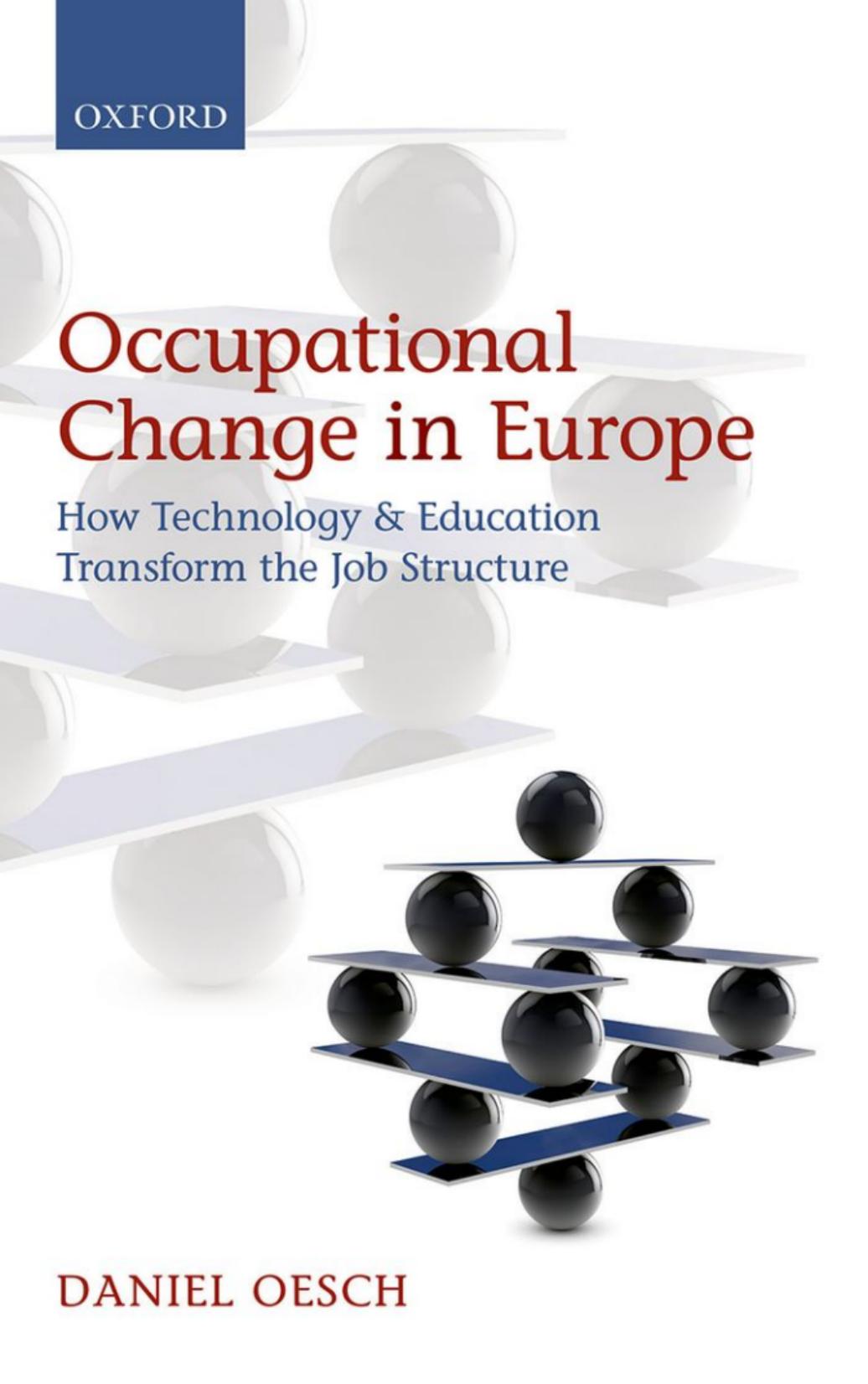


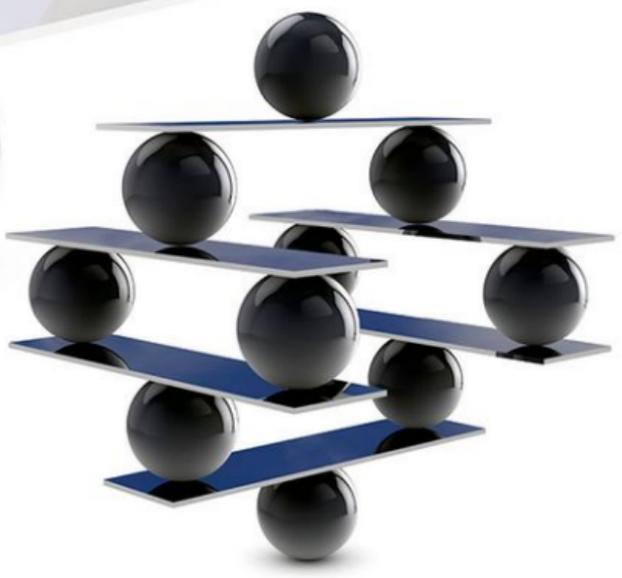


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Occupational Change in Europe

