

Introduction

The demographic change in the industrialised countries changes the relative population shares of younger and older people. This equally applies to the working age population and, hence, to labour supply. For example, the ratio of the age groups 15 to 39 and 40 to 64 declined between 1978 and 2005 from 1.7 to 1.0 in Canada, from 1.2 to 0.9 in Germany, from 1.4 to 1.0 in Japan, and from 1.5 to 1.0 in the US. This trend will continue over the next 20 years due to low or even diminishing fertility rates. As (un)employment-related characteristics of younger and older workers differ, ageing has profound consequences for the workings of the labour market and its outcomes. Demographic processes touch directly on labour supply and demand, thus driving employment and unemployment. By shaping the productivity profile of companies, regions and countries, as well as their propensity to innovate, age structure emerges as a crucial determinant for corporate competitiveness and economic development. Changing population structures have an impact on the incentives to accumulate and transfer knowledge, again bearing on the scope for sustained economic growth. Finally, issues arise about whether the shortfall of young and middle-aged workers within an ageing economy can be offset by a better integration of female, foreign and older workers. This volume provides a collection of research papers on a range of salient issues related to labour markets and demographic change. The papers were presented during the 2nd European Workshop on Labour Markets and Demographic Change held at the University of Rostock in May 2007 and co-sponsored by the University of Rostock, the Max Planck Institute for Demographic Research and the Rostock Center for the Study of Demographic Change.

Chapter 1 opens with an assessment of the age structure of employment and unemployment. Golo Henseke, Pascal Hetze and Thusnelda Tivig use different measures of ageing to obtain a detailed picture of the ageing process between 1975 and 1995 of the workforce employed in German industries. The results reveal pronounced differences across sectors and industries in the age composition and the dynamics of ageing. Furthermore, fast ageing is associated with large shifts in the middle-age groups, whereas slow ageing rather relates to changes in the margins of the age distribution. Carsten Ochsen examines how the level of unemployment depends on the distribution of unemployment by age. Using an extension of the standard equilibrium unemployment model he finds for a set of OECD countries that the distribution of unemployment by age has a hump-shape effect on the unemployment rate.

The focus of Chapter 2 lies on the relationship between age structure and productivity at the firm level. Matthias Weiss analyses the relation between workers' absenteeism and age diversity. Age-diverse teams are sometimes advocated as a means to improve productivity. According to the results, however, age diversity is

detrimental to productivity in that it leads to more absenteeism. Bernhard Mahlberg, Inga Freund and Alexia Prskawetz assess the relationship between a firm's productivity level and the age composition of its employees using a matched employer-employee data set for Austria. It is their objective to test whether the hump-shaped age profile of the employees' age structure on labour productivity is robust once controlled for training intensity. They find a simultaneous, negative productivity effect of the share of young workers and older workers on labour productivity in samples of small and large firms alike. Using data of German ICT- and knowledge-intensive service providers, Jenny Meyer finds that the age of the workforce affects the probability to adopt new or significantly improved technologies. Firms with a higher share of younger employees are more likely to adopt such technologies. As it turns out, however, the impact of age structure on the propensity to adoption depends crucially on the organisation of firms. Thus, an older workforce fosters adoption in firms relying on flat hierarchies or on teamwork.

Chapter 3 deals with the effects of ageing on innovation. Golo Henseke and Thusnelda Tivig analyse whether and how an ageing and shrinking population is significantly related to the innovation process. Based on their empirical analysis they confirm past conjectures stating that inventive productivity is age-dependent and unequally distributed among inventors. Using a regional knowledge production function to explain patenting activity in German districts, Katharina Frosch and Thusnelda Tivig show that age affects patenting performance through two channels, namely the regionally available stock of age-specific human capital and the age structure of the labour force itself.

The role of demographic processes for human capital accumulation is studied in Chapter 4. Michael Kuhn and Pascal Hetze examine the transfer of know-how from old and experienced workers to their junior co-workers, whether it is efficient and how it is affected by the ageing of the workforce. They show how the knowledge transfer can be understood as an intertemporal market, where lower future demand for know-how due to a lack of young workers reduces the current incentives to invest in know-how. Francesco Lancia and Giovanni Prarolo provide a positive theory that explains how an economy might evolve when the longevity of its citizens both influences and is influenced by the process of economic development. The model focuses on the crucial role played by heterogeneous interests in determining innovation policies, which are one of the keys to the growth process: The economy can be discontinuously innovation-oriented due to the different incentives of individuals and due to different schemes of political aggregation of preferences. Christian Lumpe and Benjamin Weigert analyse the impact of high skilled immigration on native human capital investment in a search-theoretic model. They show that high skilled immigration leads to rising educational attainment of natives.

Chapter 5 is devoted to issues in female labour supply. Elena Vidal Coso, Fernando Gil Alonso and Andreu Domingo i Vals apply factor analysis and linear

multiple regressions to 2006 data from the Spanish Labour Force Survey (EPA) in order to identify the determinants of the regional distribution of the working age extra-communitarian female population. Results relate to the relationship at the level of province between the workforce share of extra-communitarian women and the demographic and labour characteristics of each province and the characteristics of the female autochthonous workforce (education level, degree of occupational qualification, activity rates). Anna Matysiak and Daniele Vignoli undertake a meta-analysis of published research on the relationship between women's employment and their fertility. Their results suggest that this relationship is strongly conditioned by the institutional context and that it has changed over time even when controlling for context. This implies that regional and/or temporal variations in institutional factors, structural factors and socio-cultural factors have been important in determining the magnitude of the conflict between work and family.

Finally, in Chapter 6 two aspects of retirement are analysed. Martin Brussig and Christina Wübcke study the recent German labour market policy of 'facilitated receipt of benefits (FRB) without an obligation to seek employment' as a pathway to retirement for the unemployed aged 58+. Using data from a cross-sectional labour force survey, they study the socio-economic determinants for participation in the FRB programme. One main result is that FRB should be viewed as a route towards involuntary early retirement rather than as a way of avoiding the employment agency's pressures to search for a job. Francesca Rinesi analyses the employment state transition of older workers (50 to 64) in Italy. She concludes that for old workers of both sexes the Italian labour market has become even less dynamic over the 1990s. In particular, for female workers the risk to exit the labour market has decreased from a higher level at the outset towards the level of male workers. A regression analysis identifies age, education, industrial sector and part-time employment as key determinants of retirement for both sexes, whereas male retirement is also driven by economic factors and geographical location.

It is obvious that this book can only provide selective insights into the role of demographic developments for the labour market. More work is needed to get a deeper understanding of this complex set of issues at the interface of economics and demography. Nevertheless, we are convinced that the volume provides an insightful introduction to the topic and that it manages to match the multitude of research questions with an equally broad array of methods.

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