition, they ensured that managerial control would be challenged again once economic and political conditions changed, as they did from the 1930s rearmament period onwards. Consequently, management across much of the economy remained – well into the postwar – heavily reliant on the discretion and skills of non-managerial skilled workers and their unions in order to be able to compete in the market.

The heartland of this model of management and organization was to be found in manufacturing industry. It should be remembered that this sector carried enormous weight in the economy until relatively recently. Indeed, in the early-1960s, it accounted for approximately half of employment, and more than a third even a decade later (Coates 2002; Rowthorn and Coutts 2004). Further, manufacturing was not only important for issues of management because of its large share of British economic activity, but also because it, and the metalworking industries in particular, constituted the arena in which a pattern-setting framework of relationships connecting skills, occupations, and hierarchies

had been established in the years around the Second Industrial Revolution (Thelen 2004). Thus, arrangements relating to skills, organization, and industrial relations that arose in the manufacturing sector exerted substantial influence on developments in other areas of the economy.

During the period spanned by Howell's Fordist production regime, British managers themselves appeared quite distinctive in comparative perspective. Crockett and Elias (1984) explore data drawn from 1975-76 National Training Survey to arrive at a number of conclusions in relation to the preparation, careers, and earnings of British managers at the tail end of Howell's Fordist period. First, managers in mid-1970s Britain typically had low levels of education and training in comparison with their counterparts in other industrialized countries. In fact, the data show that British managers were as a group only marginally better qualified than the general population. Second, the authors find that managers' low level of formal qualifications was rarely compensated for by systematic managerial development within firms. Instead, they mostly entered management from another, non-managerial occupation, and only infrequently did so directly from education. Furthermore, the management occupation appeared relatively unstable in that individuals regularly moved in and out of it over time – in contrast to, say, professional or technical occupations – which must further have militated against attempts at management development. Third, the data indicate no significant connection between managerial vocational training and reward, which finding further suggests that firms placed little value on developing the capacity of the organization's managerial hierarchy as a whole. All of these findings suggest that British management during this period contrasted markedly with the ideal-type managerial cadre of the (US) 'modern business enterprise' (Chandler 1977; Jacoby 1985; Jacoby 1991).

Analysing this picture of typical production practice and management's role in it in the later postwar period, it is helpful to reintroduce the 'societal effects' approach's key dimensions of industrial relations, work organization, and skills production (Maurice, Sellier et al. 1984). As regards work organization, it seems that the prevalence of niche markets and 'lumpy' demand steered the majority of firms in the dominant sector of the

economy to compete by means of strategies that owed at least as much to craft production or 'flexible specialization' as to Fordist mass production. Embedded in traditions reaching back into the previous century, the former strategic type appeared even to deflect conscious attempts to realize the latter. In the matter of industrial relations, these apparently remained largely collectivized, with powerful craft and occupational unions in particular constraining management prerogative, even with regard to long-term and strategic decision making. As for the skills critical to production, while the balance of their production was slowly shifting away from the skill communities defined by apprenticeships and unions towards the general education system and intra-organizational learning under the aegis of the managerial hierarchy, firms often remained hugely reliant on traditional craft skills, with the result that craft workers were able substantially to defend their traditional partial autonomy vis-à-vis the management hierarchy. Work organization commonly reflected this fact, with large numbers of technical specialists and skilled workers sitting outside the direct line of managerial hierarchy, and consequently working under conditions of limited monitoring and substantial autonomy.

Ultimately, the picture of the 'typical' organizational form of the day that emerges is one in which managerial prerogative is heavily circumscribed, critical skills and their (re-)production are not internalized to the organizational hierarchy, and the dominant form of work coordination and integration relies more on workers' discretion and self-organization than on managerial capacity to organize, direct, and monitor production. Judged against the definition of 'centrality' in terms of key 'societal effects' criteria, this summary indicates that management was not particularly central to the production process in the typical British organization in the pre-1980 period.

As is well known, the 1980s and 1990s witnessed radical changes in the British political economy. Indeed, Howell (2005) interprets these changes as marking the transition to a new production regime – 'post-Fordist' – in which we still find ourselves. According to this argument, a capital-intensive rump of manufacturing activity remains in the new regime, but the rapid and massive tertiarization of the economy has effected a reversion to the old norm of labour intensive production, although now concentrated in services

rather than industry. Domestic government policy and ongoing European integration have increased levels of product market competition even further in both tradables and non-tradables (Card and Freeman 2002). At the same time, in the aftermath of the Thatcher and Major governments' attempts to reduce trade union influence, collectively bargained regulation of employment has become much less widespread, especially in the private sector, and tends increasingly to bring fewer advantages to workers still covered by it (Bryson 2002; Blanchflower and Bryson 2004; Visser 2005). It may be contended, therefore, that the dominant form of industrial relations in contemporary Britain is one in which employers possess much greater freedom, or flexibility, unilaterally to set the terms and conditions of employment than in even the recent past. The primary constraints on this flexibility are now more commonly constituted by a limited set of state-guaranteed rights for the individual worker, than by systems of negotiated employment regulation. In the area of skills production, this period has seen huge growth in the higher education sector (Chevalier, Conlon et al. 2002), a mild improvement in standards of attainment in intermediate general education (Machin and Vignoles 2006), and the demise of the traditional apprenticeship system for imparting craft skills along with the (manufacturing) industries in which it was embedded (Finegold and Soskice 1988).

All of these shifts point to change along the dimensions of (managerial) skills production, industrial relations, and work organization. Moreover, the trends noted in Chapter two of this thesis that indicate a rapid and ongoing rise in employers' demand for managerial skills since the end of the 1970s imply that the formerly somewhat embattled and secondary status of managers in British organizations may not have survived much beyond the end of that decade. These inferences, then, suggest that managers have perhaps become increasingly central to the typical production model of British firms. The following empirical study is intended to test this idea, using the framework of the 'societal effects' approach to structure the analysis of the data. It is to this matter that the chapter proceeds, as it now presents the empirical strategy, the data sets, and the results of the analysis in turn.

Empirical strategy and research questions

The primary hypothesis of this study is that an apparently rapidly rising demand for managers – and senior managers in particular – in Britain since the 1970s is linked to a shift in the typical approach to production (and management’s place in it) – defined in terms of the ‘societal effects’ variables of skills production, industrial relations systems, and work organization – adopted by British firms. Consequently, the analyses conducted as part of this chapter can be broken down into two main elements. The first of these is intended to explore the question of relative demand for managers in Britain in the last two decades or so, building on the findings of the second chapter of this thesis, in order to establish whether there has occurred a distinctive growth in such demand. The second element of the analysis focuses on the centrality of managers to production, tracing the evolution of variables relating to this concept over the period in question. Each element addresses a set of key questions – set out below – that underpin the primary hypothesis of the chapter. Once I have set out these questions and delineated their role in the overall structure of the paper, I turn to consider issues of operationalization. In particular, I address the potential problems raised by attempting to identify ‘managers’ in quantitative data in a manner that is consistent across time. In doing so, I find that the means of definition of managers within the standard systems of occupational classification is highly robust, and can be relied upon to produce time-consistent data series in relation to the occupational composition of the workforce.

In the first element of the empirical enquiry, I begin by recapping my previous findings regarding the development of relative demand for managers in Britain, as reported in Chapter two. I then expand upon this basis of knowledge by addressing two key questions:

Question 1 – how does the change in the dimensions of the occupational group of British managers appear in a comparative perspective?

Question 2 – to what extent is change in the managerial share of the British workforce a function of macro-level industrial restructuring?

My response to the first of these questions situates the British results within the broader comparative context of developments elsewhere in Europe, its intention being to gauge the extent to which Britain is or is not representative of the broader European experience, and by doing so, to understand whether the scale of change in Britain is significant or not. In addressing the second question, I supplement the comparative perspective of my response to the first with a longitudinal analysis relating change in the managerial share of the British workforce to the variables of industrial activity and organizational size. This exercise is motivated by the possibility that – given the rapid pace of industrial restructuring in Britain since the 1970s – change in the size of the managerial share of the workforce might be related to general shifts in employment from one form of economic activity to another. By testing this proposition, I intend to determine whether apparent change in demand for managers is the product of broad macro-level trends in the economy, or whether it might be linked to micro-level change such as the adoption by firms of new production models.

The second element of my study focuses on change in the centrality of managers to the production model, and is structured around measurement of the key ‘societal effects’ variables of skills production, industrial relations systems, and work organization that underlie this concept. My intention is to understand to what extent there now exists a systematic approach to managerial skills production, relatively unfettered managerial

decision making, and features of work organization which point towards a prominent role for managers in production. The questions I address relate in turn to each of these variables:

Question 3 – have the means of skills acquisition of British managers changed over time?

Question 4 – in what ways have industrial relations changed within British firms?

Question 5 – in what ways has work organization changed within British firms?

My response to Question 3 examines change over time in the qualifications and skills development of British managers, and conducts its analyses with reference to a complementary set of individual-level employment data sets. In addition, it is able to draw on Crockett and Elias's (1984) sketch of the characteristics of British managers in the mid-1970s as an useful point of reference for its analysis of change. In assessing Question 4, I use longitudinal organization-level data on a number of aspects of industrial relations arrangements in order to trace how these have changed within British firms, and to understand the implications of any change for processes of managerial decision making within organizations. Consideration of Question 5 also draws on longitudinal organization-level data, and examines developments in the area of work organization that relate to the occupational composition of workforces at the level of the productive unit (establishment), processes of communication within organizations, and relationship between the managerial share of the establishment workforce and a number of key establishment characteristics.

Regarding the operationalization of these analyses in the context of quantitative, large-scale survey data sources, the investigation confronts potential measurement difficulties with regard to the central concept of the 'manager'. As previously noted, this is a difficult concept to define, particularly in the cases of longitudinal or comparative analyses (Vernon 2003). In particular, there is more than one interpretation to the statistical finding that the occupational employment share of managers is rising over time

in a given country or location. Certainly, one possibility is the straightforward one that managers are becoming more numerous, and that as a result organizational hierarchies are becoming more encompassing. Alternatively, however, it may be that the numbers reflect a trend towards 'title inflation', with the managerial share being bolstered merely by the relabelling of jobs with the suffix 'manager', e.g., 'train manager' for 'train conductor', without any accompanying substantive change in the job to incorporate managerial duties. As this type of measurement error could strongly undermine attempts to measure change in the managerial share of employment, it is necessary to consider the ability of the occupational classification systems used in the data to avoid this type of error.

A helpful introduction to the subject is provided by Elias and McKnight (2001), who, in a paper examining the adequacy of occupational classifications as a proxy for skill, offer a concise history and assessment of the UK's own recent Standard Occupational Classifications (SOC 1990 and 2000) and their relations to the international standard in this area, the International Standard Occupational Classification (ISCO-88, and the EU-specific variant, ISCO-88[COM]). They explain that all these systems of classification share the logic of ISCO-88, which classifies jobs into occupations according to two key conceptual dimensions: the task composition of work in the job; and the skill requirements for the competent performance of the job. The notion of skill requirements is defined initially by the relevant 'skill level', which derives from the length of study or training necessary to perform the job, and subsequently by the appropriate 'skill specialization', or field of knowledge underpinning the job. The classifications outline four levels of skill across all occupations, with subgroups within each occupation-skill level cell being further disaggregated by their different skill specializations.

Within this framework of classification, managers are identified principally by their concentration on the performance of 'managerial tasks', that is, the 'direction and coordination of the functioning of organisations and businesses, including internal departments and sections, often with the help of subordinate managers and supervisors' (p.43, Office of Population Censuses and Surveys 1990). This approach assumes that a

special class of skills is required for the competent performance of such tasks, and the baseline level of skill is defined in such a way that first-level supervisors and foremen are excluded from the managerial category, being instead coded with the occupations of those they oversee (or work alongside). Conceptually, therefore, these classifications only label as ‘managers’ those individuals whose work is largely composed of managerial tasks, and who demonstrate a level of skill in their performance that exceeds a not-insubstantial threshold.

In order fully to realize this type of occupational classification, surveys that include an occupational variable typically collect information on job titles, grades, and constituent tasks. Thus, for example, in the case of the Labour Force Survey (LFS) a trained interviewer will gather these data from the interviewee, or in the case of the New Earnings Survey (NES) the employer must give a brief written job description alongside the details of a job’s title and grade. The means of translating this information into the categories of the occupational classification is a coding index, which represents a kind of job dictionary mapping job titles, grades, and constituent tasks to particular occupational categories. These tools are designed in such a way as to screen for misleading job titles such as ‘train manager’ and ‘executive assistant’, and to ensure that they are assigned to the correct category (i.e., not management) (Office of Population Censuses and Surveys 1990; Office for National Statistics 2000). In this regard, they are consciously intended to protect the data collection process from the potential problem of title inflation.

Persuasive evidence that the design of occupational classifications succeeds in this intent is offered by Elias (1995), who points to two pieces of supporting data. First, examination of the job titles and descriptions collected as part of the 1981 and 1991 British censuses shows in both time periods that individuals who are identified as ‘managers’ according to the principal occupational classification used also overwhelmingly described their main job tasks to be of a managerial nature, i.e., they were largely concerned with the direction and coordination of others’ work. Second, with reference to the 1981 and 1991 LFS, Elias finds that in both years about three-quarters of those respondents classified as managers answered in the affirmative to a

separate question about the performance of managerial duties.²⁷ Elias concludes that, despite the greater managerial share of the labour force in the later period, respondents classified as managers in that year are no less likely to be engaged in managerial tasks than before. The weight of these items of evidence, therefore, indicates that the observed growth in the ranks of British management reflects genuine change in the occupational composition of employment rather than a trend towards title inflation.

All the same, Elias's data only apply to the 1980s, and occupational data series show that the British managerial share of employment has grown even further since then. Consequently, we cannot be certain that title inflation has not occurred in the post-1990 period unless we revisit the data. For this reason, I update Elias's analysis of the extent to which managerial status – as defined by an occupational classification – and the performance of managerial duties intersect, using LFS data for a number of years between 1981 and 2004. In my version, the occupational classification used is SOC 2000, which is more conservative in its attribution of managerial status to employees than the KOS classification used by Elias (Office for National Statistics 2000).²⁸ In addition, my data series relate to the population of all employees in each year, rather than the population of all workers to which Elias's analysis refers. Nevertheless, the results I obtain (see Table 1) are highly consistent with those of the earlier study in the years of overlap (1981 and 1991). Moreover, it consistently emerges over time that around 90% of those classed as managers according to the SOC 2000 schema report that they perform managerial duties or supervise others in their job. This finding suggests that the notion of 'title inflation' is no more supported by the evidence after 1991 than before. If anything, the results suggest that the occupational-classification perspective of the SOC system may understate the growth of the managerialiat, as there appears to be a durable rise of around ten percentage points in the share of non-managers (as defined by SOC 2000) who report that they perform managerial or supervisory functions in their job.

²⁷ The other quarter of the individuals classified as 'managers' were largely self-employed farmers and managers/proprietors of small businesses (often without employees) (p.7, Elias 1995).

²⁸ This is to say that, if a single data set were coded to both KOS and SOC 2000, a greater share of individuals would be classified as managers at the most basic level of occupational disaggregation under KOS than under SOC 2000.

There is little evidence, therefore, that processes of title inflation have been driving the observed long-term increase in the managerial share of employment in Britain.

Accordingly, this chapter takes the approach that the relevant systems of occupational classification – when applied to survey data – are capable of reliably identifying managerial workers, and thereby of tracking real trends in the occupational composition of employment. Having set out my empirical strategy and the key questions I wish to address through it, I now present the data used in the course of my analyses.