How Technology & Education
Transform the Job Structure



DANIEL OESCH

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How Technology and Education Transform the Job Structure

Daniel Oesch

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To Joanna

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Preface

This book was prompted by a policy recommendation—in the early 2000s, influential economists urged European governments to allow for greater wage disparity and to ease the creation of low-end service jobs. The idea gaining ground was that Europe desperately needed bad jobs—and without greater inequality, these low-wage jobs would not materialize. This recommendation appeared counterintuitive to me—why should greater inequality, more bottom-end jobs, and more disparate life-chances be the road to economic progress? Intrigued by the issue, I began to analyse what types of jobs had been expanding—and declining—in Western Europe since 1990: good jobs, bad jobs, or both? More precisely, I wondered whether countries with low unemployment such as Britain, Denmark, and Switzerland had created employment in different occupations than Germany and Spain.

I was able to devote a great deal of time to this issue thanks to the generous financial support of the Swiss National Science Foundation (grant no 101512–122522). The basis of this book was thus laid during a sabbatical year 2008–9 at the University Pompeu Fabra in Barcelona where Gøsta Esping-Andersen and Luis Ortíz proved to be outstanding hosts. At Pompeu Fabra, I also greatly benefitted from working with Jorge Rodríguez Menes, who ran all the analyses on the Spanish labour market and provided me with precious insight into the book's topic. A result of this cooperation appeared in 2011 in the *Socio-Economic Review* under the title 'Polarization or Upgrading?'

Back in Switzerland, I continued to work on the manuscript at the University of Geneva where I relied—once again—on Roman Graf for help with STATA and the data analysis. The book was finally concluded at the University of Lausanne where I had the good fortune to become part of the National Centre of Competence in Research 'LIVES—overcoming vulnerability: life-course perspectives', funded by the Swiss National Science Foundation. Close to the end, Emily Murphy improved the manuscript's language and Isabel Baumann showed me how smart people deal with bibliographies. I warmly thank these colleagues and friends for their help.

Preface

Between 2009 and 2012, the book's argument was presented at seminars and conferences at the University Pompeu Fabra in Barcelona, the University Cattolica in Milan, the University of Amsterdam, Nuffield College in Oxford, the Hamburg Institute for Social Research, the University of Zurich, the European Union Institute in Florence, and the University of Mannheim. For their comments, I am very grateful to the seminar participants, and in particular, to David Autor, Fabrizio Bernardi, Giuliano Bonoli, Gøsta Esping-Andersen, Yves Flückiger, Dominique Joye, Michael Gebel, Emily Murphy, Jorge Rodríguez Menes, Luis Ortíz, Sebastián Sarasa, David Soskice, as well as the three reviewers. Especially helpful were the suggestions and the encouragement provided by Duncan Gallie. Finally, I wish to dedicate this book to Joanna Barczyk. Albeit largely unfazed by my writing, she has been a lovely companion during the years in Barcelona, Geneva, and Lausanne.

Daniel Oesch
Lausanne, January 2013

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Introduction

Jobs Prospects and Life Chances

This book examines the patterns of occupational change in Western Europe. It sifts through a mountain of labour market data in order to throw new light on an old question. At least since the Industrial Revolution and Karl Marx, scholars have been obsessed by the question of how the employment structure evolves: towards good jobs, bad jobs, or increasing polarization? Three issues are at stake in this debate. At the micro-level of single jobs, the concern is with the quality of new employment created. Academics and politicians alike want to know what types of jobs are expanding: well-paid managerial jobs or low-paid auxiliary jobs, high-end professional jobs or bottom-end service jobs? At the macro-level of social structure, the question raised is whether occupational change transforms affluent countries into large middle-class societies, or whether we head towards a future of increasingly divided class societies? The micro- and macro-levels of analysis are bridged by the concern for social mobility. The key question here is whether changes in the employment structure will allow forthcoming generations to move to more rewarding jobs than those held by their parents—or whether downward mobility is the more likely outcome.

Changes in the employment structure have far-reaching social implications. Of course, a student of occupational change primarily learns about the future of work, skills, and employment. But additionally, by grasping the job prospects in contemporary labour markets, he or she also gets an idea of the life chances that European societies offer to people. And beyond the production sphere, he or she also finds out what occupational groups and electoral constituencies are likely to form the backbone of European democracies in the first decades of the 21st century.

Very different verdicts have been rendered on the evolution of the employment structure in the history of the social sciences. In the 1850s, Karl Marx observed that mechanization in textiles had led to the substitution of qualified artisans by low-educated labour. Extrapolating this trend from the early phases of

industrialization to the future, he expected that technology would downgrade the occupational system and lead to a steady expansion of the proletariat. A century later, Daniel Bell (1973) proclaimed the arrival of the post-industrial knowledge society, where the growth of the 'professional and technical stratum' would upgrade the employment structure. More recently, labour economist David Autor and his colleagues (2003) argued that technology would make mid-range jobs in manufacturing and the back office increasingly redundant, while leading to growth in both high- and low-end services. The result would be a polarization of the employment structure. This argument shook the consensus view among economists that skill-biased technical change was leading to a linear increase in the demand for a highly educated workforce at the expense of low-educated workers.

The jury is thus still out on the pattern of occupational change. However, there is consensus on a related issue, namely that educational attainment has risen dramatically in Western Europe over the last decades. It suffices to compare over time the proportion of 25- to 34-year-old people who have attained tertiary education. In the 1960s, only 8 per cent of young Spaniards and 16 per cent of young Britons and Swiss had a degree from a university, college, or polytechnic. In 2009 this was the case for 40 per cent of 25- to 34-year olds in Britain, Spain, and Switzerland. Educational expansion is all the more striking if we remember that it has not been limited to the tertiary level, but also extended to upper secondary schooling and vocational training. In Britain, only 52 per cent of the 25- to 34-year-old group had obtained at least upper secondary education in the mid-1960s compared with 77 per cent in 2009. In Spain, the share of young people with upper secondary education took an even more impressive leap from 11 per cent in the mid-60s to 64 per cent in 2009 (OECD 2011: 15).

We thus have a clear idea of what has happened with education. Yet the open question is to what extent growing educational attainment also translated into more highly skilled and better-paid jobs. This question lies at the heart of this book—and the following pages strive to answer it for five West European countries: Britain, Denmark, Germany, Spain, and Switzerland. The period under study stretches over the two decades between the fall of the Berlin Wall in 1989 and the Great Recession in 2008. Our study is not based on aggregate data readily available from government reports and OECD reviews, but relies on a myriad of individual-level analyses. These analyses greatly benefit from the availability of large-scale labour force surveys since the early 1990s.

Employment polarization would make for the most spectacular finding—and a growth industry of mostly Anglo-Saxon academics has

already gone to work to explain its causes. However, data do not always comply with the wishes of researchers. Our first and foremost finding is not that the occupational structure in Western Europe polarized over the last two decades, but that it was upgraded. In all five countries, employment expanded much more strongly in professional and managerial occupations than in production jobs, menial services, or back office positions. No matter whether job quality is measured in terms of median earnings or educational requirements, we observe much stronger employment growth in highly paid and highly skilled occupations than in intermediary and low-end occupations. Occupational upgrading appears to be primarily driven by the expansion of two categories: managers in business services such as administrators, treasurers, consultants, and analysts, as well as (semi)-professionals in social services such as medical doctors, teachers, social workers, and nurses. In contrast, the numerical importance of two other categories strongly declined: production workers such as mechanics, maintenance fitters, machine operators, and assemblers as well as office workers such as secretaries, typists, clerks, and cashiers. In other words, we find that the salaried middle class of professionals and managers expanded at the expense of the lower-middle class and the industrial working class. As a result, the class structure has moved upwards in all five countries.

Although this general trend emerges clearly from our analysis, one reservation needs to be made. Job losses in Britain—and to a smaller extent also in Switzerland—were stronger in the middle than in the bottom of the occupational hierarchy. We observed a j-shaped pattern of occupational change in Britain. The drift towards polarization, although not overwhelming, is thus real in some countries, but not in others. This leads us to the question about the causes behind these cross-country differences—and hence the driving force of occupational change.