Data description

The data used in this chapter are drawn from a number of different sources. Broadly speaking, however, these sources are of two types: individual-level microdata which provide information on occupation, earnings, qualifications, industrial activity, and other characteristics of the individual and their job; and establishment-level microdata which describe the activity, size, internal organization, and policies of employing organizations. The data from both sources have the common attribute that they pertain to long time series, generally in the range from 1980 or before through to the early years of this decade. Regarding the two main elements of the empirical analysis, the part that relates to demand for managers draws on individual-level data alone, whereas the part that explores the issue of manager centrality in production draws jointly on individual-level and establishment-level data.

Of the individual-level data sets employed, the first is the New Earnings Survey (NES). This is an annual survey of the earnings of employees in employment in Great Britain, conducted every April from the late-1960s until 2001 (although the version of the data set used here runs from 1975 to 2001 inclusive). As it is extensively used and described Chapter two of this thesis, I will not go into detail again here. For the purposes of this chapter, perhaps its important feature is its large sample – which amounts to around 0.5% of total employment in Britain in any given year – as this ensures that the data are highly

representative of the broader population of employees. In addition, its data collection methodology – it is derived from employer records and employers are legally required to respond if they are surveyed – is recognized as providing information on occupation, earnings, and other variables that is relatively more accurate and less prone to response error than many other data sets that deal in these variables.

In order not to rely on any single source of British individual-level microdata, I supplement my use of the NES with analysis of the Labour Force Survey (LFS) and General Household Survey (GHS) series. I discuss the set-up of LFS data in detail in Chapter 2. My approach to setting up the GHS data closely resembles that used for LFS, as the surveys are in many respects rather similar. All the same, I draw extensively on the advice offered by Schmitt (1992) to ensure that the GHS variables relating to earnings and employee and employer characteristics are consistently defined throughout the length of the time series. As both LFS and GHS have a different survey methodology to that of the NES – both are based on direct interviews with individual workers rather than employer records – these data provide a valuable cross-check on the trends observed in the NES data, enabling me to assess the robustness of my results more effectively. While LFS and GHS sample sizes are smaller than that of the NES, both surveys offer nationally representative and longitudinally consistent data series – the LFS for the period 1993-2004, and the GHS for 1974-2004.

As part of my study of demand for managers compares British trends in the occupational composition of employment with those observed in comparator countries, I also refer to the French Enquête Emploi (EE) and the German Socio-Economic Panel (GSOEP), which, like LFS and GHS, use a household survey approach to provide representative annual cross-sections of each nation's employment for the period 1984-2002. (In the case of Germany, I limit the sample to the former West Germany in order to enable consistent measurement before and after unification.) As a further cross-check on the results I derive from national-level microdata, I compare them to Eurostat's official harmonized European Labour Force Survey (ELFS) tabular data, which can be accessed through the New Cronos portal on the Eurostat website.

When working with these individual-level microdata, I sometimes encounter the issue of intermittent changes in the form of the occupational classification. This is not a challenge that occurs with the EE and GSOEP data, as the relevant data-collecting institution has retrospectively recoded the data series to ISCO-88(COM) for the few years in which they were not originally coded using that system of classification. However, the British data series do pose this problem, as they classify occupation according to a number of different systems of occupational classification, with the identity of the one used largely depending on the year in which the data were collected. Thus I encounter the Key Occupations for Statistical Purposes (KOS) system prior to 1991, the Standard Occupational Classification 1990 (SOC 1990) in 1991-2000 (1991-2001 in the case of NES), and SOC 2000 in 2001 and beyond. Of these classificatory systems, only SOC 2000 can be straightforwardly translated into the ISCO-88(COM) schema.²⁹

In order to generate consistent time series of occupational data that use a single system of classification, therefore, I recode the occupational variable where necessary. Where the existing classification is SOC 1990, this operation is easily performed through a set of if/then conditions that translate the variable into SOC 2000 (for guidance on this process, see Elias and Purcell 2004). However, where the initial classification of occupation is reported in terms of KOS, it is necessary to recode the variable to SOC 2000 or ISCO-88(COM) by means of program called Mapper98 (Gregory, Jukes et al. 1998). This tool uses a mapping algorithm to convert data coded in one classification into another on the basis of a single cross section of dual-coded data, that is, a year of the given survey in which the data are coded simultaneously to the old and new classifications. The mapping procedure is performed with reference to the observed frequencies between old and new codes in this dual-coded data. Where an entire category on one classification is repeated in the other classification, this one-to-one mapping is applied directly. Where a fractional allocation is required, a random allocation procedure is used to achieve the proportions observed in the dual-coded data. The product of this procedure is a longitudinally

²⁹ In fact, one of the key reasons for the 2000 revision of SOC was to improve comparability with the European standard of ISCO-88(COM) (Elias and McKnight 2001).

consistent occupational classification that provides an accurate picture of changes in the distribution of occupations over time.

The establishment-level data set I employ is composed of a time series of Workplace Employment Relations Survey (WERS) management respondent data for the period 1980-2004.³⁰ The WERS (WIRS) surveys were originally conducted as cross sections in each of the years 1980, 1984, 1990, 1998, and 2004, with each wave providing a snapshot of a rich variety of employer characteristics, policies, and practices through a nationally representative sample of establishments that clear a given employment-size threshold. Following the 1998 survey, the WERS98 Data Dissemination Service constructed and made available a time-series data set composed of a set of variables that remain invariant from one survey wave to another. This data set enables the evolution of these variables to be accurately measured between one wave and another. It should be noted that there is no panel aspect to the data set, as no establishment appears in more than one wave. However, the representative nature of each cross section permits the accurate assessment of change in the distribution of a given variable over time. For the purposes of my analyses, I have matched data drawn from the newly available 2004 wave of the survey to this existing time-series data set, having defined the sample and relevant variables in a consistent manner. The consistent sample is representative in each period of the population of all British establishments with 25 or more employees.

As a further modification of the 'official' WERS time-series data set, I have matched in information on the establishment-level occupational distribution of employment for each of the five waves of data. This information was drawn from the original cross sections for each wave, which contain a broader range of variables than their time-series counterpart. This variable is used to calculate the managerial share of employment at the establishment level. There is an issue in that the classification employed changes form between the 1990 and 1998 waves – from one based on the logic of KOS to one based on the one-digit version of SOC 1990/2000. At first glance, this transition would seem to

³⁰ In their stand-alone versions for the years 1980, 1984, and 1990, these data sources are entitled 'Workplace Industrial Relations Survey' (WIRS).

militate against the comparison of managerial workforce shares in the before and after periods. Certainly, the different logics of the two classification systems would suggest so, and, there not being a dual-coded year as per the GHS or NES, it is not possible to solve this problem by use of the mapping software.

However, closer inspection of the definitions of the occupational groups in the two classifications indicates that there is considerable comparability between them. This outcome obtains chiefly because the occupations are defined in both frameworks at the one-digit (i.e., a relatively aggregated) level, and so the definition provided to survey respondents for the purpose of coding their response is similarly crude in both cases. Thus, the 'middle/senior managers' category of the first system is very similar to the 'managers and senior administrative occupations' category of the second.³¹ Importantly, both definitions explicitly exclude foremen and first-level supervisors from these categories. Thus, while there may be measurement error in the management share variable under both classifications – owing to the high-level nature of the definitions – this error is not likely to be systematically biased across the divide between them. As a result, I believe it is possible meaningfully to interpret the evolution of this variable over the duration covered by the data.

Having introduced the data I employ, and discussed the means by which I have operationalized key variables, I now move on to the presentation of the results of my analyses.

³¹ Compare the respective definitions provided on the 1990 and 1998 management questionnaires:
- 1990: Separate categories are provided for 'supervisors/foremen' and 'middle/senior managers'; and 'administrative staff should only be included with clerical/secretarial staff when they have no supervisory or managerial responsibility'.
- 1998: 'Managers and senior administrators head government, industrial, commercial and other establishments, organisations or departments within such organisations. They determine policy, direct and co-ordinate functions, often through a hierarchy of subordinate managers and supervisors. Occupations included are: general managers, works managers, production managers, marketing or sales managers, directors of nursing, catering managers and bank managers. This group does not include supervisors or foremen. These employees should be grouped within their skill base e.g. an office manager supervising clerical workers would be grouped with them. A fitter and turner acting as a supervisor or foreman would be classified as a craft or skilled worker.'

Results

The structure of this section of the chapter is organized around the two stages of empirical enquiry outlined above. Initially, therefore, I seek to establish whether there has taken place any distinctive growth in demand for managers in Britain in the years since 1980. This analysis begins from the findings of Chapter two regarding this subject, and then looks for corroborating evidence in a number of comparative data sources. In addition, I present results that clarify the precise form of the trend (i.e., for which types of managers is demand rising). Having confirmed the robustness of the evidence for rising demand for managers in Britain, I probe the relationship between this trend and macro-level change over time in the form of economic activity (e.g., the industrial make-up of employment, the distribution of organizations by size, etc.). This step in the analysis is intended to test whether the pattern of demand growth is merely the side effect of change in the composition of economic activity (i.e., processes such as tertiarization), or whether there is evidence that it is more strongly associated with change within organizations.

As it emerges that the evidence tends to support the latter proposition, I proceed to the second element of the empirical study, which is concerned specifically with change in the role of managers in production. The three components that make up this part of the analysis are structured around the three key variables identified by the 'societal effects' approach: (managerial) skills production; industrial relations systems; and work organization. In each of these areas, I look for evidence of change that would indicate that managers have become more central to the process of production in the typical British organization over the last two decades or so. In the first case, this involves the examination of change in managers' observable skills (qualification and experience), and in the returns that they generate. In addition, I look at change in the distribution of channels of entry into management. The motive for these analyses is to understand which kinds of skills managers own and are rewarded for in different time periods, and the extent to which managerial skills are monopolized by managers or shared with other occupational groups within organizations. In the case of industrial relations systems, I examine change in institutional features that enable non-managerial input into

organizational decision making. This step is intended to probe change in the extent of managerial control of decision making within organizations. In the final case of work organization, I examine developments in the occupational composition of intra-establishment employment, in processes of communication within organizations, and other aspects of work organization. The goal of these tests is to understand whether work organization in the typical British organization has changed in ways that make production more contingent on managers' input.

The first set of results for consideration, therefore, relate to the question of demand for managers in Britain. Chapter two found broadly that, since 1990, the occupational group experiencing the highest rate of demand growth – as measured using the 'job analysis' of wage bill shares – was that of 'corporate managers' (ISCO 12). This shift in demand towards managers was found to be stronger in the service sector than elsewhere, and especially strong in the sectors of financial services and business services. In contrast to the British experience, French and German data showed no evidence that a similar demand shift towards managers had taken place in those countries during this period. Overall, these findings suggest the following conclusions. First, the demand shift towards managers in Britain is an economically significant and durable trend – some of the evidence presented in Chapter two suggests that it dates back to at least a decade before 1990. Second, as no similar trend can be observed in France and Germany, it seems possible that it is of origins specific to Britain.

This apparent growth in demand can be thought of as making itself apparent in two dimensions: change in relative quantities; and change in relative prices. The first of these dimensions can be measured with reference to the managerial share of employment, and the second with reference to the average compensation cost of managers relative to other occupational groups. The comparative results presented here relate only to the employment share dimension of demand. However, as it is employers who design jobs and their array within an organization, this metric may be taken as an effective indicator of the profile of demand. Table 2 presents the evolution of the occupational composition of employment in Britain and in two similar comparator countries – France and

Germany.³² These results are derived from a number of microdata sets that capture information on the subject of occupation via differing survey methodologies and occupational classifications. However, irrespective of the methodology or classification, two observations consistently stand out. First, the employment share of those performing managerial jobs appears to have grown substantially in Britain in the last two decades or so. And second, this share is much greater in all time periods for Britain than for the other countries.

At the most conservative estimate, therefore, Britain's managerial share rises from 6.5% in the mid-1970s to 13% by 2002.³³ Comparison among the various series for Britain reveals that, while all point to a rise in the managerial employment share of 70%-100% over its initial level during the last quarter of the 20th century, the combination of NES data and the SOC 1990 classification records higher levels at all points in time than do the other data sets and classifications. This observation is consistent with two facts. First, the NES tends to undersample low-paid employees, thus relatively boosting the shares of more highly paid occupations (Stuttard 2002). And second, for any given data set the SOC 1990 classification is recognized to assess the managerial share of employment at a higher level than ISCO-88 and its close derivatives (SOC 2000 included), as it deploys a slightly broader definition of managerial jobs, e.g., it includes senior clerical roles in the managerial category whereas ISCO and SOC 2000 do not (Beerten, Rainford et al. 2001).

In contrast to the British results, while France and Germany also exhibit growth in their managerial shares of employment, they do so from rather lower initial levels (4.2% and 3% respectively according to ISCO-88). These comparative results, derived from similar data sets set up in identical formats, are broadly corroborated by ELFS results for the period since 1993 (Table 3). These data also show that Britain has a much higher employment share in managerial occupations than France or Germany (here, all of

³² 'Germany' is defined in the same way as in Chapter two – i.e., I refer to the former FRG or current western Länder only.

³³ This estimate is drawn from GHS data expressed in terms of SOC2000, which is the classification that is most precise about which types of worker are managers and which are not.

unified Germany), and indeed is something of an outlier in this respect compared to the rest of the EU-15, Republic of Ireland excepted. In some ways, this is a surprising finding. In particular, the idea that Britain has possessed outlier status in this dimension over a period of decades does not chime with previous conclusions that placed Britain in a middling position in the mid-1970s, with relatively fewer managers than France, and relatively more than West Germany (Maurice, Sorge et al. 1980). What may explain this discrepancy, however, is that those conclusions derived from a much narrower sample (a small number of manufacturing plants only) and a very different methodology (the researchers' own survey design and classification of occupations). Thus, it is certainly possible that both sets of results may be accurate reflections of reality as it stood.

In order to clarify the precise form of the demand shift towards managers, Figures 2 and 3 use NES data to illustrate the evolution of the internal composition of the occupational group of British managers, defined at the 2-digit level of SOC 1990. Figure 2 shows that the bulk of the relative growth of the managerial share of employment is accounted for by the rapid and massive expansion of the categories of 'financial managers' and – especially – 'specialist managers'. Figure 3 introduces the second aspect of demand growth, showing that the wage bill shares of these categories of managers grow even more rapidly than their shares of employment. This result indicates that these groups experience relatively high wage growth over time. A further measure of detail can be gained by probing trends at the 3-digit level of SOC 1990, which is the most disaggregated level of occupational classification available in the data used here. Figure 4 shows the changes in wage bill shares of the subcategories that make up the 'specialist' manager group in this system of classification. As can be seen, most of the subcategories grow at a similar rate to the group as a whole, although the case could be made that the group of 'ICT managers' expands even more quickly than the others. In absolute terms, though, by far the greatest weight is incurred in all periods by the groups of 'treasury and finance' and 'marketing and sales' managers, suggesting that a continuous and widespread rise in demand for these varieties of employees drives much of the headline result over the long term.

In light of these results, it appears that the managerial share of British employment has grown steadily and at a non-negligible rate since the mid-1980s, and maybe since even earlier. Furthermore, this pattern of growth is shown by results drawn from a number of different data sets to be something of an outlier within the context of Western Europe. Certainly, only the Republic of Ireland appears to have undergone any comparable process of change. Consequently, these employment share results provide strong evidence that in Britain the pattern of labour demand has shifted towards managers in recent years, and they are supported by the results of Chapter two's job analysis. Examination of the precise form of the demand shift towards managers indicates that it is largely driven by specialist managerial groups in the functional areas of finance and marketing/sales.