The Determinants of Occupational Change

It is much easier to establish *what* happened—occupational upgrading—than to explain *why* it happened. Occupational change is always the result of the joint actions taken by employers and employees in a given institutional context. Accordingly, the search for a prime suspect is an intricate task. Nonetheless, most sociologists and economists would agree that long-term change in the occupational structure is driven by technology. Yet technological innovations may affect the employment structure differently over time. While the technological advances of the early Industrial Revolution crowded out craft workers and made greater

use of low-educated labour, computers and the Internet have primarily stimulated demand for highly educated staff. More recently, it has been argued that automation readily takes over routine production and clerical tasks, but has little impact on the interpersonal tasks done in low-paid services (Autor et al. 2003; Manning 2004).

From this theoretical premise, it is uncertain whether technological change by itself should lead to upgrading or polarization. What is clear, however, is that it should affect affluent countries in a similar way—to the extent that West European firms have access to similar levels and types of technology. It is here that a comparative research design proves useful. Developments in technology can explain common trends in occupational upgrading across countries, but leave us wondering as to the causes of cross-country variation: why is there a stronger trend towards occupational polarization in Britain and the United States than in Denmark and Germany?

One answer focuses on the evolution of labour supply—on the skill profile of new labour market entrants and immigrants. The idea is that while technological progress affects firms' demand for labour, firms do not adopt new technologies independently from the type of workers they find in the labour market. Rather, firms will resort to different production techniques and create jobs in different occupations depending on whether highly educated or lowly educated workers abound in a given region. This argument suggests that a country's pattern of occupational change can only be understood by looking at changes in both labour demand and labour supply, notably educational output and immigration.

An influential American study found that two thirds of the jobs created in the bottom tier of the US labour market during the 1990s were filled by immigrants, mostly Hispanics (Wright and Dwyer 2003: 309). Immigration was thus paramount for the expansion of low-end service jobs in the United States: without a growing pool of workers willing to fill these low-wage jobs, employment at the labour market's bottom end would not have expanded to the same extent. In our study, two countries also experienced large surges of lowly educated immigration between the end of the 1990s and the recession that began in 2008: Britain and Spain. It is likely that the abundant supply of lowly educated migrant labour has led employers to create jobs in different occupations.

Potentially an even greater source of cross-country differences in occupational change stems from labour market institutions. Governments vary in how they regulate collective organization, wage-setting, and employment relations—and this variation is likely to channel firms' demand for labour into different occupational outcomes. Countries thus have some non-negotiable latitude in how they

accommodate technical change and translate it into the organization of labour (Fernández Macías 2010: 226). Schematically, the idea is that institutional constraints affect the labour market choices of employers who can opt for either a 'high-road' or a 'low-road' job strategy (Streeck 1997; Acemoglu 2003). The 'low-road' implies a low-wage, low-skill, low-training, and low-productivity strategy, whereas the 'high-road' refers to the opposite high-skill and high-productivity option. Upon what path firms embark crucially depends on labour market institutions. Since the 1980s, declining union membership and an eroding minimum wage in the United States have made it substantially easier for American firms to respond to market challenges by taking the 'low road' (Gautié et al. 2010). Over the same period, Continental European institutions—notably collective bargaining, minimum wage legislation, and welfare state benefits—tended to push firms towards the 'high-road' alternative. Companies thus had an interest in improving their workers' productivity through innovative work organization and investment in new technologies and training (Bosch 2009).

Of course, the 'high-road' of occupational upgrading may not warrant excessive optimism if it comes at the cost of unemployment—if the lowly educated are simply pushed out of the labour market. Given the evidence that modern technology reduces the demand for less-educated workers, prominent economists expect governments to be faced with a thorny choice. They can set high wage floors and thus favour the creation of decent jobs; but they then have to cope with weak growth in low-skilled services and high unemployment. Alternatively, governments can deregulate wage-setting and thus promote job creation in low-end services. But they have to then accept greater inequality and a polarizing labour market (Krugman 1994; Iversen and Wren 1998; Scharpf 2000; Kenworthy 2008). The central issue in the debate on occupational change thus concerns the job prospects that post-industrial labour markets offer to lowly educated workers.

Fortunately, governments may have the choice between more than just the two undesirable outcomes of (i) occupational upgrading at the cost of unemployment, or (ii) employment for the lowly educated at the cost of polarization. The experiences of Denmark and Switzerland suggest a third and more attractive option: occupational upgrading without an increase in either lowly educated unemployment or wage inequality. The way out of the dilemma has to do with the evolution of skills supplies. Over the last two decades, not only did jobs for the lowly educated become scarcer, but so too did the lowly educated themselves. While technological advances increased firms' demands for qualified labour, educational expansion made sure that