If demand for managers in Britain has been increasing, then, the question arises as to whether this outcome is merely the product of change in the composition of economic activity. As a first means of exploring this idea, I perform a set of logistic regressions of 'specialist manager' status (i.e., membership of SOC 1990 minor group 12, the group for which demand appears to have grown most rapidly) on a set of industry and sector dummies in a number of time periods between 1975 and 2001. Were the results of these regressions to show that industry coefficients were unstable over time, it would suggest that the headline growth in the managerial share of employment was the product of across-industry variation over time in shares of overall employment – that is, industries which began the period with high managerial shares of employment were the ones that exhibited the greatest gains in shares of overall employment over time. Table 4 presents the results of these regressions. For the most part, the structure of these coefficients remains stable – industries in which employees are relatively more likely (or less likely) to be members of this managerial group remain so. While there are some signs of change – extraction, business services, and possibly manufacturing become relatively more manager-intensive, whereas utilities and transport and communication shift in the opposite direction – these are relatively muted. Consequently, these results tend to suggest that the growth of the managerial share of employment has been an intra-industry

phenomenon rather than one driven by change in the inter-industry composition of overall employment.

I seek to corroborate this finding by performing a form of shift-share analysis of changes in the managerial share of employment by broad industry group (see Table 5). This exercise explores the relative contributions of change in intra-industry occupational employment structure and change in across-industry occupational employment structure to change in the occupational composition of overall employment. It does so by comparing the actually observed managerial employment shares in 2004 to counterfactuals generated by applying 1974's intra-industry managerial shares to 2004's overall distribution of employment. As a result of this analysis, I find that only 7% of growth in the headline managerial share of employment across the economy can be attributed to inter-industry effects. A similar exercise conducted around the dimension of employer size (by employment) finds that an even smaller share of the growth in the managerial share of employment can be explained by shifts in employment among employer size classes. Thus, the longstanding trend for employment to shift towards smaller establishments and enterprises (Kersley, Alpin et al. 2006) does not appear to contribute to the outcome of interest. Collectively, these results indicate that the observed rise in managerial employment intensity is not due to composition effects (i.e., relative growth in the overall employment share of industrial or size-class categories that initially exhibited a high level of managerial employment intensity). As a consequence, the growth of the overall managerial share of employment appears to be chiefly an intra-category (industry or size class) phenomenon, and perhaps even an intra-organizational one.

In summarizing the results of the first element of this chapter's empirical enquiry, therefore, we might first say that Britain is (and has long been) an outlier within Europe as regards its managerial share of employment, and in relation to the growth in demand for managers over time. Second, the overall growth in demand for British managers is driven in particular by increased demand for highly skilled managers specialized in particular matters of finance, commerce, technology, and organization. Third, the

observed employment share and underlying demand shifts do not appear to be related to change in the overall composition of employment that relates to macro-level change in the structure of British economic activity, e.g., tertiarization. Indeed, although there are some significant but slight changes in managerial intensity across industries, sectors, and organizational size classes, the lion's share of change has occurred within categories of economic activity. It seems very plausible, therefore, that these changes are rooted in processes of evolution taking place within organizations – a theme to which I will return shortly.

This brings me to the second element of the empirical enquiry. I begin by examining the evidence for change in skills production systems for managers. Initially, this involves measuring change in the observable skills (qualification and experience) of managers, and in the returns that they generate. My intention is to understand which kinds of skills managers own and are rewarded for in different time periods, and the extent to which these skills are monopolized by managers. A useful point of reference for this component of the analysis is Crockett and Elias's (1984) study of British managers in the mid-1970s, which draws on data from the 1975-1976 National Training Survey (NTS) to find that managers in Britain in this period typically had low levels of education and training in comparison with their peers in other industrialized countries. In fact, the authors conclude, British managers at this time were on average only marginally better educated than the average in the general population.

I address the issue of observable skills with reference to the GHS data series, which provides consistently defined information on occupation, human capital characteristics, and, to a lesser extent, job/employer characteristics for the period from 1974 to 2004. In its descriptive aspects, the trends in the GHS data in such variables as occupational and gender shares of employment, the distributions of age, tenure, and qualifications of employees, and so on, are in the main very similar to equivalent results derived from NES and LFS data. This suggests that the GHS will provide results vis-à-vis managers that are consistent with the results already noted. In contrast to Crockett and Elias's results, I find that managers are on average considerably more highly qualified than the

general population in all time periods. However, this result is consistent with the fact that the definition of ‘managers’ used for the GHS data is more exclusive than the CODOT-based equivalent used in the earlier study. Like Crockett and Elias, I find that more than 50% of managers in the mid-1970s declare they have no formal qualifications. By 2004, though, this share drops to around 8%. This general over-time pattern is reinforced by the observation in all time periods that younger cohorts of managers are on average progressively better educated than their older peers.

In order to explore further the observation of rising qualifications among managers, I conduct logit regressions of ISCO 1-digit managerial status on a familiar set of individual (i.e., human capital) and employer characteristics for a number of years between 1975 and 2004. This analysis permits me to identify change in the likelihood with which managerial status is associated with observable skills (qualifications and experience) while controlling for other individual characteristics – Table 6 presents the results. While some features of the results remain consistent over time – e.g., the tendency for managers to be older and to have longer tenure than their non-manager counterparts – there are also important shifts that take place. Most pertinently, educational qualifications progressively become much more systematically related to managerial status over the duration examined.

At the outset, in 1975, managers are not significantly more likely to hold higher levels of qualifications than non-managers – apart from in the initial step from no qualifications to some kind of qualification. Yet, by the turn of the century, managers are significantly more likely than non-managers to hold a particular level of qualification in a way that is strongly and positively associated with the level of qualification. Thus, the greatest difference between managers and non-managers occurs at the degree level. This shift begins in the 1980s with an emergent stratification by level of qualification, and becomes more pronounced over time, suggesting a process of increasing sorting of potential managers by education or qualification level that would be consistent with a notion of a credential-led ‘professionalization’ of British management. The rising tendency for managers to be selected by their qualifications is suggestive evidence of a greater

distinction between managers and other types of employee – at least, as defined by recruitment pools – and an indicator, perhaps, of the end of the tendency for British managers largely to graduate from the ranks of non-managerial employees. Such a process would echo that observed in the US in the first half of the 20th century (Jacoby 1985; Jacoby 1991).

If it appears that, over time, employers progressively place greater emphasis on formal qualifications as a means of distinguishing between managers and non-managers, we might expect that this occurs because these qualifications – or the skills associated with them – become increasingly valuable to firms if deployed in managerial roles. A means of testing this supposition is to examine the relationship between earnings and qualifications among managers, and the ways in which it changes over time. I perform this test by conducting earnings regressions of the wages of full-time managers on a set of individual and employer characteristics for a number of years between 1975 and 2004 (see Table 7 for the results). The important observations that emerge from these results are that, while returns to age remain relatively stable (and inconsequential, beyond the age of 30) over time, returns to tenure drop significantly after 1990. At the same time, returns to education – and to a university degree in particular – rise notably over the same period. Indeed, similar regressions conducted for non-managerial employees show that the rise in returns to education among managers is far more rapid than among non-managers. Indeed, among the latter group the structure of returns is quite stable over time for those holding A-levels or better qualifications. These observations reinforce the impression that a general transition has taken place in which employers decreasingly value skills acquired through general experience in managerial roles, and increasingly value skills associated with high qualifications. It appears, therefore, that British managers – as a group – have not only become increasingly detached from other types of employees,³⁴ but that high skills (represented by degree-level qualifications or above) have also tended to become concentrated among their ranks. Moreover, employers, for

³⁴ This conclusion implies that British firms increasingly fill managerial vacancies by two means only: for lower grade managerial roles they recruit recent graduates directly into the management track; and for more senior roles they recruit individuals with prior managerial experience. Over time, therefore, these processes would create a managerial group impermeable to those who had not originally entered it through the first means.

their part, seem to have valued – and therefore rewarded – this combination of high skills and managerial roles ever more highly.

From the perspective of the ‘societal effects’ approach, therefore, there is evidence that the British skills production system – principally as it relates to managerial skills, but with implications for the overall distribution of skills – has changed substantially over the last two or three decades. As this approach predicts that skills systems will covary on the one hand with industrial relations systems and on the other with systems of hierarchy and work organization, one might expect change in the first dimension to be accompanied by change in the others. Turning to the question of industrial relations systems, my intention is to investigate whether there is evidence that these have changed in ways that grant managers greater control over organizational decision making at the level of the individual organization. I draw on WERS time-series data in order to address this issue.

That British industrial relations arrangements have undergone a great deal of change in the years since 1980 is well known, with substantial reductions in rates of union membership and collective contract coverage having occurred (Howell 1999; Brown, Marginson et al. 2001). These headline shifts are reflected in establishment-level trends observable in the WERS data series. Table 8 presents the evolution of a number of key measures of industrial relations arrangements between 1980 and 2004. It can readily be seen that the spread and weight of union influence as captured by local membership density shrinks greatly over time. Thus, for example, the share of establishments with no union members rises from 27% to over 50%, while the share of heavily unionized establishments (75% density or more) sinks from over 30% to 13%. Beyond this hollowing out of unions as membership organizations within workplaces, the institutions of collectively bargained regulation of employment also wither. For instance, the share of establishments in which one or more unions are recognized for collective bargaining purposes declines from a comfortable majority (64%) to less than 40%. In addition, even where unions retain collective bargaining rights, the share of the establishment workforce for which they are able to bargain steadily contracts over time. Consequently, the share

of establishments in which almost all employees (80% or more) are covered by collective bargaining arrangements dips from an initial half to around a third.

However, the contraction of institutions that enable non-managerial workers to influence processes of organizational decision making is not limited to those relating to unions and collective bargaining. In a related trend, the share of establishments with some kind of joint consultative committee – an institution through which non-managerial employees may discuss their concerns with management, even in the absence of union organization – shrinks from 34% to 24%. At the level of the establishment, therefore, we may conclude that the dominant trend in industrial relations systems (broadly understood) is one of a steady reduction in the scope of mechanisms of organization and voice through which employees can present and enforce consideration of their interests in the organizational decision making. Owing to the retrenchment of these institutions, it appears that unilateral managerial control of organizational decision making has become a viable reality in an increasing share of British organizations.

This finding propels the enquiry forward to consider the issue of change in the role of managers in the typical approach to work organization in Britain. My main aim in this component of the analysis is to assess the evidence for signs that managers have become more prominent in this approach – i.e., evidence that the system of work organization adopted makes the production process more reliant on managerial input. As a first step, I look at the evolution of the occupational composition of the workforce as a means of understanding whether the managerial intensity of production has changed within workplaces over time. I would expect a rising share of managerial employment to signal a greater role for managers in the process of production. Examination of trends in relation to the occupational composition of the establishment-level workforce shows that the weight of management in the workforce increases over time and is a widespread phenomenon.

Table 9 presents the mean establishment-level employment shares of the different occupational groups that can be discerned in the WERS time-series data. It is apparent

that – as observed at the level of the whole labour market – the managerial share of employment has risen over time at the level of individual establishments. Notably, this trend is true on both sides of the divide between the ‘old’ and ‘new’ occupational classifications (i.e., on the one hand 1980-1990, and on the other 1998-2004), which suggests that this result is no mere function of the transition from one classification to another. Other trends familiar from the study of macro-employment trends – the rise in the employment shares of other non-manual groups, the steep decline in that of skilled manual workers, and the rise of female and part-time employment – are also visible at the establishment level. The consistency of these results with those obtained from surveys with very different units of observation and collection methodologies is reassuring for the interpretation of the WERS data. As regards the distribution of establishment-level employment shares of management, much of the rise in the mean over time seems to be driven by a 20 percentage point drop in the share of workplaces with less than 5% of employment represented by managers, and a corresponding rise in the share of establishments with a 10% or greater managerial share of employment.

A primary concern in this regard, however, stems from the fact that the profile of economic activity in Britain has changed greatly over the period in question.³⁵ The question is whether it may be the case that any observed trend towards a greater role for management in the typical approach to work organization simply reflects underlying change in the composition of the population of workplaces. Effectively, this is to argue that the types of workplaces in which managers are prominent in production at the beginning of the period may be those that become comparatively more common during the process of industrial change, but that they do so for reasons unrelated to their chosen system of work organization. To summarize the WERS trends regarding industrial

³⁵ The WERS time series data provide evidence of considerable change in the form of economic activity in Britain between 1980 and 2004 (among organizations with 25 employees or more). During this period, patterns of ownership and control shift, with the share of establishments belonging to the public sector declines from more than 30% to around 25%. The sectoral distribution of establishments changes such that the share of manufacturing establishments nearly halves from an initial level of 25%. Large establishments become significantly less common, with the share of establishments with 500 or more employees dropping from around 35% to 23%. In addition, the share of establishments belonging to very large organizations (with 10,000 employees or more) declines from over 30% to 23%. In the course of this reshaping of production, the share of the oldest establishments (aged 25 years or more) falls from 53% to 47% as the share of the youngest (aged 10 or less) rises.

change over the period 1980-2004, the median establishment becomes smaller – and, if it belongs to a multi-establishment organization, so does its parent – younger, and much more likely to be privately owned and to operate in the service sector.

The impact of changes in the distribution of economic activity appears to contribute little to the overall trends the composition of workplace employment. Notably, there has been growth in the managerial share of employment of a similar order in both manufacturing and service establishments, although the initial level is lower in manufacturing. Similarly, the decline of the skilled manual share of employment is almost identical in both sectors. Where they do differ in occupational employment trends is that the manufacturing sector appears to have become considerably more intensive in its employment of professional and technical workers, although this may be a function of employment retrenchment on the shop floor as much as a sign of a different trajectory of organizational development. Comparison of the public and private sectors reveals that public-sector establishments are less managerial employment-intensive in all time periods, even though both sectors exhibit the same rising trend in this area. In addition, public-sector workplaces consistently employ a greater share of professional and technical workers than their private-sector counterparts. This observation is particularly interesting in the light of the fact that the managerial share of establishment employment is higher – and the professional/technical and skilled manual shares lower – in all time periods in workplaces without union recognition than in those where unions are recognized. Given the comparatively greater strength of unions in the public sector, these results would appear to be interlinked in a manner consistent with the expectations of the ‘societal approach’.

In quantitative terms, therefore, managers have become considerably more important to the approach to production adopted by British organizations across the manufacturing and service sectors, and across the public and private sectors. Another aspect of work organization through which the importance of managerial input may be assessed regards the issue of intra-organizational communication. The relevance of this variable is due to the importance of this type of communication to the integration and coordination of

complex production. The WERS time series contains a number of variables on this subject, and they shed light on the extent to which organizational activity is steered by centralized, rationalized means. Table 10 shows that the scope of information provision by management has tended to rise over time, especially in its most intensive form, suggesting that managerial hierarchies are becoming more adept over time at communicating information down through the ranks and controlling activity from the top. Consistent with this observation are the findings that the systematic use of the management chain has become more common over time, and that the usage rate for briefing groups has grown massively. Collectively, these trends are indicative of the spread of a more systematic, top-down approach to management – which privileges managerial input to the production process – in British workplaces during the period 1980-2004.

From the perspective of the ‘societal effects’ approach, therefore, the evidence so far presented for the period between the late-1970s and the early-2000s indicates that: managerial skills formation has taken a distinctive form relative to that of other employees; industrial relations institutions have evolved in ways that open the way in many organizations for more-or-less unilateral management control of organizational decision making; and the typical approach to work organization has developed so as to raise the importance of managerial input to the production process. Thus it would appear that these variables have covaried in the manner predicted by the theoretical framework. In order to test this apparent covariation in a systematic manner, I perform regressions – for each year available and also in pooled form – of the establishment-level managerial share of employment on a set of indicators of industrial relations and work organization and a set of control variables. This method acts as a robustness check on the preceding ‘societal effects’ analyses, as it enables me further to probe the contribution of composition effects (in relation to establishment characteristics) upon the variables of interest, and to understand if the covariation so far observed stands up to the simultaneous inclusion of the three key groups of variables in the model.

Tables 11 and 12 report the results of these regressions. Because the time series can only offer a limited number of variables for the full period between 1980 and 2004, the regressions featured in Table 11 take a reduced, or simple, form that cannot explicitly address the issue of work organization. However, the regressions reported in Table 12, which relate only to the years 1984, 1998, and 2004, exploit a richer set of variables in order to plug this gap in the analysis. The control variables used in both sets of regressions comprise indicators for industrial activity, establishment size by employment, whether the establishment belongs to a single- or multi-establishment organization, public- or private-sector status, head office status, and measures of the establishment employment shares of female and part-time workers. The ‘rich’ regressions featured in Table 12 also control for the establishment employment shares of key non-managerial (occupational) skill groups: professional/technical workers, and skilled manual workers. In order that the tables remain manageable in size, the coefficients are not for the most part reported for these control variables. However, the coefficients for the industry indicators are reported in the table to enable the exploration of industry-type effects.

Despite the differing forms of the models used in the two sets of regressions, their results are largely consistent with one another where their variables overlap. The evidence for industry effects is rather limited, with only perhaps the transport and communication industry showing signs of being particularly distinctive (with a lower typical workplace managerial share of employment). This observation reinforces the conclusion made above that changes in respect of other variables – dependent and independent – are of a within- rather than an across-industry nature, that is, that establishments in different industries are evolving in similar ways.

Of the other variables appearing in both sets of regressions, the most important are those representing union density rates at the establishment level and the time dummies in the pooled regressions. In both simple and rich iterations, the pattern of time dummies in the pooled regressions suggests that the overall rise in the mean managerial share of establishment-level employment is a significant fact over and above the changes in the composition of the British population of establishments during the period in question.

However, this is not to say that all establishments are evolving in the same way. Notably, union density becomes significantly and quantitatively more negatively associated with the managerial share of employment. The variable for the existence of a joint consultative committee tells no consistent story. These results indicate that unionized and non-unionized establishments become steadily more different over time regarding their approach to work organization and hierarchy.

This inference is further reinforced by the pattern of coefficients for the additional variables reported in Table 12. Here, the scope of information provision by management becomes positively and significantly associated with the managerial share of employment over time, suggesting that more manager-intensive organizations also engage in more systematic managerial behaviour around the coordination and control of production. In addition, the age of the establishment becomes significantly and quantitatively more negatively associated with the managerial share of employment in the course of time. This last finding is consistent with the conclusions of Machin (2000), who also uses WERS data to identify a strong negative correlation between establishment age and local union strength in the private sector. He further finds that workplaces set up after 1980 are significantly less likely to be unionized than those created prior to this date. The sharpest impact of this effect is found in the manufacturing sector, although the lower rate of change among the service industries is partly explained by the lower initial unionization rate found in that sector. No similar relationship can be observed for public-sector workplaces. If one takes the perspective that the growth of the managerial share is an indicator of new forms of work organization and hierarchy, there are good grounds for expecting a significant relationship between this variable and workplace age owing to the fact that it is easier to implement new organizational forms in new establishments than by reorganizing existing ones.

Conclusions

This chapter addresses the question of whether change in the centrality of managers to the production model adopted by British organizations might have contributed to rising demand for managers, and thereby to the growth of top-tier pay inequality. It is motivated in doing so by three factors: First, Chapter two of this thesis could not find evidence that the rise in relative demand specifically for managers observed in Britain since the late-1970s had also occurred in either France or Germany. This finding implied that the causes of the rise in demand were not of a universal type in the manner envisioned by, say, the simple form of the SBTC hypothesis. Second, as this thesis had already ruled out said version of the SBTC hypothesis (see Chapter two) and organizational governance arrangements (see Chapter three) as explanations for the British rise in demand for managers, another possible explanation appeared to be a version of the skill-technology complementarity hypothesis that accounted for interaction between this complementarity and the degree of centrality of managers in production in a given location. Third, as the research consensus had historically been that British managers were not particularly central to production – certainly not to the extent that, say, French and US managers were thought to be – a reappraisal of the role of British managers in production over the last two decades or so was necessary. If it could be shown that British managers had become much more central to the production process during this time, it would validate the case for the modified skill-technology complementarity hypothesis, and thereby open a promising new path of enquiry for the study – currently somewhat at a standstill – of international differences in pay inequality trends.

The approach of the paper is to apply the insights of the ‘societal effects’ framework to suitable data in order to assess the degree of change in the centrality of managers to production in British organizations. This is combined with an empirical clarification and confirmation of the existence and dimensions of the demand shift towards managers that has occurred in recent years. This conclusion revisits the aims of the chapter,

summarizes the findings of the empirical analyses, and discusses their meaning in the wider context of the thesis.

The first element of empirical study relates to the issue of demand for managers in Britain. Here, the evidence leads me to infer that there has been a notable shift in relative labour demand in Britain towards managers, and that this demand shift has strongly contributed to the rise in overall British pay inequality observed at the top of distribution. In comparative terms, Britain appears to have experienced higher rates of growth in demand for managers than many other European countries. Indeed, Britain appears to be an outlier in that most other countries in Europe have experienced little or no growth in this aspect of labour demand. Further, I conclude that this demand growth is linked particularly closely to highly skilled managers specialized in particular matters of finance, commerce, technology, and organizational functioning. These results are robust to the contention that the apparent growth in the employment share of managers is due to superficial processes of change such as ‘title inflation’. Perhaps most importantly, it appears that the growth in demand is largely an intra-organizational phenomenon rather than a trend driven by compositional change over time in the profile of economic activity (by sector, firm size, etc.).

This last finding supports the idea that the growth in demand for managers is linked to changes in their role in production within organizations. The chapter’s second set of empirical analyses tests this idea directly, examining in turn changes in relation to the key variables of skills production systems, industrial relations systems, and work organization. In this section, it is first of all found that in respect of skills the occupational group of British managers has progressively absorbed a greater share of high skills, detached its career ladders from those of other occupational groups to become increasingly self-sufficient, and for doing so has been ever better rewarded by employers. Second, industrial relations systems have changed in ways such that managers increasingly control organizational decision making on a unilateral basis. Third, organizations’ approach to work organization has typically shifted so as to increase the importance of managers’ contribution to the production process. Moreover, these trends

are robust to a modelling approach that accounts for change in the composition of economic activity over time, and enables the simultaneous modelling of the three key variables. Viewing the evidence in light of the ‘societal effects’ framework, therefore, I contend that, since around 1980, managers have become significantly more central to the production process in the typical British organization.

Summarizing my argument, I note that the manager-led growth in top-tier pay inequality has coincided in Britain with the rise in the centrality of managers to production, all at the same time that high-skill-complementary ICT innovations have been increasingly widely implemented by employers. Furthermore, I find that no comparable growth of pay inequality has occurred in a number of similar countries in Europe. While there is only limited evidence on the trajectory of the role of managers in production in those countries – and I do not measure any such change here – the British outcomes suggest that the production context is important in influencing the impact of exogenous variables such as technological development on the distribution of pay. More broadly, this finding argues against the idea that variables such as technology exert a deterministic and predictable effect on pay inequality. In this way, my study points to a way out of the impasse faced by researchers who seek to explain growing pay inequality with reference to SBTC or variants upon it (for discussion of this, see Card and DiNardo 2002; Howell 2002; Lemieux 2007), i.e., that while technological factors cannot plausibly account for across-country difference of pay inequality trends, many developed countries have not experienced growth in pay inequality of the type observed in the UK, US, and other Anglophone countries. In addition, the findings of this chapter support those who emphasize the importance of the underlying historical and institutional context in the determination of economic outcomes (e.g., Marsden 1986; Thelen and Steinmo 1992; Marsden 1999; Hall and Soskice 2001b; Thelen 2004).

A key contribution of the chapter, therefore, is its finding that skill-technology complementarity effects appear contingent upon the context in which they take place. As a result, it argues plausibly for a renewed approach to the study of pay inequality trends that will interpret results derived using the economic model in conjunction with rich

contextual data on organizations and the political economy in which they are embedded. The study of the institutional and historical context in which economic change takes place – and its incorporation into the kinds of rigorous approaches to hypothesis generation and modelling typically applied in the field of economics – promises rich results for future researchers who choose this path.

In an additional – but subsidiary – contribution, the chapter broadens our understanding of the role of management in British organizations. Its conclusions challenge the (somewhat dated) consensus that management was, in comparative terms, a rather amateurish and sidelined factor in the functioning of British organizations. The recent data used to generate the results presented here indicate that this picture has altered radically, and that British management is now a much more structured, controlling, professional, and – ultimately – prominent element of the production model of British organizations.

Overall, this chapter supports the idea that the market-based explanation of rising top-tier pay inequality in Britain is much more convincing than the non-market explanation tested in the preceding chapter – on the condition that particular aspects of the historical and institutional context of the labour market is taken into account. Ultimately, it seems that British organizations appear to value managers relatively much more highly now than they did in the past, and have been reorganizing themselves in ways that have strongly reinforced this trend. From the perspective of this thesis, the key outcome of these changes is that top-tier pay inequality has risen largely on the back of the shift in relative labour demand towards managers.

Appendix to Chapter 4

Tables

Table 1: Occupation and managerial duties in Britain, 1981-2004

Year	<i>Proportion of group performing managerial duties or supervising others in job</i>	
	Managers	Non-managers
1981	0.83	0.23
1986	0.87	0.19
1991	1.00	0.19
1994	0.88	0.31
1996	0.89	0.31
2001	0.92	0.28
2004	0.90	0.29

Note: weighted LFS data

Note: 'managers' are defined by 1-digit SOC 2000=1; all other occupations are 2<=SOC 2000<=9

Note: LFS question asks respondent whether he or she performs managerial duties or supervises other employees in their job

Note: standard errors on point estimates are negligible (<0.005 in every case)

Table 2: Occupational composition of employment, 1976-2002

<i>ISCO-88 major group (% employment)</i>										
<i>Country/year</i>	Milit	Mgrl	Prof	Assoc prof	Clerk	Svc	Agr fish	Craft	Oper	Elem
Britain (NES)										
<i>1976</i>	-	8.1	11.7	6.5	21.4	9.4	0.6	17.7	13.8	10.9
<i>1984</i>	-	8.8	13.5	7.8	22.3	10.3	0.6	15.1	11.3	10.5
<i>1993</i>	-	11.4	15.0	8.2	23.6	11.7	0.4	11.3	9.6	8.9
<i>2001</i>	-	14.0	16.0	8.2	21.6	15.3	0.4	8.9	8.1	7.5
France										
<i>1976</i>	-	-	-	-	-	-	-	-	-	-
<i>1984</i>	1.2	4.2	8.2	15.7	16.0	10.5	4.6	14.3	15.4	8.8
<i>1993</i>	1.8	5.6	9.3	17.8	15.7	12.3	2.8	13.2	12.0	8.5
<i>2002</i>	1.5	5.7	10.8	18.9	15.6	13.6	2.0	12.2	11.2	8.5
Western Germany										
<i>1976</i>	-	-	-	-	-	-	-	-	-	-
<i>1984</i>	1.0	3.0	11.5	19.0	12.9	11.8	0.7	22.3	9.7	7.9
<i>1993</i>	0.8	3.4	12.7	20.5	14.7	12.0	0.5	19.0	8.9	7.3
<i>2002</i>	0.8	5.1	17.2	22.1	14.9	11.0	0.7	12.5	7.5	8.2

Note: table continues overleaf.

UK SOC 2000 major group (% employment)

<i>Country/year</i>	Mgrl	Prof	Assoc prof	Clerk	Craft	Svc	Sales	Oper	Elem
Britain (LFS)									
1976	-	-	-	-	-	-	-	-	-
1984	-	-	-	-	-	-	-	-	-
1993	11.8	11.8	10.8	17.5	10.9	6.3	7.4	9.8	13.6
2002	13.7	11.5	13.5	14.6	9.3	7.6	8.7	8.2	13.1
Britain (GHS)									
1976	6.5	7.4	7.6	16.7	16.1	7.2	7.4	15.1	16.1
1984	8.6	9.7	9.5	17.3	13.9	7.2	7.1	11.9	14.8
1993	10.9	12.1	10.7	18.4	10.5	6.3	7.6	9.6	14.1
2002	13.0	12.3	13.7	14.8	9.3	7.9	8.1	8.4	12.6
Western Germany									
1976	-	-	-	-	-	-	-	-	-
1984	3.3	11.7	17.9	12.7	22.2	4.3	1.4	12.8	13.8
1993	3.9	12.9	20.1	14.4	18.8	5.5	1.4	11.2	12.0
2002	6.0	17.8	21.2	14.3	13.1	4.6	1.0	9.1	13.6

UK SOC 1990 major group (% employment)

<i>Country/year</i>	Mgrl	Prof	Assoc prof	Clerk	Craft	Svc	Sales	Oper	Elem
Britain (NES)									
1976	9.2	7.7	7.2	20.0	17.7	6.4	5.5	15.9	10.4
1984	9.9	8.2	9.0	20.8	15.1	7.7	6.2	13.1	9.9
1993	12.5	9.0	10.2	22.0	11.3	8.4	7.0	11.1	8.6
2001	15.1	10.3	10.0	20.0	8.9	10.3	8.6	9.5	7.3

Note: LFS, NES, GHS, Enquête emploi, and GSOEP data

Table 3: Occupational composition of employment in selected EU comparator countries, 1993-2005

<i>ISCO-88 major group (% employment)</i>											
<i>Country/ year</i>	Milit	Mgri	Prof	Assoc prof	Clerk	Svc	Agr fish	Craft	Oper	Elem	NK
EU-15											
<i>1993</i>	-	-	-	-	-	-	-	-	-	-	-
<i>1996</i>	0.7	7.9	11.8	13.4	13.0	12.5	3.8	15.4	8.4	8.3	4.7
<i>1999</i>	0.7	8.3	12.9	14.4	13.1	13.4	3.5	15.3	8.7	8.7	1.0
<i>2002</i>	0.7	8.1	12.7	15.7	12.8	14.0	3.2	14.4	8.4	9.5	0.7
<i>2005</i>	0.7	8.9	13.6	16.6	12.0	13.5	2.9	13.6	8.0	9.9	0.4
France											
<i>1993</i>	-	-	-	-	-	-	-	-	-	-	-
<i>1996</i>	-	-	-	-	-	-	-	-	-	-	-
<i>1999</i>	-	-	-	-	-	-	-	-	-	-	-
<i>2002</i>	-	-	-	-	-	-	-	-	-	-	-
<i>2005</i>	1.3	7.8	12.9	17.6	12.2	12.5	4.1	12.3	9.6	9.6	0.2
Germany (all)											
<i>1993</i>	0.8	6.0	11.2	18.8	13.4	10.6	2.4	20.0	8.3	8.6	-
<i>1996</i>	0.6	5.8	12.1	19.7	12.9	11.3	2.1	18.9	7.8	7.3	1.4
<i>1999</i>	0.6	5.8	12.9	19.8	12.7	11.4	2.2	17.9	7.4	8.0	1.3
<i>2002</i>	0.6	5.8	13.3	20.8	12.7	11.7	2.0	16.6	7.3	7.9	1.4
<i>2005</i>	0.6	5.4	14.6	21.4	12.3	12.1	1.9	15.2	7.1	7.9	1.4
Ireland											
<i>1993</i>	2.2	8.7	15.1	4.1	14.2	17.0	9.8	12.1	8.3	8.5	-
<i>1996</i>	0.8	8.9	17.4	4.1	14.1	16.7	8.6	12.2	8.5	8.6	-
<i>1999</i>	0.5	17.8	15.2	5.5	13.4	14.9	1.0	13.4	9.3	9.1	-
<i>2002</i>	0.4	17.3	16.3	5.6	13.4	15.4	0.9	12.6	9.6	8.4	-
<i>2005</i>	0.4	15.8	16.9	6.2	12.9	16.1	0.7	14.2	7.9	9.0	-
Italy											
<i>1993</i>	0.9	2.8	8.9	13.7	13.1	15.5	4.7	21.6	9.0	9.9	-
<i>1996</i>	0.9	3.0	9.8	14.6	13.5	15.9	3.9	19.7	9.4	9.3	-
<i>1999</i>	1.0	3.3	10.2	14.5	13.1	15.1	3.4	18.4	9.4	8.3	3.3
<i>2002</i>	1.0	3.3	10.7	17.2	13.9	15.9	3.0	17.6	8.9	8.5	-
<i>2005</i>	1.1	9.2	9.9	19.5	11.5	10.6	2.4	16.9	9.3	9.7	-
Netherlands											
<i>1993</i>	-	-	-	-	-	-	-	-	-	-	-
<i>1996</i>	0.5	12.0	16.0	16.9	11.8	12.0	1.7	10.9	7.1	7.0	4.1
<i>1999</i>	0.6	11.7	17.7	17.3	11.9	12.0	1.6	10.4	6.5	7.6	2.6
<i>2002</i>	0.5	11.9	16.9	17.0	11.6	12.0	1.4	9.1	5.7	8.5	5.4
<i>2005</i>	0.4	9.7	19.1	18.3	12.8	13.5	1.6	9.1	5.8	8.9	0.7

Note: table continues overleaf.

<i>ISCO-88 major group (% employment)</i>											
<i>Country/ year</i>	Milit	Mgrl	Prof	Assoc prof	Clerk	Svc	Agr fish	Craft	Oper	Elem	NK
Spain											
1993	0.4	7.8	9.5	6.0	12.0	13.0	8.2	18.3	10.9	14.0	-
1996	0.5	8.5	11.4	8.1	10.2	13.8	6.3	16.9	10.5	13.8	-
1999	0.5	8.1	11.6	9.1	9.7	14.0	4.9	17.1	10.6	14.4	-
2002	0.5	7.5	12.1	10.1	9.2	14.7	3.8	17.4	9.9	14.5	-
2005	0.5	6.8	12.6	11.4	9.2	15.3	3.1	16.9	9.2	15.0	-
Sweden											
1993	-	-	-	-	-	-	-	-	-	-	-
1996	-	-	-	-	-	-	-	-	-	-	-
1999	0.3	4.9	15.7	20.1	10.5	18.4	2.8	11.2	10.8	5.2	0.1
2002	0.2	4.8	17.9	19.8	10.2	18.4	2.4	9.9	10.2	5.9	0.3
2005	0.2	4.7	19.2	19.8	9.0	18.8	2.3	9.6	10.2	5.9	0.1
UK											
1993	0.5	14.4	15.0	8.2	16.8	13.3	1.2	13.3	8.3	9.0	-
1996	0.5	14.6	15.5	8.2	16.2	14.4	1.1	12.3	8.3	8.3	0.5
1999	0.4	14.8	16.0	8.7	16.6	15.0	1.0	11.7	7.9	7.6	0.2
2002	0.3	14.0	12.7	12.2	14.7	16.2	1.1	9.8	7.5	11.4	0.2
2005	0.3	14.7	13.7	12.4	14.1	16.6	1.1	9.5	6.8	10.6	0.2

Note: ELFS data accessed through Eurostat New Cronos

Table 4: Logistic regressions of ‘specialist manager’ status on employer characteristics, 1975-2001

	<i>Year</i>					
	1975	1980	1985	1990	1996	2001
Industry						
<i>Extraction</i>	-0.43	-0.68	-0.39	-0.35	0.01	-0.19
<i>Manufacturing</i>	-0.18	-0.22	-0.07	-0.15	-0.17	-0.04
<i>Utilities</i>	0.53	0.42	0.21	0.12	-0.32	-0.27
<i>Construction</i>	-0.42	-0.48	-0.34	-0.29	-0.41	-0.41
<i>Hospitality</i>	-0.55	-1.26	-1.09	-0.86	-1.68	-1.29
<i>Transport & communication</i>	0.13	-0.04	-0.08	-0.05	-0.17	-0.14
<i>Financial services</i>	0.59	0.47	0.45	0.37	0.26	0.43
<i>Business services</i>	0.20	0.13	0.34	0.37	0.43	0.44
<i>Public administration</i>	0.08	0.10	0.09	0.31	-0.42	-0.56
<i>Education</i>	-0.72	-1.06	-1.09	-0.81	-1.40	-0.99
<i>Health</i>	-1.00	-0.67	-0.96	-0.65	-1.04	-1.03
<i>Personal services</i>	-0.15	-0.23	-0.43	-0.19	-0.33	0.01
Sector						
<i>Public sector</i>	-0.72	-0.76	-0.77	-1.13	-1.37	-1.24

Note: NES data

Note: dependent variable is dummy for membership of SOC 1990=12 (‘specialist managers’)

Note: industry classification is SIC 1992 1-digit level; omitted category is wholesale, retail, and repair

Note: organization size variable is only available for 1996 and 2001; its inclusion in the model barely disturbs industry and sector coefficients

Note: bold indicates significance at 10% level or better

Table 5: Shift-share analysis of occupation and industry, 1974-2004

Industry	<i>Within-industry employment share (%)</i>						
	1974	<i>Managers</i>			<i>Professional and technical</i>		
		2004	Δ		1974	2004	Δ
<i>Energy & extraction</i>	0.03	0.16	3.65	0.09	0.29	2.30	
<i>Engineering & vehicles</i>	0.05	0.19	2.61	0.09	0.20	1.22	
<i>Other mfg</i>	0.05	0.17	2.45	0.06	0.17	1.96	
<i>Construction</i>	0.05	0.19	2.56	0.08	0.14	0.77	
<i>Svcs</i>	0.08	0.13	0.71	0.22	0.31	0.43	
<i>Transport & comms</i>	0.05	0.13	1.41	0.08	0.13	0.59	
<i>Share of change explained by inter-industry shifts in employment</i>			7%				

Note: GHS data

Note: change in employment share is recorded as proportion of initial value

Note: change in distribution of establishment size explains 2% growth of overall managerial share in employment in period 1983-2004

Table 6: Logistic regressions of managerial status on individual and employer characteristics among full-time employees, 1975-2004

Variable	1975	1980	1985	Year 1991	1995	2001	2004
Gender							
Female	-1.03	-0.83	-0.61	-0.66	-0.60	-0.66	-0.33
Age category							
16 to 19	-1.28	-1.64	-2.08	-2.50	-2.23	-1.76	-
20 to 24	-1.01	-1.27	-0.96	-1.03	-0.96	-1.27	-1.05
25 to 29	-0.74	-0.31	-0.57	-0.17	-0.47	-0.54	-0.37
40 to 49	0.23	0.43	0.24	0.21	0.12	0.19	0.04
50 to 59	0.27	0.67	0.36	0.06	0.02	0.08	-0.02
60 or more	0.15	0.06	0.02	0.24	0.33	-0.36	-0.08
Job tenure							
1 to 4 years	0.38	0.23	0.13	0.06	0.33	0.24	0.40
5 or more years	0.60	0.50	0.03	0.15	0.31	0.46	0.66
Highest qualification							
Higher education, below degree	0.09	0.31	-0.05	-0.06	-0.35	-0.21	-0.24
A level or equivalent	0.09	0.25	0.15	0.02	-0.11	-0.24	-0.16
GCSE A-C or equivalent	-0.19	-0.02	-0.31	-0.14	-0.40	-0.55	-0.49
CSE below grade 1 or equivalent	-0.34	0.23	-0.13	-0.24	-0.36	-0.93	-1.06
Other/no qualification	-1.29	-1.06	-1.03	-0.80	-1.13	-1.30	-1.16
Industry							
Extraction	-1.02	-0.96	-0.59	-0.26	-0.41	0.17	-0.16
Engineering & vehicles	-1.10	-0.88	-0.49	-0.41	-0.37	-0.09	0.16
Other mfg	-0.43	-0.61	-0.30	-0.21	0.02	0.06	0.18
Construction	-0.88	-0.53	-0.68	0.13	-0.22	-0.24	0.16
Transport & comms	-0.66	-0.81	-0.28	-0.19	-0.16	-0.14	-0.11
Constant	-1.49	-1.77	-1.18	-1.25	-1.18	-1.25	-1.45

Note: GHS data

Note: bold indicates significance at 10% level or better

Table 7: Earnings regressions for full-time managers, 1975-2004

Variable	1975	1980	1985	Year 1991	1995	2001	2004
Gender							
Female	-0.42	-0.43	-0.36	-0.34	-0.29	-0.17	-0.30
Age category							
16 to 19	-0.71	-0.39	-0.93	-0.68	-0.51	-0.74	-
20 to 24	-0.54	-0.56	-0.27	-0.34	-0.46	-0.43	-0.59
25 to 29	-0.14	-0.20	-0.04	-0.14	-0.25	-0.35	-0.31
40 to 49	0.05	0.06	0.17	0.09	0.01	-0.05	0.09
50 to 59	0.04	0.06	0.17	0.06	0.09	0.04	0.03
60 or more	0.03	0.20	-0.01	-0.04	-0.09	-0.02	0.03
Job tenure							
1 to 4 years	0.07	0.11	-0.06	0.17	0.11	0.07	0.07
5 or more years	0.20	0.34	0.11	0.28	0.13	0.11	0.12
Highest qualification							
Higher education, below degree	-0.09	-0.22	-0.13	-0.26	-0.28	-0.19	-0.33
A level or equivalent	-0.22	-0.29	-0.23	-0.31	-0.32	-0.35	-0.31
GCSE A-C or equivalent	-0.24	-0.40	-0.32	-0.44	-0.48	-0.46	-0.42
CSE below grade 1 or equivalent	-0.31	-0.54	-0.44	-0.54	-0.47	-0.44	-0.65
Other/no qualification	-0.53	-0.83	-0.53	-0.62	-0.54	-0.70	-0.60
Industry							
Extraction	0.06	0.32	0.15	0.00	0.15	0.23	0.11
Engineering & vehicles	0.06	0.06	0.09	0.00	0.09	0.19	0.02
Other mfg	0.05	0.10	0.05	0.06	0.10	0.20	0.15
Construction	0.05	-0.18	0.08	-0.08	-0.03	0.23	0.17
Transport & comms	-0.14	0.14	0.22	0.07	0.16	0.24	0.13
Constant	6.04	6.62	6.13	6.32	6.37	6.47	6.53

Note: GHS data

Note: bold indicates significance at 10% level or better

Table 8: Establishment-level industrial relations arrangements, 1980-2004

Establishment percentages						
Variable	1980	1984	<i>Year</i> 1990	1998	2004	
<i>Union density</i>						
100%	16	11	7	2	2	
90%-99%	11	11	9	5	4	
75%-89%	13	13	10	7	7	
50%-74%	13	16	18	14	11	
25%-49%	8	11	10	11	11	
1%-24%	9	11	10	15	14	
Zero	27	27	36	46	50	
<i>Recognition for collective bargaining</i>	64	66	53	42	38	
<i>Collective bargaining coverage</i>						
100%	-	36	18	17	27	
80%-99%	-	13	13	7	7	
60%-79%	-	9	8	6	3	
40%-59%	-	3	4	5	2	
20%-39%	-	3	4	3	1	
1%-19%	-	1	4	3	1	
Zero	-	34	48	59	60	
<i>Joint consultative committee</i>	34	34	28	29	24	

Note: WERS data

Table 9: Composition of establishment-level workforces, 1980-2004

Mean percentages of establishment employment					
Variable	1980	1984	Year 1990	1998	2004
<i>Occupations</i>					
<i>Managers</i>	6.7	6.9	7.3	9.0	10.1
<i>Professional and technical employees</i>	17.9	20.7	20.1	20.0	20.6
<i>Other non-manual employees</i>	22.0	24.3	23.9	25.8	26.7
<i>Skilled manual employees</i>	16.3	14.1	14.6	10.0	7.2
<i>Other manual employees</i>	36.5	33.5	33.5	35.0	35.1
<i>Other dimensions</i>					
<i>Female employees</i>	44.3	45.1	47.3	51.2	50.2
<i>Part-time employees</i>	20.2	19.5	21.4	28.4	28.6

Note: WERS data

Table 10: Management communication practices, 1980-2004

Establishment percentages					
Variable	1980	1984	<i>Year</i> 1990	1998	2004
<i>Scope of information provision</i>					
<i>No information provided</i>	-	17	19	16	16
<i>Low</i>	-	29	23	19	20
<i>Medium</i>	-	35	29	29	31
<i>High</i>	-	20	28	36	33
<i>Systematic use of management chain</i>	-	62	60	60	74
<i>Use of briefing groups</i>	-	36	48	53	86

Note: WERS data

Table 11: Regressions of establishment-level managerial share of employment on establishment characteristics, 1980-2004 – simple form

Variable	Year					Pooled
	1980	1984	1990	1998	2004	
Industry						
<i>Manufacturing</i>			Omitted category			
<i>Energy</i>	0.001	-0.024	-0.025	0.006	-0.016	-0.012
<i>Construction</i>	0.010	-0.027	-0.013	-0.005	0.003	-0.005
<i>Commerce and leisure</i>	0.011	0.002	0.015	0.037	-0.004	0.013
<i>Transport and communications</i>	0.011	-0.017	-0.015	0.023	-0.031	-0.007
<i>Financial and business services</i>	0.014	0.014	0.021	0.016	0.005	0.015
<i>Other services</i>	0.016	0.008	0.026	0.011	-0.012	0.009
Union density						
<i>Zero</i>			Omitted category			
<i>1%-24%</i>	-0.005	-0.004	0.004	0.000	0.006	0.000
<i>25%-49%</i>	0.000	-0.001	0.008	-0.001	-0.018	-0.004
<i>50%-74%</i>	0.000	-0.006	-0.002	-0.010	-0.017	-0.010
<i>75%-89%</i>	-0.003	0.002	0.001	-0.011	-0.023	-0.008
<i>90%-99%</i>	-0.007	-0.009	-0.004	-0.034	-0.025	-0.150
<i>100%</i>	-0.008	-0.025	0.011	-0.024	-0.003	-0.014
Joint consultative committee	0.009	0.010	0.005	0.008	0.012	0.009
Year dummies						
<i>1980</i>			Omitted category			
<i>1984</i>	-	-	-	-	-	-0.004
<i>1990</i>	-	-	-	-	-	0.000
<i>1998</i>	-	-	-	-	-	0.018
<i>2004</i>	-	-	-	-	-	0.027
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Constant	0.041	0.0844	0.073	0.071	0.095	0.065
<i>N</i>	1865	1841	1757	1889	1626	8978
<i>R-squared</i>	0.18	0.23	0.23	0.25	0.25	0.21
<i>F-statistic</i>	11.21	37.57	7.93	8.31	6.69	23.77

Note: WERS data

Note: controls include establishment size (employment), single/multi-establishment organization, public/private sector, head office status, and female and part-time establishment employment shares

Note: bold indicates significance at 10% level or better

Table 12: Regressions of establishment-level managerial share of employment on establishment characteristics, 1984-2004 – rich form

Variable	Year			Pooled
	1984	1998	2004	
Industry				
<i>Manufacturing</i>		Omitted category		
<i>Energy</i>	-0.029	0.006	-0.023	-0.018
<i>Construction</i>	-0.025	-0.006	0.001	-0.005
<i>Commerce and leisure</i>	-0.002	0.045	-0.017	0.010
<i>Transport and communications</i>	-0.019	0.018	-0.043	-0.017
<i>Financial and business services</i>	-0.003	0.018	-0.010	0.002
<i>Other services</i>	-0.002	0.016	-0.017	0.000
Union density				
<i>Zero</i>		Omitted category		
<i>1%-24%</i>	-0.006	-0.012	0.005	-0.005
<i>25%-49%</i>	-0.005	-0.003	-0.023	-0.013
<i>50%-74%</i>	-0.010	-0.012	-0.021	-0.018
<i>75%-89%</i>	0.001	-0.013	-0.029	-0.015
<i>90%-99%</i>	-0.016	-0.032	-0.038	-0.029
<i>100%</i>	-0.033	-0.026	-0.011	-0.032
Joint consultative committee	0.010	0.009	0.009	0.010
Scope of information provision				
<i>No information provided</i>		Omitted category		
<i>Low</i>	0.003	-0.006	0.025	0.008
<i>Medium</i>	0.004	-0.001	0.029	0.013
<i>High</i>	0.003	-0.011	0.042	0.015
Systematic use of management chain	0.008	0.004	0.001	0.004
Establishment age				
<i>Less than 5 years</i>		Omitted category		
<i>5-9 years</i>	0.008	-0.012	-0.034	-0.016
<i>10-24 years</i>	-0.001	-0.022	-0.037	-0.024
<i>25 years or more</i>	-0.012	-0.023	-0.029	-0.024
Year dummies				
<i>1984</i>		Omitted category		
<i>1998</i>	-	-	-	0.016
<i>2004</i>	-	-	-	0.025
Controls	Yes	Yes	Yes	Yes
Constant	0.107	0.084	0.135	0.105

<i>N</i>	1707	1622	1608	4937
<i>R-squared</i>	0.27	0.30	0.30	0.25
<i>F-statistic</i>	33.65	6.68	5.62	11.16

Note: WERS data

Note: controls include establishment size (employment), single/multi-establishment organization, public/private sector, head office status, and female, part-time, professional/technical, and skilled manual establishment employment shares

Note: bold indicates significance at 10% level or better

Figures

Figure 1: Schematic illustrating inference of rising demand for managers

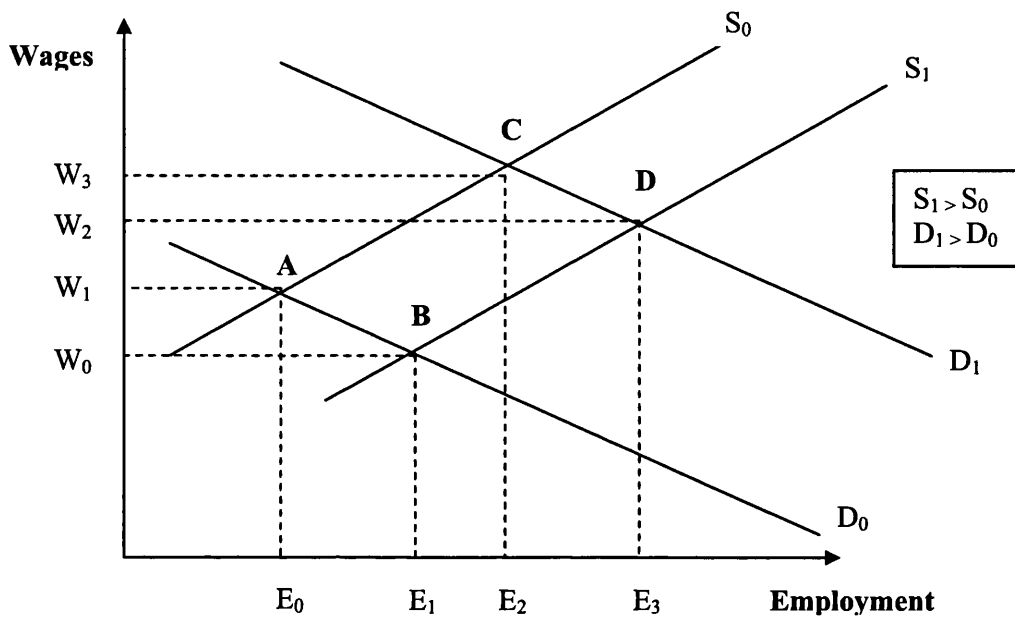
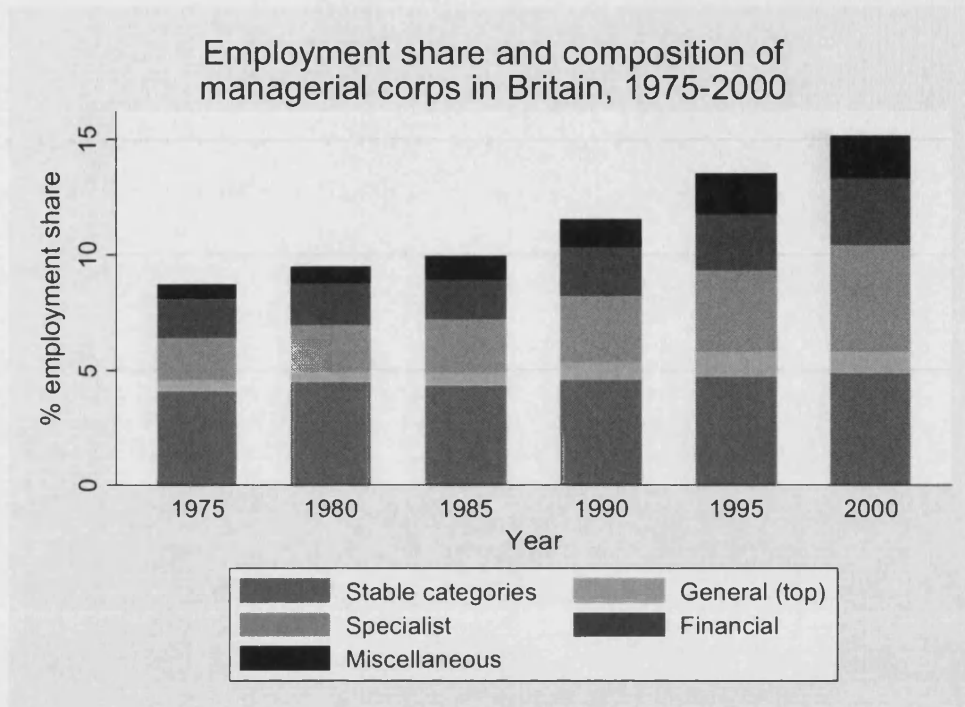


Figure 2: Employment shares of British managers, 1975-2000



Note: NES data

Figure 3: Wage bill shares of British managers, 1975-2000

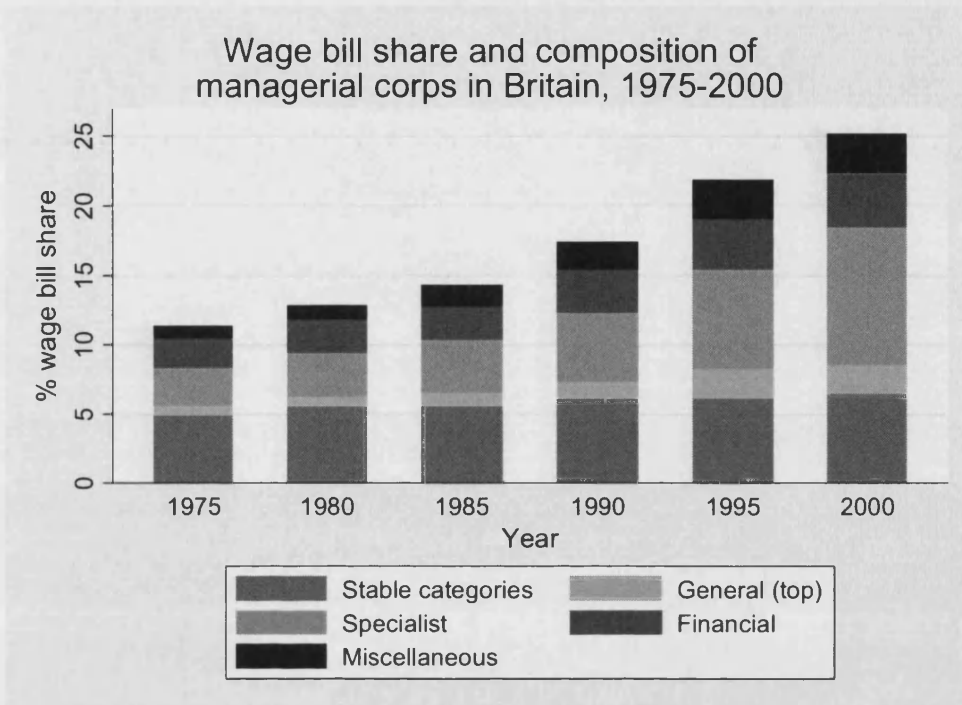
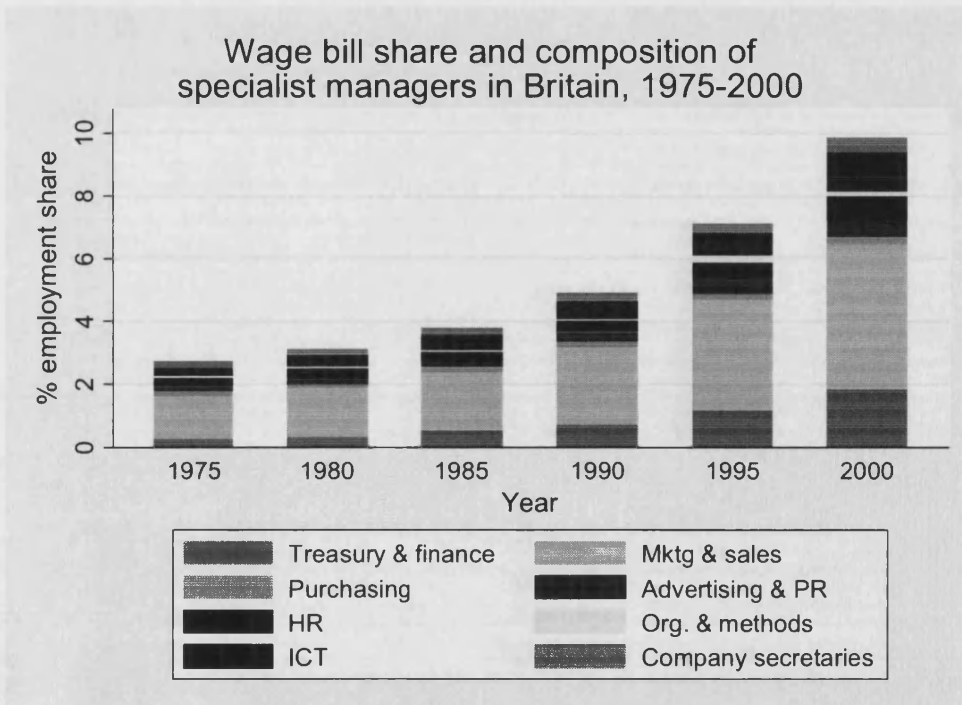


Figure 4: Wage bill shares of British specialist managers, 1975-2000



Chapter 5

Concluding Remarks

The principal subject of this thesis is the issue of rising top-tier pay inequality in Britain in recent years. This issue is noteworthy because its expansion during a time of relatively strong and consistent economic growth in Britain – i.e., from the mid-1990s into the new millennium – marks a qualitative break with similar periods in the postwar past, during which pay inequality tended to remain unchanged or to narrow. Furthermore, the issue is important because it contributes strongly to a number of other questions of inequality growth or stratification (e.g., wealth, income, life chances) that are currently the subject of intense academic and public debate with regard to the direction in which the country is developing.

The thesis has explored the issue in question from a number of perspectives: through a comparative lens in relation to France and Germany; from a micro-political point of view that focuses on the influence of organizational governance arrangements; and historically, with reference to theoretical ideas about ‘production regimes’ and societal effects upon them. Theoretically and methodologically, therefore, the thesis has covered a broad expanse of ground. In this section I wish to reiterate the structure that underpins my wide-ranging approach to the subject matter, and bring to the fore the key findings of the thesis. I begin by presenting the argument of the thesis in résumé, and then discussing the findings of each constituent chapter in greater detail, along the way clarifying their contributions to the relevant research literature and dealing with a number of likely lines of contention. Having completed this discussion, I bring the thesis to a close by reflecting upon some of the wider themes emerging from my analyses, including avenues for future research.

In relation to the question of rising top-tier pay inequality in Britain, the thesis initially finds that the top pay trend is clearly visible in the data and is of a sizeable magnitude,

and that the prevailing explanations (SBTC and certain labour market institutions) for the growth of broad-based pay inequality previously observed in Britain can do little to explain the top pay trend. As a result, I look at the data from the viewpoint of a 'job' analysis, and discover that the trend is in large part driven by the evolution of pay for senior managerial jobs across the economy. I use this finding as input to my choice of alternative explanations for the trend that I may test. Chapters Three and Four respectively analyse non-market-based and market-based explanations for the evolution of British top-tier pay inequality. The first of these examines the influence of corporate or organizational governance factors on relative labour demand patterns as a means of probing top-tier pay inequality outcomes. It concludes that factors of this kind are of limited importance in explaining the trend in Britain (and France). The second approach, however, supports the contention that British organizations have in recent decades reorganized in ways that have led to increased relative demand for managers, and that this shift in relative demand is the key to understanding the observed top-tier pay inequality trend.

Chapter two's contribution to the overall argument of the thesis lies principally in establishing the facts, assessing the existing explanations of pay inequality growth, and identifying plausible alternative directions of research. In doing so, it lays the foundation for the chapters that follow. The chapter focuses on the apparent top pay bias in the growth of British pay inequality that was noted in a number of contributions to the literature that used data relating to the 1990s. It approaches this subject from two main directions, first clarifying and confirming the existence of such a trend, and then testing the ability of a number of conceptual frameworks to explain it. These frameworks include the prevailing explanations in the literature for broad-based pay inequality growth – i.e., SBTC and change in labour market institutions – and my preferred alternative approach of 'job' analysis.

In relation to the first research angle, the chapter's main finding is that there has been a clear and non-negligible top pay bias in British pay inequality growth that is visible not only in the data for the 1990s and 2000s, but also in the data for the decade and a half

before 1990. Therefore, it may be concluded that the top-tier trend is as old as the overall trend towards greater pay inequality in the British labour market. In comparative perspective, the British top pay trend is not typical. Indeed, examination of French and German data shows that there is no common trend with regard to top pay across countries. France developed something of a top-tier pay inequality bias in the 1990s, but there is no evidence of any similar trend in Germany up to the end of the data series examined here (i.e., till 2002). These findings imply that country-specific factors contribute strongly to the determination of top pay distributional outcomes, and provide support for the analyses conducted in Chapters three and four of the thesis.

Turning to possible explanations of the British trend, I find that the prevailing explanations for the broad-based growth in pay inequality – i.e., standard SBTC and change in certain labour market institutions – cannot explain differences in top-tier pay inequality developments in the three countries. Consequently, I apply a job analysis framework to the data to discover that, in Britain, top-tier pay inequality growth is closely linked to managerial jobs. To a lesser extent, this is also true of France. The evidence, therefore, supports the inference that there has occurred in Britain a consistent shift in relative labour demand towards the managerial skills and characteristics associated with the incumbents of senior general and specialist managerial roles. Furthermore, the economy-wide nature of the trend implies that it is closely linked to changes within organizations, e.g., the restructuring of production systems, in response to some stimulus.

Chapter three takes on the task of exploring the plausible non-market explanation for the growth of top-tier pay inequality that is identified in Chapter two, i.e., that of organizational governance factors. In doing so, it draws on ideas developed in the research literature on ‘comparative capitalism’ – chiefly by political scientists and industrial relations scholars – to examine the impact of organizational governance arrangements upon relative demand patterns (across managerial and non-managerial employee groups), and thereby upon the top end of the distribution of pay.

The chapter initially presents evidence that Britain and France differ in relation to the distribution of governance types among companies operating in each country. This finding supports the possibility that the ‘typical’ organization in each country will respond differently to a given set of external conditions, and that these different responses may include decisions that affect the profile of relative labour demand at the level of the organization. However, direct modelling of the impact of the array of organizational governance on labour demand patterns finds only limited evidence to support the idea that governance factors can ultimately influence (top) pay inequality outcomes, either in Britain or in France. Moreover, even in Britain, where the influence of governance factors on the profile of organization-level labour demand can at least be discerned, the peripheral evidence indicates clearly that the magnitude of the impact of this relationship on top-tier pay inequality is small. Ultimately, therefore, organizational governance factors contribute little to the explanation of the target issue of the thesis. In this way, the chapter rules out one possible explanation of top-tier pay inequality growth and opens the way for the examination of another in Chapter four.

Chapter four seeks to explain the rise in British top-tier pay inequality with reference to a market-based approach. It begins from the hypothesis that new technologies have acted as complements with managerial skills, but examines the possibility that this complementarity effect only occurs where managers occupy a particular role with regard to the organization of production. This approach is used as it provides a means of reconciling the ‘universal’ technology-led hypothesis with the observation that many countries have not experienced a top-tier growth in pay inequality of the type observed in Britain. Building on the ‘societal effects’ insights of the Aix Group, I argue that the key variable with regard to the role of management is the degree of its ‘centrality’ to the production process, with this concept being defined in terms of skills, industrial relations, and work organization systems. The chapter, therefore, seeks evidence that British managers have become more central to production during the period in which their relative pay has increased.

In its initial findings, the chapter presents strong evidence to support the inference that Britain has experienced a shift in relative labour demand towards managers, and that this demand shift has produced a manager-led rise in overall pay inequality at the top of the distribution. Subsequently, it demonstrates that, in the last three decades, managers have become much more central to production in British-based organizations along the dimensions highlighted by the societal effects approach. In the light of the expansion of ICT technologies into the workplace and Bresnahan's (1999) hypothesis about the impact of these on managerial skills, I interpret these results to mean that British organizations now value managers much more highly in relative terms than they did in the past, and that they have reorganized in ways that have contributed strongly to this trend. I conclude, therefore, that the observed rise in British top-tier pay inequality has occurred largely on back of this shift in relative labour demand towards managers.

A number of possible lines of contention exist in response to these conclusions. For instance, the question arises as to the possible influence of globalization – defined in terms of increased trade – on the distribution of pay in developed countries. Could it not be the case that the integration of China and other large developing economies into the world economy over the last two decades has created a labour supply shock capable of changing the distribution of pay in the countries with which they trade intensively, Britain included? Certainly, this is a possibility, but there are three good reasons for arguing that this development has had little impact on top pay in countries like Britain. First, the research conducted on this subject tends to conclude that the impact of increased trade on developed country pay distributions is minimal (for surveys of the literature, see Burtless 1995; Freeman 1995).³⁶ Second, the supply shock of greater trade with developing countries is unlikely to impact top pay in the developed world, as high-skill jobs have largely not yet been affected by developing world competition. Third, although I do not test for it directly in this thesis, it seems very unlikely that the impact of

³⁶ Much of the extant literature on this issue uses data for the 1980s and 1990s. It remains possible that conclusions based on data from this period are no longer valid in the new century, given the rapidity of ongoing economic change – see, for example, the shift in Richard Freeman's opinion on the subject between 1995 and 2005 as he moves from concluding that your wages are not 'set in Beijing' (Freeman 1995) to arguing that developed country workers face considerable challenges as a result of the 'doubling of the global workforce' (Freeman 2005).

rising global trade should affect any of the three countries studied in Chapter two to greater extent than the others, as all are relatively open economies operating under common trade regime. However, top pay trends are highly differentiated from one country to the next, suggesting that a common factor such as trade is not strongly at work. Notably, Germany is, of the three countries, perhaps the most exposed to trade competition – having a relatively large manufacturing sector and being the world’s largest exporter – yet it is the least impacted by top-tier pay inequality growth.

Observers who take a historical perspective might contend that the growth of top-tier pay inequality in Britain – and perhaps even of broad-based pay inequality – is due to the reflexive ‘unwinding’ of forces built up by the policies of pay compression pursued there in the 1960s and 1970s. However, the evidence for the building up any such forces is relatively weak. First, the degree of pay compression that took place during those decades was small in magnitude compared to the scale of dispersion that followed in the 1980s and 1990s (Schmitt 1995). In fact, the distribution of pay in Britain was relatively stable during the period between mid-century and the mid-1970s. Second, the institutional mechanisms of collective pay setting, through which attempts to compress pay were made, have never had a direct impact on top pay in Britain. Hence, it is not plausible that the movement towards pay compression in earlier decades could have created forces to be unwound in the area of top pay.

A more political counter-argument in relation to the conclusions of this thesis would be that the relatively high growth of managerial pay might be due to crude self-dealing – *quis custodiet ipsos custodes?* There is strong evidence, however, that this kind of process is not a key factor in determining management pay, and that managers are fundamentally paid in relation to their performance (see, e.g., Ogden and Watson 2004; Tzioumis 2005). Furthermore, research of this kind tends to focus on the most senior executives, whom it might plausibly be argued have the greatest opportunity for self-dealing. This finding is perhaps not surprising, though, as, even in the most senior ranks, the processes and institutions (especially the Remuneration Committee of the Board)

through which pay is determined provide no overt means by which individuals may influence their own pay other than through (market) negotiation.

Turning towards closing remarks, I would note that this thesis has ranged along a number of themes in the course of its exploration, of which two in particular stand out – one empirical, and one theoretical or methodological. First, the thesis has repeatedly encountered evidence that the development of the British labour market has been distinctive when compared with the experience of similar European countries. In this respect, the pay inequality outcomes noted here stand as a particular case within a broader general whole. Second, the findings of the thesis are supportive of the idea that a broad social science approach to the investigation of ‘economic’ phenomena can yield interesting and informative conclusions. By this I mean that the combination of the econometric approach to empirical measurement, the fundamental insights of the theoretical framework of economics, and the insights of fields of the social sciences beyond economics (e.g., industrial relations, political science) can yield more informative conclusions than any one can reach alone. This is especially true in relation to the question of the importance of institutional and other nationally or otherwise locally specific factors in the determination of economic outcomes.

In taking this tack, this thesis has opened several pathways for further investigation in the future, and has indicated that interdisciplinary approaches such as the one taken here may provide a fruitful source of innovative ideas and analyses to study of labour market phenomena. In this last respect, I hope that it is at least consistent with the traditions of research established by the Industrial Relations scholars who have gone before me.

Bibliography

- Abraham, K. G. and S. N. Houseman (1995). Earnings Inequality in Germany. Differences and Changes in Wage Structures. R. B. Freeman and L. F. Katz. Chicago, University of Chicago Press: 371-403.
- Acemoglu, D. (2002). "Technical Change, Inequality, and the Labor Market." Journal of Economic Literature 40(1): 7-72.
- Acemoglu, D. (2003). "Cross-Country Inequality Trends." The Economic Journal 113(485): F121-F149.
- Aguilera, R. V. and G. Jackson (2003). "The Cross-National Diversity of Corporate Governance: Dimensions and Determinants." Academy of Management Review 28(3): 447-465.
- Akrill, M. (1988). "British Managers and the British Economy, 1870s to the 1980s." Oxford Review of Economic Policy 4(1): 59-73.
- Allen, F. (1993). Stock Markets and Resource Allocation. Capital Markets and Financial Intermediation. C. Mayer and X. Vives. Cambridge, Cambridge University Press.
- Atkinson, A. B. (1999a). "The Distribution of Income in the UK and OECD Countries in the Twentieth Century." Oxford Review of Economic Policy 15(4): 56-75.
- Atkinson, A. B. (1999b). Is Rising Income Inequality Inevitable? A Critique of the Transatlantic Consensus. WIDER Annual Lectures 3. New York.
- Autor, D. H., L. F. Katz, et al. (2005). Trends in U.S. Wage Inequality: Re-Assessing the Revisionists. NBER Working Paper. Cambridge, MA.
- Autor, D. H., F. Levy, et al. (2003). "The Skill Content of Recent Technological Change: An Empirical Exploration." Quarterly Journal of Economics 118(4): 1279-1333.

- Barley, S. R. (1988). "Technology, Power, and the Social Organization of Work: Towards a Pragmatic Theory of Skilling and Deskillling." Research in the Sociology of Organizations 6: 33-80.
- Barreau, J. and D. Brochard (2003). Les politiques de rémunération des entreprises: écarts entre pratiques et discours. Travail et Emploi: 45-60.
- Beerten, R., L. Rainford, et al. (2001). "Changing to Standard Occupational Classification (SOC) 2000 - dual coding on the Labour Force Survey." Labour Market Trends(July 2001).
- Berle, A. A. and G. C. Means (1932). The Modern Corporation and Private Property. New York, Macmillan.
- Blair, M. M. and M. J. Roe, Eds. (1999). Employees and Corporate Governance. Washington, DC, Brookings Institution Press.
- Blanchflower, D. G. (2000). Self-Employment in OECD Countries. NBER Working Paper. Cambridge, MA.
- Blanchflower, D. G. and A. Bryson (2004). The Union Wage Premium in the US and the UK. CEP Discussion Paper. London.
- Blanden, J., A. Goodman, et al. (2002). Changes in Intergenerational Mobility in Britain. CEP Discussion Paper. London.
- Blau, F. D. and L. M. Kahn (1996). "International Differences in Male Wage Inequality: Institutions versus Market Forces." The Journal of Political Economy 104(4): 791-837.
- Blau, F. D. and L. M. Kahn (2002). At Home and Abroad: U.S. Labor-Market Performance in International Perspective. New York, Russell Sage Foundation.

- Bournois, F. and Y.-F. Livian (1997). Managers, 'Cadres', 'Leitende Angestellte': Some Landmarks about Managerial Group Titles and Definitions. Middle Managers in Europe. Y.-F. Livian and J. G. Burgoyne. London, Routledge: 25-38.
- Bresnahan, T. F. (1999). "Computerisation and Wage Dispersion: An Analytical Reinterpretation." Economic Journal **109**: F390-F415.
- Bresnahan, T. F., E. Brynjolfsson, et al. (2002). "Information Technology, Workplace Organization, and the Demand for Skilled Labor: Firm-Level Evidence." Quarterly Journal of Economics **117**(1): 339-376.
- Brown, W., P. Marginson, et al. (2001). The Management of Pay as the Influence of Collective Bargaining Diminishes. Centre for Business Research Working Paper. Cambridge.
- Bryson, A. (2002). The Union Membership Wage Premium: An Analysis Using Propensity Score Matching. CEP Discussion Paper. London.
- Burtless, G. (1995). "International Trade and the Rise in Earnings Inequality." Journal of Economic Literature **33**(2): 800-816.
- Card, D. and J. DiNardo (2002). "Skill-Biased Technological Change and Rising Wage Inequality: Some Problems and Puzzles." Journal of Labour Economics **20**(4): 733-783.
- Card, D. and R. B. Freeman (2002). What Have Two Decades of British Economic Reform Delivered? NBER Working Paper. Cambridge, MA.
- Card, D. and T. Lemieux (2001). "Can Falling Supply Explain the Rising Return to College for Younger Men? A Cohort-Based Analysis." Quarterly Journal of Economics **116**(2): 705-746.
- Caroli, E. and J. Van Reenen (2001). "Skill-Biased Organizational Change? Evidence from a Panel of British and French Establishments." Quarterly Journal of Economics **116**(4): 1449-1492.

- Chandler, A. D. (1977). The Visible Hand: The Managerial Revolution in American Business. Cambridge, MA, Harvard University Press.
- Chennells, L. and J. Van Reenen (1999). Has Technology Hurt Less Skilled Workers? A Survey of the Micro-Econometric Evidence. IFS Working Paper. London.
- Chevalier, A., G. Conlon, et al. (2002). The Returns to Higher Education Teaching. CEE Special Report. London.
- Chhaochharia, V. and Y. Grinstein (2006). CEO Compensation and Board Oversight.
- Coates, D. (2002). The New Political Economy of Post-War Britain. British Politics Today. C. Hay. Cambridge, Polity Press: 157-184.
- Crockett, G. and P. Elias (1984). "British Managers: A Study of Their Education, Training, Mobility and Earnings." British Journal of Industrial Relations **22**(1): 34-46.
- De Jong, H. W. (1995). "European Capitalism: Between Freedom and Social Justice." Review of Industrial Organization **10**: 399-419.
- Dickens, R. and A. Manning (2002). Has the National Minimum Wage Reduced UK Wage Inequality? CEP Discussion Paper. London.
- DiNardo, J., K. F. Hallock, et al. (2000). Unions and the Labour Market for Managers. CEPR Discussion Paper. London.
- Donnelly, S., A. Gamble, et al. (2000). The Public Interest and the Company in Britain and Germany. London, Anglo-German Foundation for the Study of Industrial Society.
- Dopson, S., J. Neumann, et al. (1997). The Changing Psychological Contracts of Middle Managers in Great Britain: Effects and Reactions. Middle Managers in Europe. Y.-F. Livian and J. G. Burgoyne. London, Routledge: 173-193.

- Dore, R. (2000). Stock Market Capitalism, Welfare Capitalism: Japan and Germany versus the Anglo-Saxons. Oxford, Oxford University Press.
- Dunlop, J. (1944). Wage Determination under Trade Unions. New York, Macmillan.
- Elias, P. (1995). Managers and Administrators. Occupational Studies: Part 1 - Managerial, Professional and Technical Occupations. P. Elias, R. Wilson and A. Green. Coventry, Institute for Employment Research: 1-25.
- Elias, P. and A. McKnight (2001). "Skill Measurement in Official Statistics: Recent Developments in the UK and the Rest of Europe." Oxford Economic Papers 3: 508-540.
- Elias, P. and K. Purcell (2004). SOC (HE): A Classification of Occupations for Studying the Graduate Labour Market.
- Finegold, D. and D. Soskice (1988). "The Failure of Training in Britain: Analysis and Prescription." Oxford Review of Economic Policy 4(3): 21-53.
- Fitzenberger, B., R. Hujer, et al. (2001). "Testing for Uniform Wage Trends in West-Germany: A Cohort Analysis Using Quantile Regressions for Censored Data." Empirical Economics 26(1): 41-86.
- Freeman, R. B. (1980). "Unionism and the Dispersion of Wages." Industrial and Labor Relations Review 34(1): 3-23.
- Freeman, R. B. (1995). "Are Your Wages Set in Beijing?" The Journal of Economic Perspectives 9(3): 15-32.
- Freeman, R. B. (2005). What Really Ails Europe (and America): The Doubling of the Global Workforce. The Globalist. Washington, DC.
- Freeman, R. B. and L. F. Katz, Eds. (1995). Differences and Changes in Wage Structures. NBER Comparative Labor Markets Series. Chicago, University of Chicago Press.

- Freeman, R. B. and R. Schettkat (2001). "Skill Compression, Wage Differentials, and Employment: Germany vs. the US." Oxford Economic Papers 53: 582-603.
- Gallie, D., A. Felstead, et al. (2004). "Changing Patterns of Task Discretion in Britain." Work, Employment and Society 18(2): 243-266.
- Gernandt, J. and F. Pfeiffer (2006). Rising Wage Inequality in Germany. ZEW Discussion Paper. Mannheim.
- Godechot, O. and C. Fleury (2005). "Les nouvelles inégalités dans la banque." Connaissance de l'emploi(17): 1-4.
- Goos, M. and A. Manning (2003). Lousy and Lovely Jobs: The Rising Polarization of Work in Britain. CEP Discussion Paper. London.
- Gosling, A. and T. Lemieux (2001). Labour Market Reforms and Changes in Wage Inequality in the United Kingdom and the United States. NBER Working Paper. Cambridge, MA.
- Gosling, A., S. Machin, et al. (1996). The Changing Distribution of Male Wages in the UK. CEP Discussion Paper. London.
- Gospel, H. and A. Pendleton (2003). "Finance, Corporate Governance and the Management of Labour: A Conceptual and Comparative Analysis." British Journal of Industrial Relations 41(3): 557-582.
- Gospel, H. and A. Pendleton (2005). Corporate Governance and Labour Management: An International Comparison. Corporate Governance and Labour Management: An International Comparison. H. Gospel and A. Pendleton. Oxford, Oxford University Press: 1-32.
- Gottschalk, P. and M. Joyce (1998). "Cross-National Differences in the Rise in Earnings Inequality: Market and Institutional Factors." The Review of Economics and Statistics 80(4): 489-502.

- Gottschalk, P. and T. M. Smeeding (1997). "Cross-National Comparisons of Earnings and Income Inequality." Journal of Economic Literature **35**: 633-687.
- Grandori, A. (2004). Reframing Corporate Governance: Behavioral Assumptions, Governance Mechanisms, and Institutional Dynamics. Corporate Governance and Firm Organization: Microfoundations and Structural Forms. A. Grandori. Oxford, Oxford University Press: 1-27.
- Gregory, M., R. Jukes, et al. (1998). Mapper98, version 1.4. Oxford, Institute of Economics and Statistics.
- Grey, C. (1999). "'We Are All Managers Now'; 'We Always Were': On the Development and Demise of Management." Journal of Management Studies **36**(5): 561-585.
- Guy, F. (2005). "Earnings Distribution, Corporate Governance and CEO Pay." International Review of Applied Economics **19**(1): 51-65.
- Hall, P. A. and D. Soskice (2001a). An Introduction to Varieties of Capitalism. Varieties of Capitalism: The Institutional Foundations of Comparative Advantage. P. A. Hall and D. Soskice. Oxford, Oxford University Press: 1-68.
- Hall, P. A. and D. Soskice, Eds. (2001b). Varieties of Capitalism: The Institutional Foundations of Comparative Advantage. Oxford, Oxford University Press.
- Hannah, L. (1980). Visible and Invisible Hands in Great Britain. Managerial Hierarchies: Comparative Perspectives on the Rise of the Modern Industrial Enterprise. A. D. Chandler and H. Daems. Cambridge, MA, Harvard University Press: 41-76.
- Hay Group (2004). Top Executive Compensation in Europe 2004.
- Hicks, J. R. (1932). The Theory of Wages. London, Macmillan.
- Höpner, M. (2005). "What Connects Industrial Relations and Corporate Governance? Explaining Institutional Complementarity." Socio-Economic Review **3**: 331-358.

- Howell, C. (1999). Unforgiven: British Trade Unionism in Crisis. The Brave New World of European Labor: European Trade Unions at the Millennium. A. Martin and G. Ross. New York, Berghahn: 26-74.
- Howell, C. (2005). Trade Unions and the State: The Construction of Industrial Relations Institutions in Britain, 1890-2000. Princeton, NJ, Princeton University Press.
- Howell, D. R. (2002). "Increasing Earnings Inequality and Unemployment in Developed Countries: Markets, Institutions, and the "Unified Theory"." Politics and Society 30(2): 193-243.
- Jackson, G. (2005). Towards a Comparative Perspective on Corporate Governance and Labour Management: Enterprise Coalitions and National Trajectories. Corporate Governance and Labour Management: An International Comparison. H. Gospel and A. Pendleton. Oxford, Oxford University Press: 284-309.
- Jacoby, S. M. (1985). Employing Bureaucracy: Managers, Unions, and the Transformation of Work in American Industry, 1900-1945. New York, Columbia University Press.
- Jacoby, S. M. (1991). American Exceptionalism Revisited: The Importance of Management. Masters to Managers: Historical and Comparative Perspectives on American Employers. S. M. Jacoby. New York, Columbia University Press.
- Jacoby, S. M. (2001). "Employee Representation and Corporate Governance: A Missing Link." University of Pennsylvania Journal of Labor and Employment Law 3(3): 449-489.
- Jacoby, S. M. (2004). The Embedded Corporation. Princeton, Princeton University Press.
- Johnson, G. E. (1997). "Changes in Earnings Inequality: The Role of Demand Shifts." The Journal of Economic Perspectives 11(2): 41-54.
- Jürgens, U., K. Naumann, et al. (2000). "Shareholder Value in an Adverse Environment: The German Case." Economy and Society 29(1): 54-79.

- Katz, L. F., G. W. Loveman, et al. (1995). A Comparison of Changes in the Structure of Wages in Four OECD Countries. Differences and Changes in Wage Structures. R. B. Freeman and L. F. Katz. Chicago, University of Chicago Press: 25-66.
- Katz, R. L. (1974). "Skills of an Effective Administrator." Harvard Business Review **52**(5): 90-102.
- Kersley, B., C. Alpin, et al. (2006). Inside the Workplace: Findings from the 2004 Workplace Employment Relations Survey. London, Routledge.
- Kohn, K. (2006). Rising Wage Dispersion, After All! The German Wage Structure at the Turn of the Century. ZEW Discussion Paper. Mannheim.
- Krippner, G. R. (2005). "The Financialization of the American Economy." Socio-Economic Review **3**: 173-208.
- Krueger, A. (1993). "How Computers Have Changed the Wage Structure: Evidence from Microdata, 1984-1989." Quarterly Journal of Economics **108**: 33-60.
- Lane, C. (1989). Management and Labour in Europe: The Industrial Enterprise in Germany, Britain and France. Aldershot, Edward Elgar.
- Lasswell, H. D. (1936). "Politics: Who Gets What, When, How." American Political Science Review **30**(6): 1174-1176.
- Lemieux, T. (2006). Post-Secondary Education and Increasing Wage Inequality. NBER Working Paper. Cambridge, MA.
- Lemieux, T. (2007). The Changing Nature of Wage Inequality. NBER Working Paper. Cambridge, MA.
- Leslie, D. and Y. Pu (1996). "What Caused Rising Earnings Inequality in Britain? Evidence from Time Series, 1970-1993." British Journal of Industrial Relations **34**(1): 111-130.

- Levy, F. and R. J. Murnane (1992). "U.S. Earnings Levels and Earnings Inequality: A Review of Recent Trends and Proposed Explanations." Journal of Economic Literature **30**: 1333-1381.
- Lhommeau, B. and V. Rémy (2005). Allégements de cotisations sociales et coûts sectoriels.
- Machin, S. (1996). "Wage Inequality in the UK." Oxford Review of Economic Policy **12**(1): 47-64.
- Machin, S. (1997). "The Decline of Labour Market Institutions and the Rise in Wage Inequality in Britain." European Economic Review **41**(3-5): 647-657.
- Machin, S. (1998). "Recent Shifts in Wage Inequality and the Wage Returns to Education in Britain." National Institute Economic Review **166**: 87-95.
- Machin, S. (2000). Union Decline in Britain. CEP Discussion Paper. London.
- Machin, S. and A. Vignoles (2006). Education Policy in the UK. CEE Discussion Paper. London.
- March, J. G. (1962). "The Business Firm as Political Coalition." The Journal of Politics **24**(4): 662-678.
- Marsden, D. (1986). The End of Economic Man? Custom and Competition in Labour Markets. Brighton, Wheatsheaf.
- Marsden, D. (1999). A Theory of Employment Systems: Micro-foundations of Diversity. Oxford, Oxford University Press.
- Maurice, M., F. Sellier, et al. (1982). Politique d'Éducation et Organisation Industrielle en France et en Allemagne: Essai d'analyse sociétale. Paris, Presses Universitaires de France.

- Maurice, M., F. Sellier, et al. (1984). The Search for a Societal Effect in the Production of Company Hierarchy: A Comparison of France and Germany. Internal Labor Markets. P. Osterman. Cambridge, MA, MIT Press: 231-270.
- Maurice, M., A. Sorge, et al. (1980). "Societal Differences in Organizing Manufacturing Units: A Comparison of France, West Germany and Great Britain." Organization Studies 1(1): 59-86.
- McIntosh, S. (2005). Evidence on the Balance of Supply and Demand for Qualified Workers. What's the Good of Education?: The Economics of Education in the UK. S. Machin and A. Vignoles. Princeton, Princeton University Press: 169-188.
- Metcalf, D. (2001). British Unions: Dissolution or Resurgence Revisited? CEP Discussion Paper. London.
- Mitani, N. (1998). France: Internal Labour Markets and Wage Structure. Wage Differentials: An International Comparison. T. Tachibanaki. London, Macmillan: 271-327.
- OECD (2003). Taxing Wages 2001-2002. Paris.
- OECD (2004a). OECD Principles of Corporate Governance. Paris, Organisation for Economic Co-operation and Development.
- OECD (2004b). Taxing Wages 2002-2003. Paris.
- Office for National Statistics (2000). Standard Occupational Classification 2000: Volume 1 - Structure and Descriptions of Unit Groups. London, The Stationery Office.
- Office of Population Censuses and Surveys (1990). Standard Occupational Classification: Vol 1 - Structure and Definition of Major, Minor and Unit Groups. London, HMSO.

- Ogden, S. and R. Watson (2004). "Remuneration Committees and CEO Pay in the UK Privatized Water Industry." Socio-Economic Review(2): 33-63.
- Okun, A. M. (1975). Equality and Efficiency: The Big Tradeoff. Washington, DC, The Brookings Institution.
- Ortega (2004). Le marché du travail français dans (où à travers) le miroir britannique et espagnol. Les papiers du CERC, Conseil de l'emploi, des revenus et de la cohésion sociale.
- O'Sullivan, M. (2000). Contests for Corporate Control: Corporate Governance and Economic Performance in the United States and Germany. Oxford, Oxford University Press.
- Pendleton, A. and H. Gospel (2005). Markets and Relationships: Finance, Governance, and Labour in the United Kingdom. Corporate Governance and Labour Management: An International Comparison. H. Gospel and A. Pendleton. Oxford, Oxford University Press: 59-83.
- Pierce, B. (2001). "Compensation Inequality." The Quarterly Journal of Economics **116**(4): 1493-1525.
- Piketty, T. (2001). Income Inequality in France, 1901-1998. CEPR Discussion Paper. London.
- Pinsonneault, A. and K. L. Kraemer (1997). "Middle Management Downsizing: An Empirical Investigation of the Impact of Information Technology." Management Science **43**(5): 659-679.
- Ponsard, J.-P. (2001). Stock Options and Performance-Based Pay in France. U.S.-France Analysis Series. Washington, DC, The Brookings Institution.
- Pontusson, J., D. Rueda, et al. (2002). "Comparative Political Economy of Wage Distribution: The Role of Partisanship and Labour Market Institutions." British Journal of Political Science **32**: 281-308.

- Prasad, E. S. (2000). The Unbearable Stability of the German Wage Structure: Evidence and Interpretation. IMF Working Paper.
- Prasad, E. S. (2002). Wage Inequality in the United Kingdom, 1975-99. IZA Discussion Paper. Bonn.
- Prendergast, C. (1999). "The Provision of Incentives in Firms." Journal of Economic Literature **37**: 7-63.
- Robbins, S. P., R. Bergman, et al. (2000). Management. Sydney, Prentice Hall.
- Romans, F. and G. Séroussi (2003). La dynamique des salaires et du coût du travail entre 1996 et 2000. France, portrait social 2003/2004: 125-138.
- Roux, S. (2001). Refonte du panel DADS: principes et premières estimations d'emploi et de salaire.
- Rowthorn, R. and K. Coutts (2004). "De-Industrialisation and the Balance of Payments in Advanced Countries." Cambridge Journal of Economics **28**: 767-790.
- Ryan, P. (1996). "Factor Shares and Inequality in the UK." Oxford Review of Economic Policy **12**(1): 106-126.
- Schettkat, R. (2003). "Are Institutional Rigidities at the Root of European Unemployment?" Cambridge Journal of Economics **27**(6): 771-787.
- Schmitt, J. (1992). Creating a Consistent Data Set from the General Household Survey, 1974-1988.
- Schmitt, J. (1995). The Changing Structure of Male Earnings in Britain, 1974-1988. Differences and Changes in Wage Structures. R. B. Freeman and L. F. Katz. Chicago, University of Chicago Press.
- Streeck, W. (1997). "German Capitalism: Does it Exist? Can it Survive?" New Political Economy **2**(2): 237-256.

- Stuttard, N. (2002). NESPD - Documentation for the 2001 Panel. London, Office for National Statistics.
- Tachibanaki, T., Ed. (1998). Wage Differentials: An International Comparison. London, Macmillan Press.
- Thelen, K. (2004). How Institutions Evolve: The Political Economy of Skills in Germany, Britain, the United States, and Japan. Cambridge, Cambridge University Press.
- Thelen, K. and S. Steinmo (1992). Historical Institutionalism in Comparative Politics. Structuring Politics: Historical Institutionalism in Comparative Analysis. S. Steinmo, K. Thelen and F. Longstreth. Cambridge, Cambridge University Press: 1-32.
- Tolliday, S. and J. Zeitlin (1991). Conclusion: National Models and International Variations in Labour Management and Employer Organization. The Power to Manage? Employers and Industrial Relations in Comparative-Historical Perspective. S. Tolliday and J. Zeitlin. London, Routledge: 273-343.
- Torrini, R. (2005). "Cross-Country Differences in Self-Employment Rates: the Role of Institutions." Labour Economics 12: 661-683.
- Torrini, R. (2006). Self-Employment Incidence, Overall Income Inequality and Wage Compression.
- Towers Perrin (2007). Global Compensation Planning Report: Salary Movement and Key Economic Indicators around the World. London, Towers Perrin.
- Towers Perrin (2008). Top Executive Remuneration Survey: 2007 UK Insights. London, Towers Perrin.
- Tzioumis, K. (2005). Essays on Managerial Incentives: Relative Performance Evaluation, Stock Option Introduction, Union Effect and Politics in CEO

Compensation in the United States. Department of Industrial Relations. London, London School of Economics: 154.

Vernon, G. (2003). "Comparative Work Organisation, Managerial Hierarchies and Occupational Classification." Employee Relations 25(4): 389-404.

Visser, J. (2005). Wage Bargaining Institutions in Europe: A Happy Marriage or Preparing for Divorce? AIAS Working Paper. Amsterdam.

Wood, A. (1994). North-South Trade, Employment and Inequality: Changing Fortunes in a Skill Driven World. Oxford, Oxford University Press.

Wood, A. (1995). "How Trade Hurt Unskilled Workers." The Journal of Economic Perspectives 9(3): 57-80.

Zeitlin, J. (1991). The Internal Politics of Employer Organization: The Engineering Employers' Federation 1896-1939. The Power to Manage? Employers and Industrial Relations in Comparative-Historical Perspective. S. Tolliday and J. Zeitlin. London, Routledge: 52-80.

Ziegler, J. N. (2000). "Corporate Governance and the Politics of Property Rights in Germany." Politics and Society 28(2): 195-221.